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МЕДИЦИНСКИЕ НАУКИ

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AFAD QURBANOV «ONOMALOGIYA MƏKTƏBININ YARADICISI» KIMI

Xülasə:*Məqalədə Afad Qurbanovun Azərbaycan dilçiliyinə həsr etdiyi əsərlərdən və eyni zamanda Azərbaycan onomalogiyasının nəzəri əsaslarının tədqiqinə həsr edilmiş fundamental monoqrafiyadan bəhs edilir. Bu əsərlər Azərbaycan dilçiliyində və ümumiyyətlə, türkoloji dilçilikdə ilk dəfə olaraq xüsusi adların hərtərəfli linqvistik tədqiqinə həsr olunmuşdur. Afad Qurbanov bu əsərlərində fundamental onomastik təlimin nəzəri əsaslarını şərh etmiş, Azərbaycan dilində və bütövlükdə dünya dillərində xüsusi adların qruplarını müəyyənləşdirmişdir. Afad Qurbanov Azərbaycan dilçiliyi sahəsində elə bir ənənə qoyub getmişdir ki, bu ənənə hələ uzun tarixlər boyu yaşayacaq və onu da yaşadacaqdır.*

Açar sözlər*: Afad Qurbanov, onomologiya, linqvistik tədqiq, onomastika problemləri, xüsusi adlar.*

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AFAD GURBANOV AS THE "FOUNDER OF THE SCHOOL OF ONOMOLOGY".

Abstract:*The article talks about Afad Gurbanov's works dedicated to Azerbaijani linguistics and at the same time the fundamental monograph dedicated to the study of the theoretical foundations of Azerbaijani onomology. For the first time in Azerbaijani linguistics and Turkological linguistics in general, these works are devoted to a comprehensive linguistic study of proper names. In his works, Afad Gurbanov commented on the theoretical foundations of the fundamental onomastic teaching and defined the groups of special names in the Azerbaijani language and in the languages of the world as a whole. Afad Gurbanov has left such a tradition in the field of Azerbaijani linguistics that will continue to live for many years to come.*

Key words*: Afad Gurbanov, onomology, linguistic research, problems of onomastics, proper names.*

Giriş

Afad Qurbanovun «Onomalogiya məktəbinin yaradıcısı» kimi formalaşmasında, təbii ki, onomalogiyaya həsr etdiyi əsərləri xüsusi rol oynamışdır. Onun onomalogiya məsələlərinə dair 100-ə qədər məqaləsi, onlarca kitabı və bir neçə monoqrafiyası çap olunmuşdur.

Alimin bu sahədəki ən böyük müvəffəqiyyəti 1988-ci ildə nəşr edilmiş və 1989-cu ildə Dövlət mükafatına layiq görülmüş «Azərbaycan dilinin onomalogiyası» adlı mükəmməl və əhatəli monoqrafiyası olmuşdur. Əsərdə Azərbaycan dilçiliyində ilk dəfə olaraq onomastika problemləri elmi-nəzəri aspektdən şərh edilmişdir.

Professor A.Qurbanov onomalogiya problemlərinə xüsusi əhəmiyyət verərək 2004-cü ildə onomastika məsələlərinə dair 2 cilddən ibarət böyük fundamental monoqrafiya («Azərbaycan onomalogiyasının əsasları», I və II cildlər) nəşr etdirmişdir. Yüksək elmi səviyyədə və səlis dildə yazılan bu ikicildlik Azərbaycan onomalogiyasının nəzəri əsaslarının tədqiqinə həsr edilmiş fundamental monoqrafiyadır. Əsər Türkiyə və Rusiyada da çap edilmişdir.

Bu əsərlər Azərbaycan dilçiliyində və ümumiyyətlə, türkoloji dilçilikdə ilk dəfə olaraq xüsusi adların hərtərəfli linqvistik tədqiqinə həsr olunmuşdur. Afad Qurbanov bu əsərlərində fundamental onomastik təlimin nəzəri əsaslarını şərh etmiş, Azərbaycan dilində və bütövlükdə dünya dillərində xüsusi adların qruplarını müəyyənləşdirmişdir. Hazırda bu sahədəki bütün tədqiqatlar Afad Qurbanovun müəyyənləşdirdiyi qruplaşma əsasında aparılır. Bundan başqa, tədqiqatçı-alim onomastik dil vahidlərinin yaranması və dəyişməsi, poetik və üslubi xüsusiyyətlərinin, orfoqrafik və orfoepik problemlərinin də nəzəri əsaslarını işləmişdir.

Əlavə olaraq, 1988-ci ildən bəri alimin «Dünyada türk adları» (2000), «Azərbaycanlı adları: uşağa necə ad seçməli» (1993), «Ad və insan» (2002), «Azərbaycanlı adları lüğəti» (2002), «Türk xalqlarında advermə ənənələri» (2002) və s. kimi kitabları, onomastikaya dair yüzlərcə məqaləsi çap olunmuşdur.

Professor Afad Qurbanovun yaratdığı onomastika məktəbinin və yazdığı elmi əsərlərin nəinki Azərbaycan dilçiliyinin, həm də türkoloji dilçiliyin sürətlə inkişafında xüsusi rolu olmuşdur. Onun onomastika sahəsindəki elmi fəaliyyəti həm yerli, həm də xarici görkəmli dilçilər, akademiklər tərəfindən çox yüksək qiymətləndirilmişdir.

Akademik M.Şirəliyev «Azərbaycanda onomastika məktəbi və onun gələcəyi» adlı məqaləsində yazır: «A.Qurbanovun «Azərbaycan dilinin onomalogiyası» adlı əsəri təkcə bizim dilçiliyimiz üçün deyil, dünya türkoloji dilçiliyi üçün də çox qiymətlidir. Mən tam məsuliyyətlə deyə bilərəm ki, Afad Qurbanov bu əsəri ilə Azərbaycan onomastika məktəbinin əsasını qoymuşdur».

1989-cu ildə İstanbulda nəşr edilən «Türk dünyası araşdırmaları» adlı sanballı elmi məcmuənin bir neçə səhifəsi bu əsərin təhlilinə həsr olunmuşdur. Rəyçi Xəlil Açıqgöz yazır: «Möhtərəm professor Afad Qurbanov illərdən bəri gözlədiyimiz türk və Azərbaycan onomastikasının nəzəri və əməli problemlərini

böyük bir diqqətlə işləmişdir. Ona nə qədər təşəkkür etsək azdır. Kitabın qısa zamanda Türkiyə türkcəsilə nəşrini təmənna edirik. Əsər ölkəmizdə də nəşr edilərsə, türk onomastik araşdırmaları daha aydın işıqlandırılar».

Həmin kitab haqqında Almaniyanın Münhen şəhərində yaşayan tədqiqatçı Yasin Aslanın rəyi də diqqəti cəlb edir: «Bir azərbaycanlı olaraq Azərbaycan xalqına və elminə göstərdiyiniz xidmətlər üçün Sizi təbrik edir, müvəffəqiyyətlərinizin davam etməsini arzu edirəm. Vətən Sizin kimi övladları ilə fəxr etməlidir».

Afad Qurbanovun onomastika sahəsindəki sanballı işlərindən biri də Azərbaycan Ensiklopediyası xətti ilə təşkilatçılığı və redaktorluğu ilə 7 minə yaxın coğrafi adı əhatə edən «Azərbaycanın Toponimlər Lüğəti»ni ortaya çıxarmasıdır.

Azərbaycan Dövlət Pedaqoji Universitetində Azərbaycan Onomastika Cəmiyyətinin və Onomastika Elmi Mərkəzinin yaradılması, «Onomastika» elmi-onomastik jurnalının və 25 oktyabr Onomastika Gününün təsis olunması, onomastika problemlərinə həsr edilmiş genişmiqyaslı respublika konfranslarının keçirilməsi də bilavasitə Afad müəllimin adı ilə bağlıdır.

Professor Afad Qurbanovun yaratdığı «Azərbaycan onomalogiyası» elmi məktəbi bütün dünyada (ABŞ, Kanada, Finlandiya, Fransa, Belçika, Norveç, Türkiyə, Rusiya, İran və s.) tanınmışdır. Bir çox xarici ölkələrdə A.Qurbanovun rəhbərliyi ilə onomastik tədqiqatlar aparılmışdır. Məhz A.Qurbanovun rəhbərliyi ilə onomalogiyanın problemlərinə dair müxtəlif mövzularda onlarca namizədlik və doktorluq dissertasiyası müdafiə edilmişdir.

Onun şəxsi təşəbbüsü, təşkilatçılığı və gərgin əməyi nəticəsində 1986-cı ildən başlayaraq Azərbaycan onomastikası problemlərinə həsr olunan 13 respublika konfransı keçirilmişdir. Konfranslar əhatə miqyasına görə çox geniş olmuşdur. Burada keçmiş Sovetlər İttifaqının, demək olar ki, əksər müttəfiq respublikalarının elmi ictimaiyyət nümayəndələri iştirak etmişlər. Konfransların materialları tez bir zamanda kitab şəklində çap edilmişdir. Sonralar isə bu konfranslar ənənə xarakteri alaraq iki ildən bir keçirilməyə başlanmışdır.

Eyni zamanda, A.Qurbanovun təşəbbüsü ilə sədr müavini olduğu SSRİ Elmlər Akademiyasının Sovet Türkoloqları Komitəsinin tərkibində Türk onomastikası bölməsi yaradılmış və onomastik araşdırmalar bütün SSRİ-nin türkdilli respublikalarında aparılmağa başlanılmışdır.

Afad Qurbanov Azərbaycan dilçiliyi sahəsində elə bir ənənə qoyub getmişdir ki, bu ənənə hələ uzun tarixlər boyu yaşayacaq və onu da yaşadacaqdır.

A.Qurbanovun onomastika sahəsindəki fəaliyyətində əsas cəhətlərdən biri ustad elm xadimi kimi öz ardıcıllarını yetişdirmək və onların tədqiqi fəaliyyətini istiqamətləndirməkdən ibarətdir. Onun göstərişlərinə əsasən Azərbaycan onomastikası aşağıdakı elmi istiqamətlər üzrə tədqiq olunur:

1. antroponimika üzrə;
2. etnonimika üzrə;
3. toponimika üzrə;

4. hidronimika üzrə;
5. kosmonimika üzrə;
6. zoonimika üzrə;
7. ktematonimika üzrə.

Bu elmi istiqamətlər üzrə onomastikanın respublikamızda sürətli inkişafı və elmi tədqiqatların geniş vüsət alması məhz prof. Afad Qurbanovun məntiqi görüşlərinin, gərgin əməyinin bəhrəsidir.

A.Qurbanov onomastika üzrə yüzlərcə kitabın, elmi məcmuələrin nəşrinə rəhbərlik etmiş, elmi redaktoru olmuşdur, xeyli sayda dissertasiyalarda rəhbərlik edərək özünə layiq sələflər-davamçılar yetişdirmişdir. Məhz bu görkəmli elm xadiminin rəhbərliyi ilə 1987-ci ildə A. Ş. Hacıyev"Azərbaycan SSR şərq zonası rayonları (Sabirabad, Saatlı və İmişli) toponimlərinin linqvistik təhlili", 1986-cı ildə N.Ə.Əsgərov "Azərbaycan dilində hidronimlər" və K.K. Bəşirov "Azərbaycanın mürəkkəb toponimlərinin leksik-qrammatik xüsusiyyətləri", 1987-ci ildə Ə. Tanrıverdiyev "XVII-XIX əsr Azərbaycan antroponimləri (ədəbi-bədii materiallar əsasında)", 1989-cu ildə V. İ. İsrafilov "Gürcüstan SSR-in Azərbaycandilli oronim və hidronimləri", 1992-ci ildə M.C. Soltanov "Azərbaycan şimal-şərq zonasının (Quba, Xaçmaz, Dəvəçi və Qusar rayonlar) toponimlərinin linqvistik xüsusiyyətləri" mövzularında və daha neçə-neçə tədqiqatçı müxtəlif mövzularda dissertasiyalar müdafiə etmiş, onomastika məktəbinin davamçıları kimi meydana çıxmışdır.

Onomastik vahidlər yalnız dil faktı deyildir. Bu adlar, xüsusən toponimlər həm də mənsub olduğu xalqın tarixinə, iqtisadiyyatına, milli mədəniyyətinə və etnoqrafiyasına, məişət tərzinə, milli adət və ənənələrinə, flora və faunasına və s. aid çox faydalı məlumatları mühafizə edib saxlayan söz xəzinələridir. Bu əsasda V. İ. İsrafilov və Ə. M. Rüstəmovun tədqiqatlarında qonşu respublikaların Azərbaycan mənşəli coğrafi adlarıtədqiqata cəlb edilmiş, dilimizin toponimik arealı müəyyənləşdirilmiş, bir sıra dəyişdirilmiş adların ilkin forması bərpa edilərək dünya ictimaiyyətinə çatdırılmışdır.

A.Ş. Hacıyevin, N. Ə. Əsgərovun, K. K. Bəşirovun, M. C. Soltanovun dissertasiyalarında respublikamızın ərazisindəki bir çox coğrafi adlar linqvistik analizdən keçirilərək tədqiq edilmiş, etimoloji açıqlamalar verilmişdir. Ə. V. Tanrıverdiyevin tədqiqatında XVII-XIX əsr Azərbaycan antroponimləri ədəbi-bədii materiallar əsasında toplanaraq tarixi aspektdə təhlilə cəlb olunmuş, maraqlı elmi nəticələr əldə edilmişdir.

Fəxrlə qeyd etmək lazımdır ki, alimin onomalogiya problemləri ilə bağlı tədqiqat aparan aspirant və dissertantları təkcə Şimali Azərbaycandakı kadrlarla məhdudlaşmır. İndi Türkiyə, İran, Rusiya, Moldova, Gürcüstan kimi ölkələrdə də Afad Qurbanovun rəhbərliyi ilə onomastik tədqiqatlar aparılır.

Əsası A. Qurbanov tərəfindən qoyulmuş Azərbaycan onomastika məktəbi möhkəm özül üzərində qurulmuş, düzgün elmi istiqamət götürmüşdür. Bu məktəbin layiqli davamçıları yetişmişdir və geniş perspektivləri hələ qarşıdadır.

Professor Afad Qurbanovun yaradıcılıq işinin bir istiqamətini də onun elm sahəsindəki təşkilatçılıq fəaliyyəti təşkil etmişdir. Görkəmli alim Afad Qurbanov bu fəaliyyəti ilə də həmişə seçilmiş, respublika ictimaiyyətinin diqqətini cəlb etmişdir. O, daim Azərbaycan elminin inkişafı barədə düşünmüş və bu yolda var qüvvəsini əsirgəməmişdir.

Afad Qurbanov ali məktəbdəki fəaliyyəti dövründə dilçilik fənləri tədrisinin keyfiyyətini yüksəltməklə yanaşı, daim rəhbərlik etdiyi Azərbaycan dilçiliyi kafedrasının elmi potensialının artmasına səy göstərmiş, kafedranın elmi-tədqiqat işlərini müasir elmin tələbləri səviyyəsinə qaldırmağa nail olmuşdur. Onun rəhbərliyi altında kafedrada konkret dilçilik mövzularına həsr olunmuş elmi seminarlar keçirilmiş və bu seminarların materialları onun rəhbərliyi ilə məcmuə şəklində nəşr edilmişdir.

Afad müəllim 1986-cı ildə Azərbaycan dilçiliyi kafedrası nəzdində respublikanın elmi həyatında ilk dəfə olaraq Onomastik elmi mərkəz yaratmış, sonradan həmin mərkəz elmi-tədqiqat problem laboratoriyasına çevrilmiş və burada Azərbaycan onomastikasının müxtəlif problemlərinə dair elmi-tədqiqat işləri aparılmışdır.

Akademik Afad Qurbanovun elmi-təşkilatçılıq qabiliyyəti müdafiə şuralarının sədri vəzifələrində çalışdığı dövrlərdə özünü daha aydın şəkildə göstərmişdir. Ötən əsrin 80-ci illərində Filologiya Elmləri üzrə Müdafiə Şurasının və Pedaqogika Elmləri üzrə Müdafiə Şurasınınonun sədrliyi ilə aparılan iclasları həmişə mütəşəkkil şəkildə keçmiş, şuralara təqdim edilmiş dissertasiyalar müvəffəqiyyətlə müdafiə edilmiş və hamısı Ali Attestasiya Komissiyası (AAK) tərəfindən yekdilliklə təsdiq edilmişdir. Şuraların və onların sədri Afad Qurbanovun ünvanına AAK-dan yaxşı işinə görə həmişə təşəkkür məktubu gəlmiş, xoş sözlər deyilmişdir.

Professor Afad Qurbanov respublika elmi ictimaiyyətində Azərbaycan dilçiliyinin müxtəlif problemlərinə həsr olunmuş elmi konfransların təşkilatçısı kimi tanınmışdır. O, 1986-cı ildən başlayaraq Azərbaycan onomastikası problemlərinə, 1987-ci ildə Azərbaycan nitq mədəniyyəti məsələlərinə, 1988-ci ildə isə Azərbaycan terminologiyası problemlərinə həsr olunmuş respublika miqyaslı elmi konfransların keçirilməsini təşkil etmişdir. Fərəhli haldır ki, keçirilmiş bütün konfransların materialları məcmuə şəklində toplanmış, nəfis kitab şəklində çap edilmişdir.

Görkəmli alim beynəlxalq elmi məclislərdə, konfrans və simpoziumlarda yaxından iştirak etmiş, 1988-ci ilin sentyabr ayında Türkiyənin İstanbul şəhərində keçirilən VI Millətlərarası Türkoloji Konqresdə nümayəndə heyəti tərkibində respublikamızı, elmi ictimaiyyətimizi təmsil etmişdir.Alimin Azərbaycanda toponimik tədqiqatlar haqqında oxuduğu məruzə konfrans iştirakçılarının böyük marağına səbəb olmuş, türk alimlərindən professor Nuri Yuce, professor Tunçer Gülensoy, çinli alim Qulam Qafur öz çıxışlarında Afad Qurbanovun məruzəsinin orijinallığı və yüksək elmi-nəzəri səviyyəsi barədə xüsusi bəhs etmişlər.

Afad Qurbanovun həyatının böyük bir hissəsi, qırx ildən çox Azərbaycan Elmlər Akademiyası ilə bağlı idi. O, Azərbaycan Elmlər Akademiyasının üzvü kimi elmi yaradıcılıq fəaliyyətini Elmlər Akademiyası ilə daim sıx əlaqəli aparmaqla dilçilik elminin inkişaf etdirilməsində öz səylərini əsirgəməmişdir.

A.Qurbanov Azərbaycan Milli Elmlər Akademiyasında Terminologiya Komitəsinin, Dövlət dili haqqında qanun layihəsinin hazırlanması ilə bağlı Komissiyanın, Adlar və Soyadlar üzrə Xüsusi Komissiyanın, Nəsimi adına Dilçilik İnstitutunun Elmi Şurasının, Müdafiə Şurasının, İctimai Elmlər üzrə Əlaqələndirmə Şurasının, Elmlər Akademiyasının yeni nizamnamə layihəsinin hazırlanması və strukturunun təkmilləşdirilməsi üzrə Komissiyanın və digər bir çox komissiyaların fəal üzvü olmuş, gərgin və səmərəli fəaliyyəti, yüksək elmi-təşkilatçılıq qabiliyyəti ilə seçilmişdir.

Afad Qurbanovun Azərbaycan Milli Elmlər Akademiyasının Adlar və soyadlar üzrə xüsusi komissiyasının üzvü kimi azərbaycanlı adlar və soyadların seçilməsində vahid qaydanın müəyyən olunması sahəsində fəaliyyəti xüsusi qeyd edilməlidir. A.Qurbanovun irəli sürdüyü «Azərbaycanlı soyadları haqqında» əsaslandırılmış təklifi əsas konsepsiya kimi qəbul olunmuş və bununla A.Qurbanov öz xalqının milli varlığını qoruyaraq azərbaycanlı soyadlarını düzəldən vahid formantı (-lı, -li, -lu, -lü) müəyyən etmişdir. Eyni zamanda, A.Qurbanov azərbaycanlı adlarını özündə ehtiva edən, şəxsi adlar nəzəriyyəsini əks etdirən və adseçmə (advermə) ənənəsini müəyyən edən «Azərbaycanlı şəxs adları Ensiklopediyası»nı hazırlayaraq nəşr etdirmişdir.

Eyni zamanda, A.Qurbanov 1984-1989-cu illərdə SSRİ Elmlər Akademiyası Sovet Türkoloqları Komitəsinin üzvü, Türk onomastikası bölməsi bürosunun üzvü, Tədris-metodiki bölməsinin rəhbəri, sonradan həmin Komitənin sədr müavini vəzifələrində çalışmış və elmi təşkilatçılığını bütün sovet məkanında göstərmişdir.

Bundan başqa, Afad Qurbanov 1985-ci ildə Aşqabadda keçirilmiş IV Ümumittifaq Türkoloji Konfransda, 1986-cı ildə Daşkənddə keçirilmiş XXIX Beynəlxalq Altayşünaslıq Konfransında, 1988-ci ildə Moskvada keçirilmiş Xalq Təhsili İşçilərininin Ümumittifaq Qurultayında, 1990-cı ildə İstanbulda keçirilmiş Azərbaycan Cəmiyyətlərinin I Qurultayında, Türkiyənin Qeysəriyyə şəhərində keçirilmiş I Millətlərarası Böyük Azərbaycan Konqresində, 1991-ci ildə Türkiyənin Adana şəhərində təşkil olunmuş II Uluslararası Simpoziumda və başqa beynəlxalq məclislərdə məruzələr oxumuş, elmi ictimaiyyətimizi yüksək səviyyədə təmsil etmişdir.

Hər bir elm xadiminin fəaliyyətinin vacib sahəsini çalışdığı ixtisas üzrə elmi kadrlar yetişdirmək işi təşkil edir. Görkəmli dilçi-alim və mahir pedaqoq Afad Qurbanovun respublikamız üçün yüksək ixtisaslı müəllim və filoloq-alimlərin hazırlanması işində böyük xidmətləri olmuşdur. O, nadir alimlərə nəsib ola biləcək ziyalı mühiti yarada bilmişdir.

Akademik Afad Qurbanov ölkəmiz üçün minlərlə yüksək ixtisaslı müəllim hazırlamış, habelə çox sayda filoloq-alimlərin formalaşdırılması

məsələsinə xüsusi diqqət yetirərək 60-dan çox elmlər namizədi və doktoru yetişdirmişdir. Həmin elmi və pedaqoji kadrlar yüksək potensialı, intellektual səviyyəsi ilə həmişə seçilmişlər. Bir faktı qeyd etmək yerinə düşər ki, A.Qurbanovun rəhbərlik etmiş olduğu Azərbaycan dilçiliyi kafedrasının əməkdaşlarından 9 nəfəri 10 ildə doktorluq dissertasiyası uğurla müdafiə edərək filologiya elmləri doktoru elmi dərəcəsi və professor elmi adını almışdır. Həmçinin Afad Qurbanovun ailəsində də həyat yoldaşının elmlər namizədi, beş övladının isə elmlər doktoru kimi formalaşmasında xüsusi rolu olmuşdur.

Elmə gəlmək istəyən gənc dilçilərə Afad Qurbanov yüksək həssaslıq və qayğı ilə yanaşmışdır. O, hesab etmişdir ki, qayğı və həssas münasibət tələbkarlığı azaltmamalıdır. Qayğı pərdəsi altında zəif və heç bir elmi qabiliyyəti olmayan kadrların elmə axınına yol vermək olmaz.

Afad Qurbanov belə düşünürdü ki, elmi fəaliyyət sahəsinə qədəm qoyan hər bir tədqiqatçı üçün əsas və ilkin şərtlərdən biri onun seçdiyi elmin vəziyyətini, dünya elmləri sistemində yerini, digər elmlərdən fərqli olan başlıca əlamətlərini bilməsidir.Elm nümayəndəsi tədqiq etdiyi elm sahəsinin keçmişi, indisi və gələcəyi ilə maraqlanmalı, dərin axtarışlar, geniş müşahidələr əsasında elmi məsələlərin tədqiqi istiqamətlərini özü üçün müəyyənləşdirməkdə əməyini əsirgəməməlidir.

Afad Qurbanov təsadüfi mövzuları, elmi əhəmiyyəti olmayan problemlərin araşdırılmasını lüzumsuz hesab etmişdir. Onun fikrinə görə, mütəxəssis, o cümlədən də dilçi-tədqiqatçı öz sahəsini dərindən bilməli, tədqiq olunan problemin mahiyyətini, kökünü aydınlaşdırmağa cəhd göstərməlidir.

Afad Qurbanovun rəhbərliyi ilə müdafiə olunmuş dissertasiya işlərini mövzularına görə şərti olaraq aşağıdakı kimi qruplaşdırmaq olar: dil və üslub, müasir Azərbaycan dilinin qrammatikasının müxtəlif problemləri, onomastika məsələləri, dil əlaqələri, dil nəzəriyyəsi və dil tarixi.

A.Qurbanovun gərgin fəaliyyəti sayəsində püxtələşən elmi-pedaqoji kadrlar nəinki Azərbaycanın, həm də Rusiyanın, Türkiyənin, Almaniyanın, Gürcüstanın, Türkmənistanın, Qazaxıstanın təhsil və elm ocaqlarında uğurla çalışırlar. O, həmişə yetirmələrinin xoş sorağından qürur hissi keçirmiş, əməyinin hədər getməməsinə sevinmişdir.

Elmin inkişafında və yüksək ixtisaslı kadrların hazırlanmasında xidmətlərinə görə Afad Qurbanov dəfələrlə dövlət başçısının, respublika Ali Soveti, Elmlər Akademiyası və Təhsil Nazirliyinin fəxri fərmanlarına, mükafatlarına, 1981-ci ildə isə Azərbaycan SSR-i «Əməkdar elm xadimi» fəxri adına layiq görülmüşdür. Onun bu sahədəki işi həmişə Ali Attestasiya Komissiyası tərəfindən də yüksək qiymətləndirilmişdir.

Nəticə

Professor Afad Qurbanov artıq 70-ci illərdən keçmiş Sovetlər İttifaqının, eləcə də dünyanın dilçilik və türkologiya elmi məkanına daxil olmuşdur. O, 1984-1989-cu illərdə Moskvada SSRİ Elmlər Akademiyası Sovet Türkoloqları Komitəsinin üzvü (o vaxt Komitənin sədri akademik Andrey Nikolayeviç

Kononov, sədr müavini akademik Edxem Raximoviç Teneşev olmuşdur), Tədris-Metodiki Bölməsinin sədri, Türk Onomastikası Bölməsi bürosunun üzvü və sonradan həmin Komitənin sədr müavini (o zaman Komitənin sədri akademik Edxem Raximoviç Teneşev idi) vəzifələrində çalışan zaman bütün sovet məkanında türkoloqların hazırlanmasında böyük işlər görmüş, bilik və bacarığını əsirgəməmişdi. Məhz həmin dövrdə formalaşmış türkoloqlar hazırda postsovet məkanı müstəqil dövlətlərində səmərəli fəaliyyət göstərirlər.

Afad Qurbanovun rəhbərliyi altında dissertasiya yazmış və müdafiə etmiş dilçilər onun haqqında böyük iftixar və qürur hissi ilə danışır, onun yetişdirməsi olmaları ilə fəxr etdiklərini həmişə bildirirlər. Kadr yetişdirmək təkcə elmi rəhbərlik etmək demək deyildir. Onun yaratdığı «Azərbaycan onomalogiyası» elmi məktəbində hər il yetişən dilçi mütəxəssislər, haqlı olaraq, özlərini Afad Qurbanovun şagirdi, tələbəsi hesab edirlər.

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TECHNIQUE OF PROSTHETICS IN IMPLANTS AND THE MOST EFFECTIVE METHODS

Annotation: *Dental prosthesis devices replace or repair missing or damaged teeth. They can do much more than improve your smile. A missing tooth can affect your ability to chew and raise your risk of gum disease. A missing tooth can also affect the bone health of the jaw and put other teeth at risk.*

Key words*: prosthesis, tooth, dental crowns.*

There are several types of fixed dental appliances, such as crowns and implants, and removable devices, including full or partial dentures, which can be taken out as needed.

In this article, we review five types of dental prosthesis devices so that you can have an informed discussion with your dentist about which one might be best for you.

Dental crowns

A dental crown is a new covering for a damaged tooth.

A crown may be made of metal or porcelain. Crowns tend to be good long-term solutions for teeth that have been chipped, cracked, or worn down. But teeth that require a significant amount of restoration are at much higher risk for failure, according to a 2018 study in the Journal of DentistryTrusted Source.

Getting a crown often requires two appointments. In a typical process for a dental crown, a dentist will:

1. Get a soft mold of your teeth.
2. Fill any cavities in the damaged tooth (if necessary).
3. Trim the tooth to prepare it for receiving a crown.
4. Place a temporary crown on the tooth while a permanent crown is made in a lab.
5. After a few weeks, place a permanent crown that is cemented in place.

Dental practices that can make crowns on-site may offer same-day crowns.

Crowns are considered a relatively permanent solution. Once a crown is in place, it should last 5 to 15 years or even longer if maintained properly. You should brush and floss a tooth with a crown as you would any other tooth.

A crown can crack or chip over time, or the cement holding it in place can soften. This can allow bacteria to move in and infect the tooth.

Dental implant

One option to replace a missing tooth is a dental implant. This type of prosthesis is placed into the jawbone and held in place as new bone material forms around it.

Here's the typical procedure for a dental implant:

1. An implant (a screwlike device) is first inserted in the jawbone.
2. The dentist may add an abutment that holds the crown. If the bone around the implant needs to heal first, the abutment will be added a few months later.
3. A crown is cemented to the abutment to match surrounding teeth.

A 3-year studyTrusted Source in the Journal of Clinical Medicine published in 2019 suggests that implants are usually durable devices that can have a positive impact on quality of life.

But while implants are becoming more widely used, they can have some mechanical, technical, and biological complicationsTrusted Source such as:

- screw loosening
- cement failure
- fractured porcelain
- complications in the soft tissue or bone around the implant

The decision to choose implants or dentures may come down to cost and whether there is enough bone in which to place an implant.

Dental bridge

When one or more teeth are missing, a dental bridge is a compromise between dentures and implants.

As the name implies, a dental bridge is meant to bridge a gap left by missing teeth. A bridge is usually anchored to natural teeth at both ends of the gap and may be made of one or more false teeth called pontics. In some cases, a bridge may be attached to an implant for greater security and stability.

A bridge is often made of porcelain to look like natural teeth and must be brushed and flossed regularly. Special flossing aids called threaders may be necessary to get floss between the bridge and the gum line.

Here's the typical process for getting a bridge:

1. At the first appointment, the anchor teeth on either side of the bridge are filed into shape and a mold is made of your mouth. A temporary bridge may be made to fill in the gap while a permanent one is made within a couple of weeks.
2. At the second appointment, the permanent bridge is fitted into place. Any necessary minor adjustments are made so that the bridge looks natural and works with your natural bite. The bridge is then cemented into place.

A well-made bridge can last for decades, but 5 to 15 years is a reasonable expectation.

Dentures

Dentures are prosthetic devices that fit snugly against the gums and look and function as natural teeth. They're also referred to as false teeth.

The extent of tooth loss and your preference will help determine what kind of dentures are best for you. The most common types of dentures include:

- Complete dentures replace all of your teeth and must be removed daily for cleaning.
- Removable partial dentures replace some but not all of your teeth.
- Fixed partial dentures are also known as implant-supported bridges.
- Implant-retained dentures are affixed to implants but must be removed daily for cleaning (also called snap-in dentures).

Another type of denture is called a flipper. These are temporary partial dentures replacing one or two teeth. They are made of less durable materials than regular partial dentures since they are meant to be used for a short time.

Dental veneers

Veneers can help improve the color and appearance of natural teeth by covering them with a thin, natural-looking shell.

Here's the typical process for getting a veneer:

1. The dentist will grind enamel off your teeth and take a mold of your mouth.
2. Using the mold, laboratory technicians will make your veneers out of porcelain or a resin-composite material. The process may take a couple of weeks.
3. Veneers are then cemented to your teeth. An ultraviolet light is used to quickly harden cement that keeps veneers attached to your teeth.

You need to have relatively healthy teeth to support a veneer. Veneers can last 10 to 15 years before needing to be replaced.

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MODERN APPROACHES TO THE ETIOLOGY, PATHOGENESIS AND TREATMENT OF TUBERCULOSIS

Annotation: *This article provides information on the pathogenesis of tuberculosis etiology and its widespread use in modern methods of treating tuberculosis. tuberculosis is caused by bacteria of the mycobacterium tuberculosis complex.*

Key words: *Mycobacterium canetti, tuberculosis, immune systems,smoking, drinking, addiction,immunosuppressive.*

In humans, the main source of the disease is patients who suffer from pulmonary tuberculosis, and mycobacteria throw mixed sputum. Tuberculosis is spread by a lot of aerotomists from everyone: when coughing, sneezing, Mycobacterium sputum and mucus particles spread through the air and around objects. Tuberculosis Mycobacterium enters mainly through the respiratory tract. It is highly resistant to various external environmental influences compared to other microbes, maintaining its habitability and reproduction characteristics over a long period of time. When exposed to dry silt microbacterium at 36°, it does not lose its survival and breeding characteristics for up to 180 days, +70° heating for 7 hours, 150 days in wastewater, 10 days in street dust. Especially in zakh lands, where there is no sunlight, it persists for a long time. Long-term storage of tuberculosis mycobacteria in atromuhite creates the possibility of transmission of tuberculosis through potting, garb, bedspread and others. The open and hidden form of tuberculosis is distinguished. In the open form of tuberculosis, tuberculosis mycobacteria are found in the patient's sputum; if the patient does not follow the rules of hygiene, the patient may become an infected person with others. Mycobacteria in the latent form of tuberculosis are not found in sputum, such patients are not contagious to those around them. If a patient with tuberculosis adheres to all hygiene rules, in practice it will not be dangerous for those around him. Tuberculosis mycobacteria damage not only the lungs, but also other joints, bones, brain membranes, kidneys and other organs in the body other than the hair and nails. Tuberculosis is diagnosed by young children (because they will still have weak immune systems), adolescents during puberty (due to instability of nervendocrine management), as well as older people with impaired body resistance to infection. The symptoms characteristic of pulmonary tuberculosis depend on the form of the disease, age, etc.

Symptoms of the disease are not evident in primary tuberculosis. However, if the Mantu fracture, which is performed by sending tuberculin under the skin, comes out positive, and the patient develops common signs of the disease (discoloration, powerlessness, sleep and appetite disorders, rapid exhaustion, increased body temperature, sweating at night), it is fraught with busiline toxicity. In young children, the disease is more severe than in preschool and school-age children, with acute complications. Tuberculosis intoxication manifests itself in children; the child's color is broken, becomes capricious, has a loss of appetite and has a quick cold. Going to the doctor on time and properly caring for the child, he usually recovers completely.

Secondary tuberculosis is the more common form of pulmonary tuberculosis. It is caused by the "fear"of a sagging infection in the lungs and lymph nodes; under adverse conditions, the tuberculosis trigger is activated, forcing the process (active form). Tuberculosis can also recur when interacting with a patient with mycobacteria C for a long time. This is caused by the weakening of the body, poor-quality nutrition, stresses, harmful habits (smoking, drinking, addiction), chronic diseases, nospecific diseases of the lungs, diabetes mellitus, gastritis, gastric ulcers, SPID, as well as a decrease in the body's protective capacity after pregnancy and ingestion, among other reasons. Usually, secondary tuberculosis occurs at a young age and in middle age, when it is not treated in time, the disease develops astasekin, but without stopping. Small foci appear on the upper parts of the axari lungs (the fuzzy form of tuberculosis), sometimes purulent infiltrates (the inflamed form of tuberculosis) are observed.

The causative agents of tuberculosis are Mycobacteria, acid—resistant bacteria of the genus Mycobacterium. There are 74 known species of mycobacteria. They are widespread in soil, water, among humans and animals. However, tuberculosis in humans is caused by a conditionally isolated complex, including Mycobacterium tuberculosis (human species), Mycobacterium bovis (bovine species), Mycobacterium africanum, Mycobacterium bovis BCG (BCG strain of bovine species), Mycobacterium microti, Mycobacterium canettii. Recently, Mycobacterium pinnipedii, Mycobacterium caprae, phylogenetically related to Mycobacterium microti and Mycobacterium bovis have been assigned to it.

Tuberculosis caused by different types of mycobacteria varies quite a lot among themselves. The main specific feature of Mycobacterium tuberculosis (MBT) is pathogenicity, which manifests itself in virulence. Virulence can vary significantly depending on environmental factors and manifest itself in different ways depending on the state of the macroorganism that is subjected to bacterial aggression.

The pathogenesis consists of three main stages: infection, the development of a primary focus in any organ, and the progression of the disease with the manifestation of new symptoms.

The beginning of the process of interaction between micro- and macroorganism is provided by the penetration of mycobacteria into the primary focus.

The treatment of tuberculosis, especially its extrapulmonary forms, is a complex matter that requires a lot of time and patience, as well as an integrated approach.

In fact, from the very beginning of the use of antibiotic therapy, the phenomenon of drug resistance arose. The phenomenon is due to the fact that mycobacterium does not have plasmids, and the population resistance of microorganisms to antibacterial drugs has traditionally been described in a microbial cell by the presence of R-plasmids (from the English resistance — resistance). However, despite this fact, the appearance or disappearance of drug resistance in one strain of MBT was noted. As a result, it turned out that IS sequences are responsible for the activation or deactivation of genes responsible for resistance.

To date, the basis of tuberculosis treatment is multicomponent anti-tuberculosis chemotherapy (J04 Anti-tuberculosis drugs).

In addition to chemotherapy, great attention should be paid to intensive, high-quality and varied nutrition of tuberculosis patients, weight gain with reduced weight, correction of hypovitaminosis, anemia, leukopenia (stimulation of erythro- and leukopoiesis). Tuberculosis patients suffering from alcoholism or drug addiction should undergo detoxification before starting anti-tuberculosis chemotherapy.

Tuberculosis patients receiving immunosuppressive drugs for any indication tend to reduce their doses or completely cancel them, reducing the degree of immunosuppression, if the clinical situation for the disease that required immunosuppressive therapy allows it. Patients with HIV infection and tuberculosis are shown specific anti-HIV therapy in parallel with anti-tuberculosis, and the use of rifampicin is also contraindicated.

Glucocorticoids are used very sparingly in the treatment of tuberculosis due to their strong immunosuppressive effect. The main indications for the appointment of glucocorticoids are severe, acute inflammation, severe intoxication, etc. At the same time, glucocorticoids are prescribed for a fairly short period of time, in minimal doses and only against the background of powerful (5-component) chemotherapy.

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ETIOLOGY, PATOLOGY AND EPIDIMOLOGY OF ADENOIDITIS IN CHILDREN

Annotation: *Adenoiditis in children is a chronic inflammatory process that develops in the hypertrophied pharyngeal tonsil (adenoids). It is manifested by symptoms of adenoids: difficulty in nasal breathing, nasal voice, snoring during sleep. There are also signs of inflammation in the form of a runny nose and fever. Adenoiditis in children has a chronic course and further leads to a delay in physical and mental development. The disease is diagnosed clinically, confirmed by the results of rhinoscopy, rhinocytological examination and radiography. Treatment is aimed at eliminating the focus of infection and restoring nasal breathing.*

Key words: *rhinoscopy, rhinocytological examination, radiography.*

Adenoiditis in children is a common reason for contacting a pediatrician and a pediatric otorhinolaryngologist. The incidence is approximately 15: 1 000, taking into account the available adenoids without inflammation. It is more often detected in children from 2-3 to 7 years old, since it is at this age that the maximum physiological size of the pharyngeal tonsil is noted. Among schoolchildren, pathology is diagnosed several times less often. The relevance of the disease in pediatrics is extremely high. Currently, adenoiditis in children is more common in comparison with the incidence rate at the end of the XX century. This is due to an increase in the number of pathologies of pregnancy and childbirth, leading to a weakening of immunity in the population, as well as the spread of antibiotic-resistant forms of microorganisms.

The inflammatory process in the overgrown lymphoid tissue of the pharyngeal tonsil is most often caused by hemolytic streptococcus, respiratory viruses, less often by fungi and conditionally pathogenic flora, Mycobacterium tuberculosis, etc.The risk of adenoiditis in children increases if the child is often ill for a long time, and also has a burdened allergic history. Narrow nasal passages (for example, when the nasal septum is curved) help to reduce the natural sanitation of the nasal cavity and the long-term persistence of pathogenic microorganisms on the pharyngeal tonsil.

Since adenoiditis in children develops on the hypertrophied pharyngeal tonsil, it is worth mentioning separately the causes of the proliferation of lymphoid tissue. Many children to varying degrees have adenoids, represented by an enlarged pharyngeal tonsil. They usually appear at the age of 2-7 years and gradually decrease after puberty. This is due to the fact that it is the pharyngeal tonsil that plays the role of the first immune barrier for respiratory infections in

early childhood. Adenoiditis in children occurs when adenoids remain unnoticed for a long time, the child often gets sick as a result of immunodeficiency, or conservative therapy is ineffective.

Symptoms of adenoiditis in children

Manifestations of adenoiditis in children are always layered on the overall picture of adenoids. Signs of an enlarged palatine tonsil include difficulty breathing through the nose, which causes the baby to breathe through the mouth and snore in his sleep, as well as a closed nasal voice, in which the sounds "m" and "n" actually disappear from speech. In addition, the child has a characteristic appearance: the mouth is open, the face is hypomimic, the nasolabial folds are smoothed. With a prolonged course, adenoids and adenoiditis in children lead to a delay in physical development, a decrease in memory and attention.

The child quickly gets tired and irritated due to chronic hypoxia and lack of a healthy night's sleep. In addition to the above symptoms, adenoiditis in children is accompanied by an increase in temperature (more often to subfebrile values), even more pronounced difficulty in nasal breathing up to its complete absence, as well as a runny nose. Nasal secretions are difficult to remove, but even after that, breathing through the nose is relieved only for a short time.

Complications

The disease is chronic and often leads to complications from the cardiovascular system. This is due to the fact that the most common pathogen is Group A hemolytic streptococcus, which has a similar structure to heart cells, so endocarditis and myocarditis develop by an autoimmune mechanism. Adenoiditis in children is often accompanied by otitis media and conjunctivitis. The child often suffers from viral infections. This is due to a decrease in immunity, and the constant secretion of infected mucus in children with adenoiditis.

Mucus flows down the back wall of the pharynx, the inflammatory process spreads to the lower respiratory tract. Chronic hypoxia and constant stress on the immune system lead to delayed physical and mental development. Oxygen deficiency is manifested not only by general hypoxemia, but also by underdevelopment of the facial skull, in particular, the upper jaw, as a result of which the child develops an incorrect bite. Possible deformity of the palate ("Gothic" sky) and the development of a "chicken" chest. Adenoiditis in children also leads to chronic anemia.

Diagnostics

A pediatrician may suspect adenoids and adenoiditis in children during a physical examination. The child develops the "adenoid" type of face mentioned above. Difficulty in nasal breathing, nasal twang, and frequent viral infections are indications for rhinoscopy for a child.

- Anterior rhinoscopy is performed when the tip of the nose is pulled up. So you can assess the condition of the mucosa, patency of the nasal passages

and notice the adenoids themselves with significant hypertrophy of the pharyngeal tonsil.

- Posterior rhinoscopy is technically more complex, especially given the patient's age, but it allows you to examine the back wall of the pharynx, determine the presence of adenoids and adenoiditis in children.

It is possible to conduct a finger study. The procedure is simple and takes only a few seconds. The method is very informative, but extremely unpleasant for the child, so the study is usually performed at the end of the examination. Endonasal diagnosis of adenoiditis in children is also used. It allows you to visualize adenoids, assess their condition and the degree of enlargement, but it requires special training (anesthesia, mucosal anemia). The presence of anatomical deformities of the nasal cavity is a contraindication to this study, so it is necessary to first exclude possible curvatures, as well as nasal polyps and other formations, otherwise there is a high risk of bleeding.

Rhinocytological examination (nasal smear followed by microscopy) gives an idea of the cellular composition of mucus. Thus, a high content of eosinophils indicates the allergic nature of adenoids and adenoiditis in children. To confirm the allergic nature of the disease, skin tests are performed, especially if the parents have allergies and the child has a history of allergodermatosis. Consultation with an otorhinolaryngologist is mandatory. Otoscopy allows you to assess the condition of the eardrum and the involvement of the auditory tube and ear cavity in the inflammatory process. The examination also evaluates the child's hearing.

Diagnosis of adenoiditis in children includes X-ray of the skull in a direct and lateral projection to exclude sinusitis and tumors of the nasal and pharyngeal cavity. CT and MRI are necessary if an anterior cerebral hernia is suspected, which leads to a violation of nasal breathing, but with this pathology, deformities of the facial skull with a wider eye position and other signs are more often noted. Choan atresia is manifested by the complete inability of nasal breathing from one or both sides, but this malformation is more often diagnosed immediately after birth. If hoan atresia is suspected, a test is performed with instillation of colored drops in the nose.

Treatment of adenoiditis in children

Conservative therapy

Treatment of the disease includes rehabilitation of the focus of inflammation and ensuring full nasal breathing. Washing with antiseptic solutions, as well as isotonic salt solutions, is prescribed. Aerosol antibiotics and steroid preparations, drops with antiseptic and vasoconstrictor effects are used (adrenomimetics are used only in short courses). Also, in the treatment of adenoiditis in children, inhalations with antiseptics and mucolytics are effective. Any antibiotics are used only after confirming the nature of the disease, that is, isolating the pathogen and determining its sensitivity to drugs. Interferon inducers are indicated for immune stimulation.

Surgical treatment

Operations for adenoids and adenoiditis in children are performed when conservative methods are ineffective, as well as when nasal breathing is difficult. An important condition for surgical intervention is the absence of exacerbation of the inflammatory process. The duration of remission should be at least one month.

Usually, an adenotomy is performed using an adenotome, the lymphoid tissue is cut off with a special knife under local anesthesia or general anesthesia, depending on the patient's age, the degree of adenoids, the presence of hearing disorders, etc. Endonasal removal of adenoids is also possible, but when using this technique, areas of lymphoid tissue often remain, so a second operation may be necessary. Hospitalization for an adenotomy is not required.

Prognosis and prevention

The prognosis of the disease is favorable with timely diagnosis and therapy. With repeated growth of adenoids, a relapse of adenoiditis in children is possible, this happens rarely and is an indication for repeated adenotomy. A separate block of adaptation of the child is represented by the restoration of nasal breathing, as patients get used to breathing through the mouth. The child is engaged in special exercises together with his parents, if necessary - with a speech therapist. Prevention of adenoiditis in children is timely removal of adenoids or successful conservative therapy. A mandatory point is to maintain the child's immunity, which requires a full-fledged diet, staying in the fresh air and other hardening procedures.

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AGGRESSIVE BEHAVIOR OF CHILDREN

Annotation: *Aggressive behavior of children is verbal and physical activity aimed at causing harm to their own health, people, animals, and external objects. It is based on negative emotions, the desire to harm. It is manifested by disobedience, irritability, cruelty, insults, slander, threats, refusal to communicate, acts of violence (bites, blows). It is diagnosed by a psychiatrist or psychologist. The research is conducted by the method of conversation, observation, questionnaires, questionnaires, and projective tests are used. Treatment includes group, individual psychotherapy-training in ways to control emotions, safe expression of anger.*

Key words: *children,pathology, anger.*

Aggressive behavior is detected in children of all ages. Primarily serves as a way of expressing negative emotions – irritation, anger, anger. Observing the result of such behavior, the child evaluates its usefulness. For the second time, he demonstrates aggression with a specific goal – to get toys, food, attract the attention of parents, prove strength, significance, and subdue others. The more often the desired result is achieved, the more aggressiveness is fixed in behavior, becoming a quality of character. The prevalence of this phenomenon is difficult to determine, since every child shows aggression throughout his life. In boys, it occurs earlier and is open in nature. In girls, it manifests itself indirectly.

The reasons for aggression are diverse – accumulated emotional tension, inability to express offense in words, lack of adult attention, desire to get someone else's toy, show strength to peers. Often, children cause harm to others or themselves because they feel helpless, sad, or offended, but they can't understand their own state, and they don't have the communication skills to solve the problem. There are the following groups of reasons for aggressiveness::

- Family relations. The formation of aggression contributes to the demonstration of cruelty, violence, disrespect, frequent conflicts in the family, and the indifference of parents. The child copies the behavior of the mother, the father-argues, provokes fights, openly shows anger, disobedience in order to attract attention.
- Personal characteristics. The instability of the emotional state is manifested by bitterness, irritation. Aggression expresses fear, fatigue, poor health, compensates for feelings of guilt, low self-esteem.
- Features of the nervous system. Children with an unbalanced weak type of the central nervous system are prone to aggression. They are less tolerant of stress, less resistant to the effects of physical and psychological discomfort.

- Socio-biological factors. The severity of aggressiveness is determined by the child's gender, role expectations, and social status. Boys are often inspired with the idea that a man should be able to fight, "fight back".
- Situational factors. Emotional lability of childhood is manifested by outbursts of irritation, anger when accidentally exposed to external adverse events. A child can be provoked by poor school grades, the need to complete homework, physical discomfort caused by hunger, or a tedious trip.

Pathogenesis

The physiological basis of aggression in children is an imbalance in the processes of excitation and inhibition of the central nervous system, functional immaturity of individual brain structures responsible for controlling emotions and behavior. When exposed to a stimulus, arousal prevails, and the inhibition process is "delayed". The psychological basis of children's aggressiveness is low ability to self-regulate, lack of developed communication skills, dependence on adults, unstable self-esteem. Children's aggression is a way to relieve tension during emotional, mental stress, and poor health. Purposeful aggressive behavior is focused on getting what you want, protecting your own interests.

Classification

Many classifications of aggressive behavior have been developed. According to the direction of actions, there is a distinction between heteroaggression – causing damage to others, and autoaggression – harming yourself. According to the etiological feature, reactive aggression is distinguished, which occurs as a reaction to external factors, and spontaneous, motivated by internal impulses. Classification according to the form of manifestation is of practical importance:

- Expressive aggression. Demonstration methods – intonation, facial expressions, gestures, poses. A diagnostically difficult option. Aggressive acts are not recognized or denied by the child.
- Verbal aggression. It is implemented through words – insults, threats, swearing. The most common option among schoolgirls.
- Physical aggression. Damage is inflicted by physical force. This form is common among young children, schoolchildren (boys).

Symptoms

Basic manifestations of aggression are observed in infants under one year of age. In children aged 1-3, conflicts arise due to the appropriation of toys and other personal items. Children bite, push, fight, throw objects, spit, and shout. Attempts by parents to stop the child's reactions with punishments aggravate the situation. In preschool children, the physical expression of aggression is observed less frequently, since speech is actively developing, its communicative function is being mastered.

There is a growing need for communication, but productive interaction is hindered by egocentricity, inability to accept someone else's point of view, and objectively assess the situation of interaction. There are misunderstandings,

insults that give rise to verbal aggression – swearing, insults, threats. Younger students have a basic level of self-control and are able to suppress aggression as a way of expressing resentment, displeasure, and fear.

At the same time, they actively use it to protect their interests and defend their point of view. Gender characteristics of aggressiveness are beginning to be determined. Boys act openly, use physical force-fight, trip, "click" on the forehead. Girls choose indirect and verbal methods – ridicule, assigning nicknames, gossip, ignoring, silence. Both sexes show signs of low self-esteem and depression.

In adolescence, aggressiveness occurs as a result of hormonal adjustment and the accompanying emotional lability, complication of social contacts. There is a need to prove your significance, strength, and relevance. Aggression is either suppressed, replaced by productive activities, or takes extreme forms – boys and girls fight, injure opponents, and attempt suicide.

Complications

Frequent aggressiveness, supported by upbringing, a dysfunctional family environment, is fixed in the qualities of the child's personality. By adolescence, character traits are formed based on anger, bitterness, and resentment. Accentuations develop, psychopathies – personality disorders with a predominance of aggression. The risk of social maladjustment, deviant behavior, and delinquency increases. With autoaggression, children harm themselves and attempt suicide.

Diagnostics

Diagnosis of aggressive behavior of children is relevant if the frequency and severity of manifestations are excessive. The decision to contact a psychiatrist or psychologist is formed by parents independently or after the recommendation of teachers. The basis of the diagnostic process is a clinical conversation. The doctor listens to complaints, finds out the medical history, and additionally studies characteristics from kindergarten and school. Objective research involves the use of special psychodiagnostic methods:

- Questionnaires, monitoring. Parents and teachers are invited to answer a number of questions/statements about the child's behavior. Monitoring is carried out according to a scheme that includes a number of criteria. The results allow us to determine the form of aggression, its severity, and causes.
- Personal questionnaires. They are used for examination of adolescents. Identify the presence of aggressiveness in the general structure of the individual, ways to compensate for it. Common methods are the Leonhard-Shmishek questionnaire, the pathocaracterological diagnostic questionnaire (Lich).
- Drawing tests. According to the features of the drawings, the severity of symptoms, causes, and unconscious emotions are determined. The Nonexistent Animal, Cactus, or Human tests are used.

- Interpretation tests. They belong to the projective methods, reveal the unconscious, hidden experiences of the child. The examination is performed using the Rosenzweig Test of Frustration reactions, the Hand test.

Treatment of aggressive behavior in children

With severe aggression, correction by psychotherapy methods is required. The use of medications is justified when anger, impulsivity, and bitterness are symptoms of a mental disorder (psychopathy, acute psychosis). It is impossible to cure aggressiveness forever, it will occur in a child in certain life situations. The task of psychologists and psychotherapists is to help solve personal problems, teach adequate ways to express feelings and resolve conflict situations. Common correction methods include:

- Game exercises. They are presented by express methods of safe expression of aggression. The child is invited to throw out anger, irritation, anger without harm to others. Games with a ball, loose materials, water, and "anger sheets"are used.
- Communication trainings. Group work allows the child to develop effective communication strategies, ways of expressing emotions, defending their position without prejudice to others. Children receive feedback (participants ' reactions), analyze successes and mistakes with a psychotherapist.
- Relaxation classes. They are aimed at reducing anxiety and emotional tension-factors that increase the risk of aggressive outbursts. Children are trained to restore deep breathing, achieve muscle relaxation, and switch their attention.

Prognosis and prevention

Aggressive behavior of children is successfully corrected with the joint efforts of parents, teachers, and psychologists. The prognosis is generally favorable. To prevent the perpetuation of aggression as the preferred mode of interaction, it is necessary to adhere to a harmonious parenting style, demonstrate ways to resolve conflicts in a peaceful way, treat the child with respect, and allow anger manifestations in a safe form. Do not focus on minor aggressive actions.

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PECULIARITIES OF AUTONOMIC HOMEOSTASIS IN PNEUMONIA IN CHILDREN

Abstract. *A total of 200 children aged 3 to 14 years with chronic pneumonia (CP) in the acute stage were examined. The control group consisted of 30 healthy children of the same age. Clinical experience has shown that a significant proportion of patients with CP have disorders of the autonomic nervous system, which aggravates the course of this disease. The author found that children with CP have characteristic changes in autonomic regulation, manifested by the predominance of hypersympathicotonic initial vegetative tone with hypersympathicotonic vegetative reactivity, which generally indicates a state of overstrain of the body's adaptive capabilities.*

Keywords: *pneumonia, method, diagnosis, treatment.*

INTRODUCTION

Chronic inflammatory bronchopulmonary diseases (CIBD), including chronic pneumonia (CP), have been studied for many decades and still remain a pressing scientific and practical problem in pediatrics. Despite significant advances in the diagnosis and treatment of CIBD in children, many issues related to this pathology remain controversial. The progressive course of CIBD among children and, in most cases, the lack of effect when using traditional treatment methods have led to the search for improved and effective methods, as well as the study of concomitant diseases affecting the child's body. This determines the need to continue in-depth studies on various aspects of CIBD in children [2, 4].

MATERIALS AND METHODS

Depending on the type of therapy, the patients were divided into two groups: the control group — 60 children who received conventional basic therapy; the main group — 50 children who, along with the basic therapy, received the multivitamin complex neuromultivit, 1 tablet 1-2 times a day. The total course of treatment is 3 weeks. After that, for maintenance therapy, it is enough to take 1 tablet 1 time per day, as well as valerian extract 1 drop per year of life 3 times a day for 1-3 months. The diagnosis was based on anamnesis data and was formulated in accordance with the classification of clinical forms of bronchopulmonary diseases in children, adopted in Moscow at the Symposium on Improving the Classification of Nonspecific Lung Diseases in Children.

RESULTS AND DISCUSSION

Based on the concept of the leading role of the functional state of the higher parts of the ANS in the implementation of the phase structure and outcomes of pathological conditions in the child's body, this paper analyzes the state of

vegetative tone and autonomic reactivity in preschool and school-age children with CP. The experience of our clinic has shown that a significant proportion of patients with chronic pneumonia have disorders of the autonomic nervous system, which aggravates the course of this disease. In the course of the research, the absolute and relative values of the leading indicators of the CIG were analyzed, giving a qualitative and quantitative characteristic of the state of adaptation mechanisms, which were carried out in the dynamics of the disease. These indicators reflect the IVT and VR of the body based on the activity of the sympathetic and parasympathetic parts of the CNS and humoral mechanisms of homeostasis regulation, as well as the degree of tension of adaptation processes [1].

In 16.7% of patients, eutonia (preservation of adaptive capacity) was determined, in 8.0% - sympathicotonia (strain of adaptive capacity), in 6.0% - vagotonia, reflecting the breakdown of adaptive capacity. When assessing the compensatory capacity of the body, hypersympathicotonic VR (strain of compensatory capacity) was detected in 68.0% of patients with CP, asympathicotonic (breakdown of compensatory mechanisms) in 22.7% and normotonic VR, reflecting the preservation of the compensatory capacity of the body, in only 9.3%. The predominance of initial hypersympathicotonia indicated the presence of activation of sympathoadrenal compensatory mechanisms in children. The remission stage in children with CP is characterized by relative normalization of the CIG indicators. However, according to the IVT and VR data, a more pronounced tendency towards hyper-sympathicotonia still persists, indicating the preservation of tension of adaptive mechanisms during this period of the disease.

The period of exacerbation of CP in preschool and school-age children significantly affected the initial values of the KIG indicators, although it did not give reliable differences in all parameters.

The Mo indicators in the supine position and in orthostasis were statistically significantly different in relation to the normative data ($P < 0.01$).

In the analyzed group, high SI values ($P < 0.01$) are observed, which indicates a sufficiently high level of functioning of the central heart rhythm regulation circuit.

The increase in the intensity of adaptive mechanisms was ensured primarily by reducing the significance of parasympathetic mechanisms, as well as humoral factors, as clearly demonstrated by the decrease in the values of □X ($P < 0.01$) and Mo ($P < 0.0101$) relative to the standard values.

At the same time, during the remission period, there is no activation of sympathoadrenal mechanisms, as evidenced by the absence of a reliable difference in the AMo indicator relative to the standard values ($P > 0.05$). This phenomenon reflects a specific reaction of the ANS, characteristic of children with CP, and creates a reduced reserve of mediators of the sympathoadrenal link of vegetative support in the child's body. The remission stage in children with CP

is characterized by relative normalization of quantitative indices of the CIG. However, according to the VR data, a more pronounced tendency towards hypersympathicotonia still persists, indicating the preservation of the tension of adaptive mechanisms in the remission stage of the disease. Thus, in patients with chronic pneumonia, vegetative dysfunctions play a significant role, characterized by the predominance of hypersympathicotonic IVT with hypersympathicotonic VR - a state of overstrain of the adaptive capabilities of the body. The identified violations of the regulatory mechanisms of the ANS necessitate the inclusion of vegetative-tropic therapy in the complex treatment of children with CP.

CONCLUSION

1. Patients with chronic pneumonia have characteristic changes in vegetative regulation, manifested by the predominance of hypersympathicotonic initial vegetative tone with hypersympathicotonic vegetative reactivity, which generally indicates a state of overstrain of the body's adaptive capabilities. High tension and failure of adaptation increase the risk of an unfavorable outcome of the disease. 2. Combination therapy of children with chronic pneumonia by including vegetative drugs and a multivitamin complex in the complex treatment, taking into account the characteristics of their vegetative reactivity, leads to a decrease in relapses of the disease.

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CHARACTERISTICS OF LEXICAL AND SYNTACTIC COMPOSITION OF MEDICAL DISCOURSE

Abstract*: The article describes the grammatical features of popular medical scientific texts and the quantitative superiority of the noun over the verb, as well as the syntactic structure of the medical lexicon.*

Key words*: medical discourse, medical scientific-popular text, emotional coloring, paraphrase*

The lexical composition of scientific medical texts is characterized by features such as the use of the word in its own or terminological sense, the predominance of words in the book style, and the fact that words in other styles are not used in practice.

The grammatical features of popular medical scientific texts are that the noun is quantitatively superior to the verb. Passive constructions and impersonal forms of the verb are widely used, which allows the author to give a more complete description of the process and choose an objective method of presenting the material. Present Simple, Past Simple and Present Perfect tenses are preferred. The tenses of the Simple group (we analyzed, we identified, we advise, etc.) are very useful in conveying information to the recipient, the main purpose of the text. At the same time, the Present Perfect tense, which expresses the achieved result, is also common.

Another grammatical feature of such texts is related to terms: for non-linguistic reasons, some terms denoting abstract concepts are used in both numbers (singular and plural), while their lexical meaning does not change.

Popular scientific texts in English have the characteristics of expressiveness, simplicity of expression and reliability, as they are intended for a wide readership. The following features of popular scientific texts can be distinguished:

1) scientific information is given in detail;
2) a large number of terms are used;
3) accurate calculation, consists of a large number of scientific facts.

The syntactic structure of the sentences is much simpler and descriptive in comparison to the medical scientific text. It is distinguished from lexical means by the fact that phraseological units can also be used. For example: try to fit some regular exercise into your daily routine, to match one's abilities.

As Ye.N.Sherbakova rightly noted, the style of a medical scientific-popular text can have an emotional coloring, it is in the form of a unique dialogue between a specialist and a patient. For example:

1. Just be cautious, warns Dr. Jackson. "They can be drying and make you more sun-sensitive." Start slowly and use a pea-sized amount, she suggests.

2. To protect your eyes from the sun: Wear a hat with a wide brim. Buy sunglasses that block 99 percent of UVA and UVB.

3. Guidelines and Supporting Key Recommendations of the 2015-2020 Dietary: Limit calories from added sugars and saturated fats and reduce sodium intake.

4. Key Recommendations: A variety of vegetables from all of the subgroups Grains, at least half of which are whole grains Fat-free or low-fat dairy, including milk, yogurt, cheese, and fortified soy beverages[1].

In popular medical scientific texts, the following emotional coloring or phrases are found: "one's best bet for a long life", "grandma's favorite cure-all" (periphrasis, chicken soup), "a lousy situation", "brain-robbing" disease" (paraphrase, Alzheimer's disease). Emotional states such as pleasure/dissatisfaction, pride, surprise, hesitation, interest are expressed. For example:

1. It is disappointing, but not entirely surprising, to record that in this study only 50% of abortions...

2. Unfortunately, the activity of a single agent is limited, with only a few drugs showing a response rate > 10%.

3. The HDL undoubtedly went up but,…

4. ... even more striking were the observations in 1995 by Dr. Lawrence Mass. It is gratifying to note…

5. This observation is of particular interest as the enzyme contributes not only to PGD2 production but also to the formation of the downstream cyclopentenone prostaglandin.

6. Viscum Frahini-2 in our study showed encouraging results and…[1]

The style of medical scientific discourse is explained by the fact that it is devoid of accuracy and emotional coloring. In scientific discourse, it is characterized by the use of connected and followed conjunctions, passive voice, adverbial and adjectival device, determining compounds: To evaluate trends in chronic kidney disease related to diabetes or to glomerulonephritis, we used two resources – one that tracks hospitalized persons and another that tracks the general population in China.

The lexicon of medical discourse, in general, has a branching system of terms. This system covers general lexicon and special lexicon (terms):

- units identifying the patient's identity, place of residence and contact information: name, patient ID, birth date, gender, status, race, contact by, address, home phone, office phone, email;

- medical terminology: insomnia, allergy, depression, anxiety, mental disturbance, anemia, bleeding disorders, diabetes, blood pressure, pulse rate, temperature, flu vaccine;

- attributive construction: history of present illness, pulse rhythm, pulse rate, resp rate, eye exam, foot exam, problem list;

- abbreviations in large size: ECG, CXR, LDL, HDL, TD booster, BP systolic, BP diastolic, LDH, ALK PHOS, HT, WT;

- numerical combinations: height - 64, weight - 140, pulse rate - 72, calcium - 9.6 mg/dl, sodium - 135 mmol/l [2].

Syntactic features:

-imperative sentences (instructions for use): "Mix to make powder, divide into thirty equal doses. Directions for use: one sachet to be taken at bedtime. For pain, one pill four times a day by mouth";

- compound sentences, countable parts: Eyes: conjunctiva and lids normal, PERRLA, EOMI, fundi WNL; Ears, Nose, Mouth, Throat: TM clear, nares clear, oral exam WNL; Skin: clear, good turgor, color WNL, no rashes, lesions, or ulcerations; Gastrointestinal: denies abdominal pain, dysphagia, nausea, vomiting, diarrhea, constipation[2].

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CLINICAL AND FUNCTIONAL EVALUATION OF BRIDGE PROSTHETICS USING INTRA-OSSEOUS IMPLANTS

Abstract. *The aim of the article is a clinical evaluation of the use of bioplant in the complex treatment of chronic generalized periodontitis of mild degree with closed curettage of periodontal pockets.*

Keywords: *generalized periodontitis, bioplant, osteoregeneration, collagen.*

INTRODUCTION

An analysis of literature data showed that almost 26% of patients with partial absence of teeth who require orthopedic treatment, for various reasons, refuse the production of removable dentures [1]. Dental implantation in combination with improved methods of manufacturing fixed dentures is widely used today for the rehabilitation of such patients [2]. One of the main problems of dental implantology is the prevention of inflammatory complications, the frequency of which in the postoperative period can reach 50% [3].

MATERIALS AND METHODS

The study included 40 patients with terminal defects of dental arches after bridge prosthetics using intraosseous implants. Electromyographic studies were performed by us in the area of the proper masticatory and temporal muscles using the Neurotech device (Russia) at rest and under maximum compression. All patients were divided into 3 groups. Group 1 consisted of 12 patients with unilateral and bilateral terminal defects of dental arches, group 2 included 14 patients after intraosseous implantation surgery, group 3 included 14 patients who received bridge prostheses with distal support on dental implants.

RESULTS AND DISCUSSION

When comparing the functional activity of the temporal and masticatory muscles before orthopedic treatment in patients of the 1st group, the following pattern was revealed. On the intact side, the bioelectrical activity (BEA) of the masticatory muscles was 1.5 times higher, and that of the temporal muscles was 2.3 times higher than on the side of the defect.

Electrophysiological indices of muscle activity in patients with bilateral terminal defects varied within a fairly wide range and depended on the type of chewing. It should be noted that 80% of patients in this group showed predominantly unilateral, namely right-sided, chewing, and 20% of patients had uniform bilateral chewing.

With a unilateral type of chewing, the average BEA values on the working side were 1.8 times higher for the masticatory muscles and 2.1 times higher for the temporal muscles. In patients with a uniform type of chewing, the BEA was approximately the same on the right and left. During electromyographic studies in patients of the 2nd group, the following dynamics of bioelectrical activity of the masticatory muscles were revealed. When clenching the jaws, the maximum amplitude of the BEA was 440±120 μV in m. masseter on the healthy side; 180±70 μV in m. masseter on the edentulous side; 392±110 μV in m. temporalis; 728±191 μV in m. temporalis on the healthy side. The coordination coefficient for the masticatory muscles during chewing averaged 2.4±0.13, for the temporal muscles – 0.5±0.13; at rest, for the masticatory muscles – 0.4±0.13, for the temporal muscles – 2.1±0.13, which indicated a lack of coordination in the work of the masticatory muscles. Three months after the implantation with early functional loading of the implant, some decrease in the BEA of the muscles at rest was observed. On average, for the masticatory muscles proper, the difference was 20% (m. masseter on the healthy side 280±81 μV, m. masseter on the edentulous side − in the area of the inserted implant − 190±5.0 μV). In the temporal muscles, the BEA at rest decreased by an average of 25% and was: m. temp. on the edentulous side 450±11 μV; m. temp. on the healthy side – 210±4 μV. When clenching the jaws, the BEA of m. masseter h. – 460±98, on the edentulous side – 397±143 μV; m. temp. h. – 650±200 μV; m. temp. hell. – 610±200 μV.

The coordination coefficient for the masticatory muscles proper during compression was 1.2±0.08; for the temporal muscles 1.07±0.06. The coordination coefficient for m. masseter at rest was 0.72±0.05; for m. temporalis – 0.5±0.03. This occurred due to changes in the BEA of the masticatory and temporal muscles proper, which indicates the alignment of the coordination relationships of the masticatory muscles. After 12 months, the patients of the 3rd group after early functional loads maintained the dynamics towards normalization of the coordination work of the masticatory muscles. According to EMG data, an increase in the activity of the masticatory muscles is noted during early functional loads. Electromyographic examination of patients in the 2nd group demonstrated the same picture, but this occurred more slowly than in patients in the 3rd group - by the 12th month, which indicated the process of adaptation of the masticatory muscles to orthopedic structures and the coordination restructuring of the BEA.

The results of the electromyographic study showed that initially, most patients had weak bioelectrical activity of the masticatory muscles at rest. After early functional loads, the coordinated work of the muscles was restored, and their functional activity increased.

Analysis of electromyographic indices in patients of the 3rd group revealed visible changes in the functional state of the studied masticatory muscles depending on the period of implantation and subsequent prosthetics.

CONCLUSION

Thus, the results of electromyographic studies confirmed the restoration of the functional state of the masticatory muscles during orthopedic treatment of patients with various defects of the dentition using dental implants. The data we obtained are objective evidence of the restructuring of the reflex mechanisms of the muscular apparatus at different observation periods.

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METHODS OF STUDYING THE ETIOLOGY AND PATHOGENESIS OF AFLATOXICOSIS, WHICH ARE NOW COMMON, AND EASY EXPLANATION OF THE TOPIC TO STUDENTS

Annotation: *Aflatoxicosis is a mycotoxicosis caused by secondary metabolites of aflatoxigenic fungi. Aflatoxins (AFTS) were first isolated in 1961 from peanut flour contaminated with the mold fungus Aspergillus flavus. Subsequently, the symptom complex associated with the use of contaminated products was called aspergilloflavotoxicosis, or aflatoxicosis. The last major outbreak of aflatoxicosis with fatal outcomes was registered in Tanzania in 2016.*

Key words: *cereals, hepatoprotectors, antimycotics, legumes.*

Sources of aflatoxins are Aspergillus molds: A. Flavus, A. Parasiticus and some others. These fungi usually affect products of plant origin:

- cereals (corn, rice, wheat, sorghum);
- legumes (cocoa, soy, chickpeas);
- nuts (peanuts, almonds, hazelnuts, walnuts),
- spices (nutmeg, pepper);
- dried fruits (dried apricots, raisins, figs);
- products of processing of these crops (flour, butter, paste).

Aspergillus Flavus produces aflatoxins B1 and B2, A. parasiticus-B1, B2, G1, G2. In addition, both types of fungus can synthesize aflatoxins M1 and M2. The latter are also formed as a result of hydroxylation of mycotoxins B1 and B2 in the tissues of farm animals that have consumed fungal-contaminated feed, so they are often found in milk, dairy products, eggs, and meat.

The permissible concentration of aflatoxin B1 in plant products is 5 mcg/kg, aflatoxin M1 in animal products is 0.5 mcg/kg. Acute aflatoxicosis develops with daily intake of mycotoxin B1 in the amount of 20-120 mcg/kg of body weight per day for 1-3 weeks. AFTS are thermally stable, i.e. they are practically not destroyed during heat and culinary processing.

Infection routes

Aflatoxicosis is considered mainly as an alimentary disease, since the main route of aflatoxins entering the body is food (with food, mother's milk). Transplacental transfer of mycotoxins from mother to fetus is possible. Employees of grain storage facilities, feed mills, flour mills, and farms may be exposed to aflatoxin inhalation or transdermal penetration. Cases of

contamination with heroin aflatoxins have been reported, so in some cases, infection occurs with intravenous drug use.

Risk factors

Conditions that contribute to a higher incidence of aflatoxigenic fungi infestation in food crops are:

- subtropical and tropical climate (high temperature and humidity);
- adverse weather conditions for plant growth;
- plant damage caused by pests;
- violation of harvesting technology, grain transportation and storage conditions (lack of light and ventilation);
- lack of sanitary and epidemiological control over food storage.

Pathogenesis

Aflatoxins are absorbed in the small intestine, enter the liver with the bloodstream, where they undergo hydroxylation with the formation of metabolites (AFQ1, AFM1, aflatoxicol, 8,9-epoxy-AFB1, etc.). Aflatoxins form compounds with liver proteins (albumin, thrombin), block the synthesis of many enzymes, polypeptides and nucleic acids. Their excretion occurs with bile, feces, and urine. Aflatoxin B1 is the strongest hepatotropic poison and one of the most dangerous carcinogens for humans. Its secondary metabolites bind to the nitrogenous bases of DNA (in particular, guanine), activating mutations of the tumor suppressor gene TP53 in codon 249.

Under the action of AFT in the liver, hepatocyte dystrophy, the formation of foci of fat and coagulation necrosis, cholangiolar proliferation, and intrahepatic cholestasis occur. Necrotic changes are also found in the heart muscle, spleen, and kidneys. With aflatoxicosis, vitamin D metabolism is disrupted, prothrombin formation occurs, cellular and humoral immunity is suppressed, and oncogenes are activated. Aflatoxins also have mutagenic, embryotoxic and teratogenic effects.

Symptoms of aflatoxicosis

Acute poisoning

Signs of acute aflatoxicosis manifest within half an hour after ingestion of contaminated food. There is general weakness, lethargy, dizziness, short-term fever. There is abdominal pain, vomiting, upset stools. Worries about heaviness and pain in the liver, the skin and sclera become jaundiced. Symptoms of neurointoxication include ataxia, seizures, and paresis.

Subcutaneous hemorrhages and spontaneous bleeding occur, with acute aflatoxicosis, hepatosplenomegaly, edema, ascites quickly progress. If emergency care is not provided, patients fall into a coma, death occurs within a few days from acute liver or kidney failure, brain edema.

Chronic aflatoxicosis

The long-term cumulative effect of subtoxic doses of aflatoxins leads to chronic liver damage with the development of cirrhosis, portal hypertension, and hepatocellular carcinoma. Against the background of dyspepsia, children

have protein and energy insufficiency, delayed physical development and growth, and adults have progressive weight loss.

Complications

Aflatoxicosis is associated with the development of several types of cancer, in particular, cholangiocarcinoma, primary cancer of the liver, lungs, and intestines. The risk of developing hepatocellular carcinoma is 25-30 times higher when aflatoxicosis is combined with viral hepatitis B or C. It is believed that aflatoxins are involved in the pathogenesis of kwashiorkor and Reye's syndrome in children.

The course of aflatoxicosis can be aggravated by the presence of other mycotoxins (for example, fumonisins) in one product, with the simultaneous development of combined mycotoxicoses. Mortality from aflatoxicosis is high, especially in the pediatric population.

Diagnostics

Diagnosis of aflatoxicosis is based on the establishment of a link between poisoning and the use of products contaminated with mycotoxin. This requires a detailed nutritional history and a thorough study of clinical and laboratory data. It is necessary to remove food products that are suspected of causing poisoning, their special study (organoleptic, mycological, luminescent, chromatographic analysis, bioassays)in a sanitary laboratory. Examination of the victim includes:

- **Detection of aflatoxins in the body.** The concentration of AFT metabolites is determined in urine, blood plasma, and breast milk. For microbiological isolation of the producing fungus, food residues, feces, and vomit are used.
- **Blood tests.** UAC, liver enzymes, coagulogram, vitamin D levels, and electrolytes are examined. Aflatoxicosis is characterized by an increase in the level of transaminases, bilirubin, and an increase in prothrombin time.
- **Other studies.** To assess the degree of damage to internal organs, ultrasound of the liver, spleen, kidneys, and ECG registration are performed. If necessary, perform a liver biopsy with the morphology of the biopsy.

Differential diagnosis

As part of differential diagnosis, other mycotoxicoses (fusariotoxicoses), as well as food toxicoses of other etiologies, are excluded.:

- salmonellosis;
- staphylococcal food poisoning;
- botulism;
- viral gastroenteritis;
- poisoning with organochlorine, organophosphate compounds, pesticides, etc.

Treatment of aflatoxicosis

Like any acute food poisoning, aspergilloflavotoxicosis requires urgent care. There are no specific antidotes. At the first stage, to remove the maximum

amount of mycotoxins, gastric lavage is performed, a siphon enema is set up, saline laxatives are introduced through a probe, and activated carbon suspensions are added. To detoxify the body, enterosorbents are prescribed, forced diuresis is performed, according to indications – hemo- / plasma sorption, albumin dialysis.

Routine therapy for aflatoxicosis includes taking antimycotic drugs that are active against Aspergillus, immunomodulators, hepatoprotectors, vitamin and mineral complexes, and probiotic bacteria.

Prognosis and prevention

Aflatoxicosis is dangerous with severe irreversible damage to the liver and nervous system, a high risk of death, and serious unforeseen consequences. Outbreaks of acute aflatoxicosis are regularly reported in Asia and Africa, and both adults and children are victims. In addition, these regions have a high percentage of deaths from cirrhosis of the liver and liver cell cancer.

Measures to combat aflatoxicosis include prevention of contamination of agricultural products with mold fungi at all stages of their cultivation, processing, and storage. For this purpose, breeding is carried out, genetic engineering methods are introduced, temperature and humidity control is provided in warehouses, chemical decontamination is performed. Before preparing and consuming products, it is necessary to carefully inspect them for the presence of mold fungi, do not use products of questionable quality, expired shelf life, or violation of the integrity of the package.

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ETIOLOGY OF ALLERGIC OTITIS

Annotation: *Allergic otitis is a slow-moving inflammation of the middle ear of an allergic nature. It is accompanied by unpleasant itching, hearing loss, and specific discharge from the ear cavity. Typical otitis media pain sensations are usually absent and can occur only with the addition of a secondary inflammatory process. Diagnosis of the disease is carried out jointly by an allergist and an otorhinolaryngologist based on the collection of anamnesis, otoscopy and analysis of the results of allergic tests. Treatment of allergic otitis media is mainly limited to elimination of the causal allergen and symptomatic therapy.*

Key words: *otit, otoscopy, inflammation*

Allergic otitis is an allergic inflammatory process localized in the middle ear, which is accompanied by swelling of the eustachian tube, the middle ear cavity and increased accumulation of effusion in the tympanic cavity. Despite the fact that this pathology is isolated as a separate disease, its symptoms can hardly be called highly specific, since they are more often involved in the general inflammatory-allergic process.

Allergic otitis is often found in infants and young children, usually after acute respiratory diseases, in people with reduced immunity, in workers in the chemical or any other industry associated with the production or use in the production process of aggressive or allergenic substances. The disease threatens to significantly reduce the quality of life due to the possible development of hearing loss. Pathology is treated by specialists in the field of practical allergology and otorhinolaryngology.

Reasons

Most often, the cause of allergic otitis media is either respiratory or contact allergens. Due to the anatomical structure and location of the ears, they are more often exposed to bacterial, fungal, and household allergens. A hypersensitivity reaction can occur in response to exposure to antigens of medicines, cosmetic products, as well as chemically aggressive substances that are part of household chemicals.

A factor in the occurrence of allergic otitis, among others, is a genetic predisposition to both allergic diseases in general and allergic otitis in particular. A violation of the structure of the maxillofacial region of any origin increases the individual risk of this disease. For this reason, Down syndrome is a serious risk factor for the development of this pathology. Congenital or acquired immunodeficiency increases the possibility of allergic diseases. Active or passive

smoking is an important prerequisite for the development of allergopathology. Often allergic otitis appears in patients suffering from such concomitant diseases as adenoids, bronchial asthma, chronic allergic rhinitis, urticaria.

Pathogenesis

The pathogenesis of this disease is determined by allergic and inflammatory processes. As a result of an allergic reaction, pathological changes occur in the mucous tissues of the eardrum, contributing to the suppression of its immune properties. This makes it more accessible to infectious agents, which can enter it in various ways, including with the flow of blood or lymph. The described pathogenesis determines the characteristic primary symptoms – edema of the tympanic cavity and auditory tube cavity of an allergic nature and accumulation of a composition-specific effusion containing eosinophils.

Symptoms

Patients suffering from allergic otitis usually notice a strong incessant itching of the ear canal, the release of viscous mucus, often with pus from the ear cavity. The patient is uncomfortable with noise and a feeling of stuffiness in the ear, a decrease in auditory sensitivity. There may be a sensation of fluid transfusion in the ear after changing the position of the head. Body temperature is normal, less often subfebrile, which indicates an inactive inflammatory process. Severe shooting pains are observed only with the addition of a secondary inflammatory reaction.

Complications

Due to the sluggish nature of inflammation, as well as the weak severity and specificity of symptoms, allergic otitis media can provoke very serious complications in the absence of timely diagnosis and treatment. Complicated allergic otitis media threatens to reduce hearing acuity and autophonia-increased perception of one's own voice in one ear. Prolonged absence of properly selected treatment can provoke complications such as facial nerve paralysis, atrophy of the eardrum, the development of an ear cholesteatoma – a tumor-like formation consisting of dead epithelial cells, pus, and an effusion surrounded by a capsule of connective tissue.

Diagnostics

Diagnosis is carried out by analyzing symptoms, collecting anamnesis for concomitant allergic diseases, as well as diseases that are a risk factor for the occurrence of allergic otitis. With the help of otoscopy, an otolaryngologist determines the degree of mobility of the eardrum and assesses the condition of the ear cavity. Sometimes there is redness, in some cases-purulent discharge or blisters with yellow contents – exudate. When performing a puncture of the eardrum (paracentesis), a mucous viscous liquid with a high content of eosinophils is released. A number of audimetric tests can detect hearing loss, which is especially important when examining children who find it difficult to describe their condition.

An allergological history allows you to take into account the genetic predisposition to such diseases, and allergological tests-to identify a specific allergen that causes a hypersensitivity reaction. Laboratory diagnostics is reduced to the analysis of peripheral blood and discharge from the ear for the content of eosinophils. The allergic nature of the disease is also indicated by the lack of effect from traditional treatment of middle ear inflammation, improvement of the condition against the background of taking antihistamines. An allergist may suggest allergic otitis media if the patient suffers from concomitant diseases such as bronchial asthma or allergic rhinitis. The presence of other allergic reactions, such as hives, edema, and itching, will also help the specialist establish the correct diagnosis.

Diagnosis of the disease in children is complicated by the fact that often a small patient is not able to accurately describe their discomfort. Some children define subjective symptoms as "crackling", complain of a feeling of fullness, fluid in the ears. Allergic otitis may be suspected by parents or other adults who have the opportunity to communicate with the baby for a long time. The reason for visiting the office of a pediatric otolaryngologist may be inattentiveness, absent-mindedness, constantly increased voice volume, delayed speech development of the child.

Treatment of allergic otitis media

A complex of therapeutic measures is selected by a specialist based on the clinical picture, the course of the disease and the nature of the allergen that caused it. To identify the cause, an allergist conducts special allergy tests. After determining the allergen according to indications, specific desensitization (hyposensitization) is performed – long-term regular allergen-specific immunotherapy-injecting gradually increasing concentrations of the allergen, starting with the minimum dose.

Local glucocorticosteroid therapy will help to get rid of unpleasant itching of the ear cavity: for this purpose, hydrocortisone and corticosteroid ointments are used. Antihistamines are also prescribed. Solutions of boric acid, hydrogen peroxide (3%), and ethacridine lactate-1 are used for washing the ear cavity. Patients are recommended to eat a full-fledged diet rich in vitamins, and if the allergen is a food product-a diet that excludes it. Patients should be treated for concomitant respiratory diseases of an allergic nature (vasomotor rhinitis, rhinosinusopathy). In case of secondary infection, antibiotics are prescribed according to the treatment regimen for chronic purulent otitis (drugs of choice-erythromycin, amoxicillin, a combination of sulfamethoxazole with trimethoprim).

To prevent the development of serious chronic complications with prolonged presence of discharge in the middle ear, surgical treatment is performed. A general abdominal operation is performed, which is prescribed in order to stop the purulent process, prevent its progression and develop life-

threatening consequences. Such an operation is associated with the risk of hearing loss and the possible need for subsequent functional operations.

Prognosis and prevention

With allergic otitis, the prognosis in patients of any age is most often favorable. To avoid the appearance of this pathology, first of all, it is necessary to reduce contact with the allergen to a minimum, and it is better to exclude them altogether. But in most cases, this is not easy to do, especially if we are talking about allergies to seasonal pollen, house dust, or animal hair. For people suffering from food allergies, it is easier to limit contact with the allergen by eliminating the allergenic product from their diet.

Timely diagnosis of the disease by a specialist and properly selected treatment will significantly reduce the risk of complications and help to avoid surgical intervention. If possible, self-medication should be avoided not only to prevent complications, but also to prevent the development of resistance or the initiation of additional sensitization reactions when taking incorrectly selected antibiotics.

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CHRONIC KIDNEY DISEASE AS A MANIFESTATION OF COMORBIDITY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Abstract. *Chronic obstructive pulmonary disease (COPD) has many systemic effects, one of which is renal dysfunction. Available studies show that patients with COPD often have risk factors for chronic kidney disease (CKD). Many risk factors for COPD are common for CKD. However, in everyday clinical practice, the incidence of renal dysfunction in patients with COPD is underestimated, while in-depth and targeted studies reveal changes in renal tissue function.*

Keywords: *chronic obstructive pulmonary disease, comorbidity, chronic kidney disease.*

INTRODUCTION

According to foreign researchers, renal dysfunction occurs in 10.2% of patients with COPD, a significant proportion of whom are patients over 75 years of age [3]. The presence of chronic kidney disease (CKD) in patients hospitalized with an exacerbation of COPD is associated with an increased mortality rate [4]. In the studies of E.V. Bolotova, A.V. Dudnikova [1, 2] it was demonstrated that patients with COPD often have risk factors for the development of CKD. Thus, the most frequently noted were: elevated C-reactive protein values (in 100% of cases), smoking (in 92% of those examined), old age (in 78.6% of patients over 65 years of age), concomitant arterial hypertension (detected in 65.6% of patients with COPD) [1].

MATERIALS AND METHODS

Moreover, the vast majority of patients with COPD (92.6%) had a combination of three or more CKD risk factors [2]. These data are consistent with the results of studies conducted by D.A. Dolgopolova [3], who indicates that patients suffering from COPD had the following CKD risk factors: male gender (84.1%), old age (58.6%), excess body weight or obesity (49.6%), smoking (79.3%), and elevated blood pressure (59.3% of patients). D.S. Nurgazieva [4], when studying the glomerular filtration rate (GFR) in patients with COPD, notes that most patients have stage II CKD. According to E.V. Bolotova, A.V. Dudnikova [2], 37.3% of individuals with COPD have a decrease in SCF, calculated using the CKD-EPI formula taking into account serum creatinine (SCFr), within 89-60 ml/min/1.73 m2, 26.7% of patients have a decrease in SCFr

to 59-45 ml/min/1.73 m2, and 3.3% of patients have SCFr within the range of 44-30 ml/min/1.73 m2. At the same time, only 4.3% of COPD patients are diagnosed with CKD at the prehospital stage [2]. D.A. Dolgopolova in her study [4] shows that among the examined individuals with COPD only every fifth had an optimal SCFr, and in 13.1% of patients the SCFr was determined to be within 59-45 ml/min/1.73 m2 (in this group of patients, those suffering from severe and extremely severe COPD predominated) [5]. About 37% of COPD patients have a persistent decrease in SCF to less than 60 ml/min/1.73 m2 [3], which exceeds the general population level, which according to F. Mallamaci is from 2 to 18% [3].

RESULTS AND DISCUSSION

A marked decrease in SCFr in patients with severe and extremely severe COPD may indicate a significant role of chronic hypoxia in the development of renal pathology [4]. There is evidence of negative correlations between the SCFr level and the thickness of the posterior wall of the left ventricle (PWL), creatinine levels and PWL. As filtration in the glomeruli of the kidneys decreases, the severity of left ventricular myocardial hypertrophy (LVH) increases. Thus, D.A. Dolgopova found that in patients with COPD, the PWL value of >10.5 mm contributes to renal hypofiltration [5]. However, when calculating the SCF based on creatinine levels in individuals with severe and extremely severe COPD, it should be taken into account that a low body mass index in such patients is associated with a decrease in muscle mass and an increase in the severity of protein-energy malnutrition. This is important due to the presence of an inverse correlation between the creatinine value and the amount of muscle mass. Increased catabolic processes in severe and extremely severe COPD lead to a deficit of muscle tissue and, consequently, a decrease in creatinine synthesis, which demonstrates the limitations of calculating the SCF using the CKD-EPI formula using creatinine [2]. Due to the limited use of creatinine values for assessing renal function, including in patients with COPD, a search is underway for new markers that more accurately reflect the state of renal tissue. One of the markers of renal dysfunction that has been found and is currently being actively used is the cysteine proteinase inhibitor cystatin C. It is expressed by nucleated cells of the body and functions as a regulator of the activation of extra- and intracellular proteolysis. Its positive properties for studying renal function are its independence from the patient's age, muscle mass, and the absence of gender influence on its values. Cystatin C is also more accurate than creatinine because it is freely filtered in the glomeruli of the kidneys and metabolized in the renal tubules and is not secreted.

The advantages of serum cystatin C (s-cystatin C) are revealed in cases of moderate decrease in SCF (the so-called “creatinine blind area”) in the range of 90-60 ml/min/1.73 m2. In this range, there is no proportionality between creatinine and the true value of SCF, while s-cystatin C shows values closest to the real values of SCF calculated using the exogenous marker. The correlation coefficient of s-cystatin C and the true value of SCF is 0.92, while for creatinine

it is 0.74 [3]. In addition, s-cystatin C is also discussed as a marker of cardiorenal syndrome (CRS) [4], which is important for assessing the state of the cardiovascular system in patients with COPD, since in the latter this lung pathology is often combined with damage to the cardiovascular system [2]. When studying the function of the cardiovascular system in individuals with CKD, T.E. Rudenko et al. [2] showed that s-cystatin C has a direct correlation with the presence of arterial hypertension and a strong correlation with the left ventricular myocardial mass index and LVH. Thus, LVH was detected in 52% of the subjects, and the frequency of its occurrence increased with the severity of renal dysfunction, assessed by the value of s-cystatin C in the blood serum.

CONCLUSION

Thus, COPD is a pathology with many systemic effects, and the comorbid background of patients suffering from this disease is extremely burdened. Currently, researchers have begun to pay great attention to the impairment of the functional state of the kidneys in patients with COPD as an important predictor of the development of cardiovascular pathology. However, to date, data fully revealing the development of renal dysfunction in individuals with COPD are insufficient, and further in-depth study of this problem is required.

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THE SHARE OF DRUG ADDICTS AMONG COMPLETED SUICIDES

Abstract. *The article discusses the issues of suicide mortality among drug users. When comparing the indicators of the contingent of people registered with drug addiction treatment and those who died by suicide, 64 cases of suicide committed by drug addicts were identified. Of these, 63 were men and 1 was a woman (the ratio is sharply shifted - M:F - 63:1, which differs significantly from the general population). Most often (64.0%), deceased drug addicts were in the age category of 36-45 years.*

Keywords: *drug addicts, drug users, users of psychoactive substances, suicide, statistics, suicide records.*

INTRODUCTION

Suicides constitute one of the leading categories in the structure of mortality from external causes, the reduction of which is the most important medical and social task [1, 2, 3]. The primary feature of suicidal mortality is the potential possibility of its regulation by influencing pro-suicidal factors and expanding medical and preventive work in risk groups [4].

MATERIALS AND METHODS

The sources of medical information were the combined databases of personal data of the Bureau of Forensic Medical Examination (sectional material of confirmed suicides) and the Regional Narcological Dispensary (register of registered persons), as well as statistical data on suicides in the study region.

RESULTS AND DISCUSSION

Mental health problems are the most common and best explored risk factor associated with suicidal ideas, suicide attempts and completed suicide. About 90% of all people who commit suicide met the diagnostic criteria for one or more psychiatric disorders. People who abuse alcohol and/or drugs or are dependent on them, attempting suicide nearly six times more often than people who do not abuse these substances. The rate of completed suicide among addicts is 2 to 3 times higher than among the males who are not addicts. Among women, the use of substances increases the risk of suicide for 6.5 to 9 times compared to women non addicts.

In most cases, drug addicts attempt suicide by overuse of drugs that is an overdose, or a combination of drugs and tablets, while in a few cases the manner in which the suicide is attempted is not directly related to drugs. Although there is a correlation between the disorder caused by the use of substances and suicidal behavior, a large number of addicts will never attempt suicide. It is therefore

important to identify those individuals with the disorder caused by the use of substances that may be at higher risk for suicide.

A comparison of data from the dispensary drug addiction register and the Bureau of Forensic Medical Examination revealed 64 suicides. Two thirds (67.2%) of the suicides were registered for opiate addiction (Table 1).

Table 1.

Distribution of suicides by type of addiction and year of suicide

Type of addiction	2019		2020		2021		2022		2023		Total	
	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%
Opiates	9	75,0	9	75,0	14	73,7	6	85,7	5	35,7	43	67,2
Cannabinoids	2	16,7	2	16,7	3	15,8	–	–	5	35,7	12	18,8
Psychostimulants	–	–	1	8,3	2	10,5	1	14,3	4	28,6	8	12,5
Solvents	1	8,3	–	–	–	–	–	–	–	–	1	1,5
Total	12	100,0	12	100,0	19	100,0	7	100,0	14	100,0	64	100,0

A study of the gender composition of individuals who committed completed suicide showed the following distribution: 63 men, 1 woman. The ratio is dramatically skewed – M:F – 63:1, which differs significantly from the general population indicators in Russia, where the number of men dying from suicide is 4.8 times higher than the number of women (M:F ratio – 4.8:1) [21, 22]. Most often (64.0%) the deceased drug addicts belonged to the age category 36-45 years. The average age values were determined for opiate users (42.7±2.6 years) and for individuals using synthetic psychostimulants (37.1±2.9 years). The indicators we have identified are also significantly lower than the average age indicators of suicides in the general population, which are 47 years for men and 54 years for women [21].

All the identified cases of suicide are related to the so-called harsh (brutal) methods. Self-hanging is the most common (87.5%), while self-cutting is recorded more than 9 times less frequently (9.4%). Intentional overdoses were not identified in any case.

The share of drug addicts in the total number of suicides in the Tashkent region in different years of the study period (2019-2023) ranges from 3.2% to 6.5%, i.e. an average of 4.6% (Table 2).

Table 2.

The share of drug addicts in the total number of suicides in 2019–2023.

Indicator	2019	2020	2021	2022	2023	Total
Number of drug addict suicides, abs.	12	12	19	7	14	64
Number of suicides, total, abs.	315	300	292	220	254	1381
Share of drug addicts in the number of suicides, %	3,8	4,0	6,5	3,2	5,5	4,6

The figures we obtained are somewhat lower than the figures cited by individual domestic [19] and foreign [20] authors. Obviously, this is primarily due

to the absence of intentional drug overdoses among registered suicides, the confirmation of which requires not only pathological and laboratory studies, but also a posthumous psychological and psychiatric examination [23].

CONCLUSION

The obtained data allow us to estimate the “lower level” of the proportion of drug addicts among the lethal contingent, and also indicate the need to improve the system of posthumous diagnostics of suicides of psychoactive substance users in order to obtain more reliable indicators. One of the options for solving the problem is a systematic approach, including entering into medical documentation and recording all forms of suicidal activity registered during the patient’s observation period. On the one hand, this will allow, if necessary, to use archival data for an expert decision on intentional and voluntary departure from life. On the other hand, it will provide an opportunity to evaluate the effectiveness of measures to prevent and correct suicidal behavior in risk groups.

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SUICIDAL BEHAVIOR IN WOMEN

Abstract. *The review presents modern scientific concepts of suicidal behavior in women based on the analysis of literary sources. It examines the problems of prevalence of completed suicides and suicide attempts in the female population, typical socio-demographic and medical characteristics of female suicides, suicide risk factors typical for women, and features of methods and circumstances of women's suicidal actions.*

Keywords: *suicide, suicidal behavior, women.*

INTRODUCTION

The information on suicidal behavior in women presented in modern scientific literature is fragmentary and covers only individual aspects of the problem, while full-scale and comprehensive studies in this area, as far as we have been able to establish, have not yet been conducted. This review summarizes the literature data on the issue under consideration in order to form a complete picture of the current understanding of suicidal behavior in women. The prevalence of completed suicides in the female population is certainly subject to geographic and national fluctuations; however, studies conducted in recent years make it possible to estimate, to some extent, the average global level of this phenomenon.

MATERIALS AND METHODS

The rate of female suicides in most countries of the world, including our country, is significantly lower than the rate of male suicides. An exception in this regard is China, where today, according to A.T. Cheng and C.-S. Lee [1], the rate of suicides among women is very high, especially among young women living in rural areas. At the same time, specific differences in the frequency of suicides by men and women are assessed in the literature differently. According to the WHO Report [2], the ratio of the number of men and women who commit suicide is 3.5: 1. According to numerous sample studies, the number of male suicides per female suicide ranges from 3 to 8 [3]. The reason for such significant discrepancies, apparently, lies in the differences in the studied samples according to such characteristics as place of residence (city, village), ethnic and cultural characteristics, as well as different time periods of the studies. The importance of the last factor is drawn to attention by D. Bogoyavlensky [3], who, having analyzed the dynamics of the prevalence of suicides in our country over a long period of time, established that in years of a general decrease in the suicide rate, the gap between the number of men and the number of women among suicides decreases to 3 times, and in years of an increase it increases to 5 times.

RESULTS AND DISCUSSION

The data provided in the literature on the prevalence of suicide attempts among women are less accurate due to the complexity of statistical recording of this form of suicidal behavior and the absence of an official system for registering suicide attempts in most regions. Selective epidemiological studies can shed some light on this issue. Thus, the data on the frequency of suicide attempts among the female population of Moscow in 1998 provided in the monograph by V.F. Voitsek [4] range from 15.0 to 105.9 per 100,000, depending on the age group (with age, the frequency of suicide attempts that do not result in a fatal outcome decreases in women). I.V. Zhuravleva et al. [2] report that the average frequency of suicide attempts among female residents of Ivanovo reaches 110.7 per 100,000 female population, and in the age group of 14-29 years this figure is 241.8, and in the age group of 30 years and older – 81.8. The literature data on the ratio of the frequency of suicide attempts among women and men today look quite contradictory. Thus, it is indicated that in our country the frequency of suicide attempts among women exceeds the corresponding figure for men [3]. According to the report of A. Schmidtke et al. [4], the frequency of suicide attempts among women is higher than among men in most European countries, with the exception of Finland. Touching upon the suicidal behavior of adolescents, L. Kotila and J. Lonnqvist [1] report that among teenagers, girls also commit suicide attempts more often than boys. At the same time, specific data on the issue of the ratio of the frequency of suicide attempts committed by men and women differ significantly among different authors. For example, according to the report of S.V. Vaulin [2], women commit suicide attempts 1.4 times more often than men. The American manual of psychiatry edited by R. Scheider [3] indicates that the frequency of suicide attempts among women is 2-3 times higher than among men. An even higher figure is given by G.I. Kaplan and B.J. Sadok [4], who report that for every one male suicide attempt there are four female ones. Similar data are contained in the article by L.N. Kasimova, who found that thoughts of suicide and attempts to commit suicide among women in the general population of a large industrial city are encountered almost 4 times more often than among men. On the other hand, a number of authors report a practical equality in the frequency of suicide attempts among women and men. Finally, according to V.F. Voitsek and A.S. Khristo, men predominate among persons committing suicide attempts while intoxicated, and women predominate among sober suicides.

Considering the professional status of an individual as a factor in suicide risk, I.H. Makinen and D. Wasserman report that high suicide rates are typical for women with the highest and lowest professional status (determined by qualification level and official position), while low suicide rates are typical for women occupying positions of average professional status. According to the authors, women differ in this from men, among whom the suicide rate is lowest among individuals with the highest professional status and highest among

individuals with the lowest professional status. E. Frank and A.D. Dingle [4] draw attention to the high frequency of suicide attempts among female doctors.

CONCLUSION

The literature data presented in this review, when summarized, allow us to formulate a number of provisions concerning suicidal behavior in women, which can be considered established to date. First of all, there is no doubt that women commit suicide several times less often than men (with the exception of adolescents, for whom the data are still contradictory). Suicidal attempts that do not end in death, on the contrary, are apparently more often committed by women, but the ratio of the frequency of female and male suicide attempts remains unclear.

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EPIDEMIOLOGY OF COMPLETED SUICIDES IN ORGANIC MENTAL DISORDERS

Abstract. *As a result, a number of characteristics of the epidemiology of suicides in patients with these disorders were established: quantitative dominance of patients with organic mental disorders among all suicides with a psychiatric diagnosis; 2 times higher suicide rate compared to the general population; 1.5 times higher suicide rate among women compared to men; uneven growth in the frequency of suicides with age; an increase in suicidal activity in the spring and its decrease in the fall; a higher level of suicides in non-psychotic organic disorders in men and in organic psychoses and dementia in women.*

Keywords: *suicide, suicidal behavior, suicide epidemiology, suicide risk, organic mental disorders.*

INTRODUCTION

One of the most important groups of the population with a high level of suicidal activity is the mentally ill. According to the literature, the frequency of suicides among patients of psychiatric institutions is several times higher than in the general population [1, 2]. For this reason, suicidal behavior of the mentally ill remains the subject of numerous studies. Over the past decades, various methodological and organizational approaches to suicide prevention have been proposed [3]. However, the suicidological situation in the population of psychiatric patients remains complex. One of the reasons for this, in our opinion, is the fact that the studies of suicidal behavior of the mentally ill conducted to date have been aimed only at a few nosological groups considered to be the most suicidal: schizophrenia, affective disorders, personality disorders, mental disorders due to the use of psychoactive substances.

MATERIALS AND METHODS

In the process of statistical processing of the obtained material, a number of parametric and nonparametric statistical indicators were calculated [3]: Student's criterion (t) - to assess the statistical significance of differences between the studied values; distribution mode (Mo) - to identify the direction of shifts in the distribution of the studied characteristics; the moving average method - to assess trends in changes in the studied average indicators; the chi-square criterion ($\chi 2$) - to assess the statistical significance of differences in the distribution of the compared groups of patients; the rates of increase and decrease of relative values - to assess the degree of temporary fluctuations in the studied relative values.

RESULTS AND DISCUSSION

During the study period, 54 completed suicides were committed by patients with organic mental disorders observed in the dispensary department of the Republican Clinical Hospital of the Ministry of Health of the Udmurt Republic, of which 28 were men and 26 were women (the ratio of the number of male suicides to the number of female suicides was 1:0.9). Moreover, suicides committed by patients with organic mental disorders accounted for 45.0% of the total number of suicides committed by all patients of the said dispensary during the study period. For comparison: during the same period, schizophrenia, schizotypal and delusional disorders (F2) accounted for 30.0% of all suicides, affective disorders (F3) - 5.8%, neurotic, stress-related and somatoform disorders (F4) - 7.5%, mature personality disorders (F6) - 3.3% and mental retardation (F7) - 8.3%. Thus, according to the available data, among the patients of the dispensary who died from suicide, most of them were people suffering from organic mental disorders. This fact alone indicates a large contribution of this nosological group to the formation of the general suicidological situation in the contingent of the mentally ill. A study of the frequency of completed suicides among patients observed in the dispensary under study for organic mental disorders showed that in the years under review its level fluctuated within the range from 0.00 to 1.89 per 1000 people per year. The average annual frequency of suicides among the studied contingent for the study period was 0.51 per 1000 people. This figure is approximately 2 times higher than the similar figure for the general population of Izhevsk, which was 0.25 per 1000 people during the same period. The frequency of suicides among the studied female patients was approximately 1.5 times higher than that of the corresponding category of men (0.62 versus 0.42 per 1000 people). It should be noted that, according to this indicator, the suicidological situation among patients with organic mental disorders is fundamentally different from that in the general population, where men commit completed suicide 4–6 times more often than women [3].

Table 1.

Average annual frequency of completed suicides in different nosological groups of patients during the study period (per 100,000 people)

ICD-10 heading	All patients	Male	Female
Organic mental disorders (F0)	51	42	62
Schizophrenia, schizotypal and delusional disorders (F2)	113	127	103
Affective disorders (F3)	180	235	153
Neurotic, stress-related and somatoform disorders (F4)	75	113	59
Mature personality disorders (F6)	63	86	34
Mental retardation (F7)	14	14	14

Based on the presented age distribution of suicides, it can be assumed that one of the explanations for the higher frequency of suicides among women suffering from organic mental disorders compared to the same category of men is the predominance of elderly people among them. Thus, according to official registration data, on the basis of which this study was conducted, the proportion of people aged 60 years and older among the contingent of women with organic mental disorders during the study period was 73.29%, while among men with the same diagnosis - only 39.38%. This hypothesis is also supported by literature data, according to which advanced age is a generally recognized factor in suicide risk [1, 3]. It should also be noted that, according to the results of previously conducted studies, elderly individuals suffering from organic diseases of the brain of vascular origin form a high suicide risk group among the female population as a whole [4].

CONCLUSION

Thus, the conducted study showed that the epidemiology of completed suicides in individuals suffering from organic mental disorders has a number of features. The revealed features concern the contribution of the specified nosological group to the general suicidological situation in the contingent of mentally ill patients, as well as the influence of such factors as gender, age, season and level of mental disorders on the suicidal activity of patients. The obtained results confirm the need for further research in the area under consideration in order to develop differentiated approaches to the prevention of suicides among patients with organic mental disorders.

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ETIOLOGY, PATHOGENESIS AND TREATMENT OF ADENOVIRUS INFECTION, WHICH IS NOW CONSIDERED A COMMON AND CURRENT INFECTION

Annotation: *Adenovirus infection is an acute respiratory viral infection caused by an adenovirus and characterized by the development of rhinopharyngitis, laryngotracheobronchitis, conjunctivitis, lymphadenopathy, and dyspeptic syndrome. In the general structure of acute respiratory diseases, adenovirus infection accounts for about 20%.*

Key words: *Adenovirus infection , respiratory viral infection, immunostimulant.*

The greatest susceptibility to adenoviruses is demonstrated by children from 6 months to 3 years. It is believed that in preschool age, almost all children suffer one or more episodes of adenovirus infection. Sporadic cases of adenovirus infection are recorded year-round; in the cold season, the incidence is epidemic outbreaks. Close attention to adenovirus infection is focused on infectious diseases, pediatrics, otolaryngology, and ophthalmology.

Currently, more than 30 serovars of viruses of the Adenoviridae family that cause human disease are known. The most common cause of outbreaks of adenovirus infection in adults are serotypes 3, 4, 7, 14 and 21. Serovars of types 1, 2, 5, and 6 usually affect preschool children. Pathogens of pharyngoconjunctival fever and adenovirus conjunctivitis in most cases are serotypes 3, 4, 7.

Virions of the pathogen contain double-stranded DNA, have a diameter of 70-90 nm and three antigens (group-specific A-antigen; B-antigen that determines the toxic properties of adenovirus and type-specific C-antigen). Adenoviruses are relatively stable in the external environment: under normal conditions, they persist for 2 weeks, tolerate low temperatures and drying well. At the same time, the causative agent of adenovirus infection is inactivated when exposed to ultraviolet rays and chlorine-containing disinfectants.

Adenoviruses are spread from sick people who secrete the pathogen with nasopharyngeal mucus and feces. Hence, there are 2 main ways of infection – in the early period of the disease - airborne; in the late period-fecal-oral – in this case, the disease proceeds by the type of intestinal infections. A water route of infection is possible, which is why adenovirus infection is often referred to as"swimming pool disease".

The source of adenovirus infection can also be virus carriers, patients with asymptomatic and erased forms of the disease. Immunity after an infection is type-specific, so repeated diseases caused by a different serotype of the virus are possible. Nosocomial infection occurs, including during parenteral treatment procedures.

Pathogenesis

Adenovirus can enter the body through the mucous membranes of the upper respiratory tract, intestines or conjunctiva. Reproduction of the virus occurs in epithelial cells, regional lymph nodes and intestinal lymphoid formations, which coincides with the incubation period of adenovirus infection. After the affected cells die, viral particles are released and enter the blood, causing viremia.

Changes develop in the nasal membrane, tonsils, posterior pharyngeal wall, conjunctiva; inflammation is accompanied by a pronounced exudative component, which causes the appearance of serous discharge from the nasal cavity and conjunctiva. Viremia can lead to involvement of the bronchi, digestive tract, kidneys, liver, and spleen in the pathological process.

Symptoms of adenovirus infection

The main clinical syndromes that this infection can take are catarrh of the respiratory tract (rhinopharyngitis, tonsillopharyngitis, laryngotracheobronchitis), pharyngoconjunctival fever, acute conjunctivitis and keratoconjunctivitis, diarrheal syndrome. The course of adenovirus infection can be mild, moderate and severe; uncomplicated and complicated.

The incubation period for adenovirus infection lasts 2-12 days (usually 5-7 days), followed by a manifest period with consistent onset of symptoms. Early signs are an increase in body temperature to 38-39 °C and moderate symptoms of intoxication (lethargy, loss of appetite, muscle and joint pain).

Respiratory tract damage

Catarrhal changes in the upper respiratory tract occur simultaneously with fever. Serous discharge from the nose appears, which then becomes mucopurulent; nasal breathing becomes difficult. There is moderate hyperemia and swelling of the mucous membrane of the posterior pharyngeal wall, dotted whitish plaque on the tonsils. When an adenovirus infection occurs, a reaction occurs from the submandibular and cervical lymph nodes. In the case of laryngotracheobronchitis, hoarseness of voice, dry barking cough, shortness of breath, and laryngospasm may occur.

Conjunctival lesion

Conjunctival damage in adenovirus infection can occur as catarrhal, follicular or filmy conjunctivitis. Usually, the eyes are involved in the pathological process alternately. Worries about cutting, burning, lacrimation, a feeling of a foreign body in the eye. Examination reveals moderate redness and swelling of the eyelid skin, hyperemia and graininess of the conjunctiva, injection of the sclera, and sometimes the presence of a dense grayish-white film

on the conjunctiva. In the second week of the disease, signs of keratitis may join conjunctivitis.

Intestinal form

If the adenovirus infection occurs in the intestinal form, there are paroxysmal pain in the parotid and right iliac region, fever, diarrhea, vomiting, mesenteric lymphadenitis. With severe pain syndrome, the clinic resembles acute appendicitis. Fever with adenovirus infection lasts 1-2 weeks and can be undulating in nature. Signs of rhinitis and conjunctivitis subside after 7-14 days, catarrh of the upper respiratory tract-after 14-21 days.

Complications

In the severe form of the disease, parenchymal organs are affected; meningoencephalitis may occur. Children in the first year of life often develop adenovirus pneumonia and severe respiratory failure. The complicated course of adenovirus infection is usually associated with a layer of secondary infection; the most common complications of the disease are sinusitis, otitis media, and bacterial pneumonia.

Diagnostics

Recognition of an adenovirus infection is usually made on the basis of clinical data: fever, catarrh of the respiratory tract, conjunctivitis, polyadenitis, and the consistent development of symptoms. Methods of rapid diagnosis of adenovirus infection are immunofluorescence reaction and immune electron microscopy. Retrospective confirmation of the etiological diagnosis is performed by ELISA, RTGA, and RSC. Virological diagnostics involves the isolation of adenovirus from nasopharyngeal flushes, scrapings from the conjunctiva and feces of the patient, but due to its complexity and duration, it is rarely used in clinical practice.

Differential diagnosis

Differential diagnosis of various clinical forms of adenovirus infection is carried out with influenza, other acute respiratory viral infections, pharyngeal and ocular diphtheria, infectious mononucleosis, mycoplasma infection, and yersiniosis. For this purpose, as well as for the appointment of local etiotropic treatment, patients need to consult an ophthalmologist and an otolaryngologist.

Treatment of adenovirus infection

General etiotropic therapy is performed with antiviral drugs (umifenovir, ribavirin, a drug made from antibodies to human gamma interferon). Local therapy of adenovirus infection includes: instillation of eye drops (deoxyribonuclease solution or sodium sulfacyl), application of acyclovir in the form of eye ointment behind the eyelid, intranasal application of oxaline ointment, endonasal and endopharyngeal instillation of interferon. Symptomatic and post-syndromic therapy is performed: inhalation, taking antipyretics, antitussives and expectorants, vitamins. When an adenovirus infection is burdened with bacterial complications, antibiotics are prescribed.

Prognosis and prevention

Uncomplicated forms of adenovirus infection end favorably. Deaths can occur in young children due to the occurrence of severe bacterial complications. Prevention is similar to the prevention of other acute respiratory infections. During periods of epidemic outbreaks, isolation of patients is indicated; routine disinfection, ventilation and UFO of premises; administration of interferon to persons at risk of infection. Specific vaccination against adenovirus infection has not yet been developed.

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THE MOST IMPORTANT FACTORS IN THE ETIOLOGY OF ALIMENTARY TOXIC ALEUKIA AND THEIR CLASSIFICATION

Annotation: *Alimentary toxic aleikia, also known as septic, alimentary hemorrhagic tonsillitis, and acute alimentary mycotoxicosis, is a severe poisoning caused by the fusarium fungal toxin. The path of infection is food, most often associated with eating products from overwintered grain containing fungal spores. The pathology was first described in 1932 during an epidemic in Kazakhstan; it occurs all over the globe. It was found that residents of agricultural areas are most susceptible to infection, usually an increase in the number of cases is observed in the period from April to June. A sick person is not contagious to others.*

Key words: *Alimentary toxic aleikia, drug, rye, oats.*

The causative agents of the disease are fungi of the genus Fusarium, which produce the toxin poin, which causes local manifestations in the form of necrosis and has a tropicity to hematopoietic and lymphoid tissues. The source of infection is grain crops that served as a breeding ground for reproduction and accumulation of poin during wintering. These agricultural plants include millet, buckwheat, wheat, rye, oats, and barley. Favorable conditions for the growth of the fungus are high humidity, the presence of oxygen and heat. In the cold season, fungi turn into spores and survive the winter, and after the onset of spring, they begin to produce poin again.

Warm winter and early spring, as well as high humidity and other violations of grain storage rules are considered risk factors for an outbreak of the disease. The toxin is not destroyed by heat treatment, fermentation, and is able to maintain its properties for up to five years, especially in the storage temperature range from -1˚C to +5˚C. Patients with immunosuppression (HIV infection, long-term therapy with corticosteroids, immunosuppressants), people after splenectomy, children, agricultural workers, food industry workers, and public catering are considered risk groups for morbidity.

Pathogenesis

After getting poin on the mucous membranes, a local reaction occurs, associated with necrotic tissue changes due to extensive inflammation. Through the wound surface, the toxin is intensively absorbed into the blood, spreads throughout the body, showing tropicity to myeloid (red oblique brain) and later to lymphoid tissue. Under the influence of poin, there is a suppression of hematopoiesis, inflammatory changes in the thymus, spleen, lymph nodes, Peyer's plaques and appendix. There is a gradual decrease in the number of red blood

cells, monocytes, granulocytes, platelets, T-lymphocyte precursors, B-lymphocytes and NK-cells, as well as macrophages and dendritic cells. Hemorrhagic changes occur in parenchymal organs, skin, and septic conditions develop. Immunity after a previous illness is stable, but its duration has not been studied.

Classification

In the clinic of alimentary mycotoxicosis, two variants of the course are distinguished, which are directly dependent on the amount of grain product eaten, the toxigenicity of the strain, the concentration of toxin in the food product, and the immune competence of the patient's body:

1. **Lightning** fast. It is characterized by a rapid increase in clinical manifestations and a fatal outcome during the first day of the disease due to advanced DIC syndrome or sepsis.
2. **Typical**. It lasts about 3-4 weeks, is characterized by a gradual increase in the severity of the condition and pronounced staging. It includes toxic, leukopenic, and anginal-hemorrhagic stages.

Symptoms

The incubation period is from 2 to 6 weeks, and if you consume a large number of products from infected grains (more than 500 g), symptoms appear after a few days. The first signs of poisoning are nausea, vomiting, loose watery stools, weakness, decreased performance and fatigue. The described manifestations last about 3 days, followed by a period of leukopenia. Clinically, this condition manifests itself as an increase in weakness, malaise, drowsiness (this stage usually lasts 2-3, less often 6-8 weeks).

In the future, with the aggravation of toxic effects, the anginal-hemorrhagic stage occurs. Patients complain of high rises in body temperature (more than 39°C), stunning chills, the appearance of spot hemorrhages (petechiae) on the body, less often – ecchymosis; gingival and nasal bleeding. At the same time, there are severe pain when swallowing, an unpleasant putrid smell from the mouth, dirty gray deposits on the tonsils, in the oral cavity, larynx and pharynx. With the progression of the disease, phlegmons and abscesses of the skin, fiber and internal organs are formed.

Complications

Complications usually manifest with a lightning-fast course of food mycotoxicosis or in the anginal-hemorrhagic period of a typical variant of the disease. The most common of these are pneumonia, bronchitis, lung abscesses, soft tissue phlegmons, and osteomyelitis. In conditions of increasing immunosuppression, these conditions can lead to sepsis. In some cases, the appearance of necrotic changes in the distal parts of the limbs is observed. Deficiency of the blood coagulation system, damage to parenchymal organs (kidneys, liver, spleen) lead to the development of DIC-syndrome with a characteristic clinic of massive uncontrolled bleeding.

Diagnostics

If alimentary-toxic aleikia is suspected, consultation with an infectious disease specialist, otorhinolaryngologist, pulmonologist is mandatory; after the appearance of ulcers of the skin and internal organs, a surgeon is required. Laboratory and instrumental examinations are performed to identify the pathogen, assess the nature and severity of changes:

- **Clinical and biochemical blood** tests. In the general blood test, pronounced leukopenia, thrombocytopenia, anemia, and accelerated ESR are observed. Biochemical parameters reflect an increase in the activity of AST, ALT, creatinine, and urea.
- **Identification of infectious agents**. Isolating fungi from human tissues and blood is a time-consuming and expensive process. Bacanalysis is performed by seeding the material on nutrient media. Detection of the toxin in grain is carried out using a biological sample (feeding laboratory pigeons with suspicious grain, skin test on rabbits), grain chromatography.
- **Endoscopy of ENT organs.** When examining the pharynx-pharyngoscopy-signs of catarrhal, necrotic or gangrenous sore throat are found. Typical deposits of dirty gray or brown color, passing from the tonsils to the mucous membrane of the larynx, pharynx, oral cavity; bleeding of the nasal and throat mucosa, formation of necrosis.

If signs of pneumonia appear, a chest X-ray is performed; for the purpose of differential diagnosis, ultrasound of the abdominal cavity, pelvis, retroperitoneal space, and lymph nodes is used. Differential diagnosis is carried out with diphtheria, sepsis, systemic mycoses, agranulocytosis, Simanovsky-Plaut-Vincent angina, poisoning with heavy metals, radioactive substances.

Treatment of alimentary-toxic aleikia

Therapeutic measures begin with the removal of poisoned foods from food, gastric lavage and a siphon enema (or taking a laxative). It is recommended to exclude alcohol, seasonings, fatty, fried, and cereal products from the diet, adhere to frequent fractional meals, and serve food at room temperature (to avoid additional injury to the mucous membranes). It is necessary to monitor the drinking regime, while it is preferable to use water or non-acidic juices. After each meal, it is recommended to rinse the mouth with antiseptic solutions (chlorhexidine, furacilin, calendula, sage, chamomile).

Treatment of alimentary toxic alaikia is usually inpatient, including detoxification therapy (glucose-salt solutions) and broad-spectrum antibiotics (penicillins, cephalosporins). With a prolonged course of pathology, it may be necessary to replace the loss of blood components: transfusion of red blood cells, platelet mass, and leukocyte concentrate is performed. There is evidence of a positive effect of the colony-stimulating factor on the course, severity and outcome of the disease. For the duration of treatment, it is recommended to reduce the dose of immunosuppressive drugs or cancel them if possible. When localized

or spilled purulent processes appear, they are opened and drained, and local antibacterial agents (ointments, suspensions) are used.

Prognosis and prevention

With an uncomplicated course, the disease lasts approximately 3-4 weeks. With timely access to medical care, withdrawal from the use of contaminated products, the manifestations of mycotoxicosis tend to disappear on their own. With the appearance of hemorrhagic syndrome and necrotic changes in the tonsils, the proportion of deaths is 50-80%. However, for the occurrence of life-threatening conditions, it takes about two to three months of constant consumption of an infected cereal product, even against the background of obvious malaise. Timely hospitalization and a thorough epidemiological investigation reduce the risk of death and complications.

No specific prevention (vaccine) has been developed at this stage of medical development. To prevent contamination, the sanitary surveillance authorities conduct periodic grain inspections and explanatory work with the population. The sale and purchase of overwintered grain for the food needs of humans and animals is prohibited (delivery to distilleries is allowed). In the territory where sporadic cases of toxic aleikia have been recorded, grain products and raw materials from them are subject to disposal; the population should be examined for leukopenia.

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CHARACTERISTICS OF THE COURSE AND TREATMENT OF PNEUMONIA IN CHILDREN

Abstract. *Pneumonia in children remains one of the most common severe diseases; despite intensive study, its diagnosis and treatment are not without problems that are not always successfully solved. The purpose of the thesis is to identify these problems and show the ways to solve them at present. The criterion for diagnosing pneumonia is the presence of pulmonary infiltrate on the radiograph. Community-acquired pneumonia is most often caused by pneumococci and mycoplasma; respiratory viruses, influenza usually serve as factors contributing to bacterial infection. The high level of hyper- and hypodiagnosis of community-acquired pneumonia is associated with the similarity of its symptoms with ARVI; taking into account general disorders (signs of disease severity) allows to improve the quality of diagnostics.*

Keywords: *children, community-acquired pneumonia, pneumococci, mycoplasma.*

INTRODUCTION

Pneumonia – inflammation of the lungs – has been known since ancient times, its study has lasted 200 years, but even now diagnostics and treatment are not without problems. This is evidenced by both literature data and an analysis of everyday pediatric practice.

MATERIALS AND METHODS

The variety of causes and forms of pneumonia has led to the creation of clinical, radiological, and morphological classifications. The most important for practice is the etiological classification (used in ICD-10). However, since the indication of the pathogen in most pneumonias is difficult, it is difficult to use. Therefore, the term "community acquired pneumonia" has become the closest to the etiological classification, introduced into practice at the end of the twentieth century (it is mentioned in PubMed in 35 articles in 1972–1979, and in 1390 in 1980–2020). And the point is not in the circumstances of the development of community-acquired pneumonia, but in the fact that they are caused by only a few types of pathogens colonizing the respiratory organs, which distinguishes them from aspiration, hospital-acquired, associated with artificial ventilation of the lungs pneumonia, from pneumonia in individuals with immunodeficiency, as well as caused by pathogens of many infectious diseases (plague, measles, chickenpox, etc.). This narrows the spectrum of possible pathogens when prescribing

empirical therapy for community-acquired pneumonia, taking into account the population sensitivity of microorganisms to antibiotics.

RESULTS AND DISCUSSION

For "radiopositive" pneumonia, according to hospitalization data in economically developed countries, the incidence rate is 1.5–3 per 1000 children aged 0–15 years and 3.4–6.8 in children aged 0–5 years. In Uzbekistan, according to hospitalization data, the incidence rate of pneumonia is 5.3 per 1000 children aged 6 months–5 years [1]. A similar level of radiopositive pneumonia is reported in the USA (4.3 per 1000 children aged 0–5 years) [2]. With the expansion of pneumonia criteria in the USA, the incidence rate (per 1000) was 74–92 in children <2 years and 35–52 in children aged 3–6 years [3], which is comparable to the incidence of bronchitis [4].

The incidence rate peaks at the age of 1–3 years; data on higher incidence rates in children aged 0–1 years include newborns with habitual food aspiration, congenital defects, and respiratory syncytial (RS) viral bronchiolitis [9]. Mortality in community-acquired pneumonia in children under 5 years of age in developing countries can exceed 10%, while in economically developed countries it is many times lower, not reaching 1%. Pathogens and their sensitivity to antibiotics. The problem is that an etiological diagnosis of community-acquired pneumonia is possible only when the pathogen is cultured from normally sterile sites (pleural exudate, blood); Neither cultures of discharge from the throat and nose, nor detection of bacterial and viral antigens by enzyme-linked immunosorbent assay (ELISA) and polymerase chain reaction (PCR) are informative due to the high frequency of their carriage. Serological methods have limitations (see below). These obstacles often cause pediatricians to have a nihilistic attitude towards determining the etiology and determine the choice of antibiotic based on its "strength" rather than specificity. In children, community-acquired pneumonia is caused by both "typical" and "atypical" pathogens. The former includes pneumococcus Streptococcus pneumoniae, the dominant pathogen, causing 97% of pneumonia in children under 5 years of age and 50% in older children and adolescents. Among atypical intracellular bacteria, the dominant one is Mycoplasma pneumoniae, which causes 50% or more pneumonias in older children and adolescents [2].

Respiratory viruses are more often detected in children with pneumonia in the first years of life, and their trigger role decreases with age [4]. To what extent is the popular term "viral-bacterial pneumonia" justified? The clinical picture of pneumonia itself depends little on the presence or absence of ARVI, except for catarrhal syndrome and influenza intoxication. A number of authors note the high frequency of pleural effusion in children with mixed infection. Of course, in each case of community-acquired pneumonia, it is appropriate to note the presence of a preceding viral infection, but we, like many other authors, do not use the term "viral-bacterial", since it only confuses the doctor and does not affect the treatment. However, viruses themselves are capable of affecting the lung, this has

become especially obvious during the coronavirus pandemic. "Purely" viral pneumonias are described in influenza, less often in parainfluenza, RS-, adeno-, enterovirus-68- and rhinovirus infections; they can formally be classified as community-acquired. They are characterized by damage mainly to the interstitium and diffuse damage to the alveoli with their edema, fibrin deposition and the formation of hyaline membranes in the absence of alveolar effusion with polynuclear exudate as in bacterial pneumonias, detected on radiographs as an infiltrate [1]. The SARS-CoV-2 virus also affects the capillaries and branches of the pulmonary arteries with the development of thrombosis. During a coronavirus infection, as well as an influenza infection, bacterial pneumonia with an infiltrate on images and computed tomograms (CT) can often develop against the background of interstitial damage, including as a result of a nosocomial infection or artificial ventilation.

CONCLUSION

In light of the identified shortcomings, we believe it is necessary to make adjustments to the curricula and control tests at all levels, with a view to increasing knowledge regarding the causative agents of community-acquired pneumonia (and other common bacterial infections), their resistance and the rational choice of antibiotics.

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CLASSIFICATION OF HERPES VIRUSES, CAUSATIVE INFECTIONS CAUSES AND DIAGNOSIS OF THE DISEASE

Annotation: *In this article, the concept of the herpes virus is informed about the main infections that they cause. Herpes is a disease caused by a virus. It is an inflammatory disease that manifests itself as a rash of small bubbles filled with fluid in the skin and mucous membranes. The purpose of this article is to have a visual record of the herpes virus among the Acholi.*

Keywords: *herpes, pneumonia,pleurisy, ultrasound,diathermy,Epstein-Barr virus, cytomegaloviru.*

Herpes is a disease caused by viruses, in which the skin is reddened in different parts of the body and small blisters form on the pores. The source of the disease is considered a patient or a carrier of viruses and is transmitted to a healthy person when communicating with them. It can occur as a result of colds, colds, intoxication, infectious diseases (flu, pneumonia, etc.). Simple and enveloping herpes is distinguished. Children under one year old with normal herpes practically do not hurt (at the expense of immunity passed from the mother); later, when the immune force is weakened and favorable conditions are created, the disease can occur (yangq.Fly).Oor a b recipient or belt herpes (herpes zoster)HH is triggered by a filtering neurotrophic virus (varicella zoster); it is similar in many of its properties to the chickenpox virus, so this variety of herpes is called caused by the chickenpox virus in the literature. The incubation period of the disease is 7-8 days, can manifest as a complication of an independent or any other disease (pneumonia, pleurisy, etc.). This type of herpes is found only in adults. In this case, vesicles overflow into the hyperemied area along a specific nerve or nerve network of the body, most on one side of the body. Before the rash begins to overflow, the patient becomes numb and his head hurts, there is a numbing pain along the stem of a nerve, as well as a aching of the same places. The peel of the bubbles will be full of solid, clear liquid inside, the liquid will begin to blur. The bubbles are joined together and a row is placed, they are reddened around. The vesicles overflow along the eye, ear, intercostal nerves, as well as the neck, lumbar nerves and nerve network. the area of herpes rash Hurts with severe pulling, blisters crack and form brown black scabies. At 2-3 weeks, the symptoms of the disease disappear, the patient recovers, sometimes bubbles can periodically overflow again. After the rash disappears, muscle paresis" and neuralgia are felt in these places. In the place of blisters, secondary hyperpigmented spots remain,

and in their severe forms, scarring or atrophic changes. It can also heal on its own when the disease is mild. When the enveloping herpes is more severe, the patient should be treated under the supervision of a doctor, lying in place as much as possible. Depending on the age of the patient, autogemotherapy, gammaglobulin, antibiotics, vitamins, physiotherapy (ultrasound, diathermy, etc.) and local treatments (ointments) are prescribed. To prevent herpes, it is necessary to chin the body, dress according to the season (not to drown or overheat), follow the rules of personal hygiene.

Classification of herpes

Although there are many types of virus, a total of eight types are distinguished:

HSV type 1-the gum manifests itself in the mouth and lip. First inflammation and redness appear, then blisters with fluid inside. For a week, discomfort and aching are observed at the place of blisters. Sometimes the patient's temperature rises. It is the most common type of herpes and relaxes during cooling or colds.

HSV type 2-the soot manifests itself in the genitals. It is also known as genital herpes. The Virus is transmitted through sexual contact. There are primary and secondary genital herpes:

- Primary-the first manifestation of herpes after transmission
- Secondary-recurrence of the disease, repeated throughout the year.

Herpes on the body (type 3) is a enveloping iron. Causes chickenpox in children. In adults under 35 years of age, it negatively affects the nervous system, especially the tissues of the skull and spinal cord. A series of vesicles appear in the body where large nerves pass and seem to surround the body, from which the name derives. The mucous membranes are almost never damaged by this type of virus. Signs of this type of herpes are: headache, fever, aching, itching.

HSV type 4 (Epstein-Barr virus) is a form of sore throat (angina) in which the lymph nodes are larger than normal. Symptoms: sore throat, feeling unwell, dizziness. For seven days, a high temperature is maintained, and bubbles full of fluid appear in the tonsils.

HSV type 5 (cytomegalovirus). It manifests itself in two ways: symptoms are not observed at all, or the disease affects the central nervous system and organs. This type of virus is transmitted sexually or in everyday life. This virus can be transmitted to the baby from the mother, as well as through breastfeeding.

HSV type 6. Because of this type of virus, lymphoma, lymphosarcoma, hemocytoblastoma develop.

Chronic fatigue syndrome occurs due to HSV type 7. It may appear in childhood, but not manifest itself until the immune system deteriorates. Lymphocytes are often present in normal amounts, but they cannot perform their function normally due to the actions of the virus. Because of this, chronic fatigue develops. Over time, more serious problems of the nervous system can arise: memory and intelligence disorders, depression.

Tip 8 HSV. Diagnosis can only be made by PCR testing. This type of virus is found only in the tissues of the prostate gland and the urinary-venous system.

Causes of herpes

Transmission of the virus occurs through the patient's biofuels. It can also be infected by touching the damaged part of the skin.

Risk factors:

- failure to follow hygiene;
- get into sex with strangers;
- excessive cooling or overheating of the body;
- how to kiss a man with a common herpes virus;;
- how to use the toilet in public places;
- living in underdeveloped states;
- low social/economic level.

At moderate humidity levels and moderate temperatures, the common herpes virus can live outside the human body for 24 hours. At + 52 °C and above, it dies after 30 minutes, while at temperatures up to -70 °C it lives up to 5 days. Lives on metal for about 2 hours.

Diagnostics

- A typical herpes virus is diagnosed depending on the clinical picture. If the examination reveals a rash on the external genitals, the disease is compared with syphilis (poison). The following laboratory methods are recommended when diagnosing:
- virological;
- PCR test;
- the immune status is assessed;
- cytomorphological;
- using immunoferment analysis, the antitanours of the precipitate are determined.

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EPIDIMIOLOGY AND PATHOPHYSIOLOGY OF ADRENOCORTICAL CANCER IN CHILDREN

Annotation: *Adrenocortical cancer in children is a malignant tumor that develops from cells of the adrenal cortex. The main cause of the disease is considered to be the Lee-Fraumeni syndrome and other hereditary pathologies. Manifestations of a hormone-active tumor: Cushing's syndrome, virilization, estrogen-genital syndrome. Hormone-inactive neoplasms occur without clinical symptoms. Ultrasound, MSCT and MRI of the adrenal glands, hormone tests, histological and immunohistochemical studies are used for diagnosis. Treatment includes adrenalectomy to remove the primary tumor, excision of regional lymph nodes, and adjuvant chemotherapy.*

Key words: *Adrenocortical cancer, hormone, lymph nodes.*

Cancer of the adrenal cortex, or adrenocortical cancer (ACR), belongs to the group of orphan diseases in the Russian Federation. It occurs with a frequency of 1 case per 1 million population, and girls are 2.5 times more likely to get sick than boys. The peak diagnosis of pathology occurs in the first decade of a child's life. Despite its rarity, the disease does not lose its relevance in practical pediatric oncology and endocrinology. Adrenocortical cancer in children is characterized by rapid progression and an unfavorable prognosis, so it requires improvement of early diagnosis and treatment methods.

Adrenocortical cancer in children is associated with hereditary syndromes. About 50-80% of all cases of cancer pathology develop against the background of Lee-Fraumeni syndrome, which is caused by a mutation in TP53, a gene responsible for inhibiting tumor growth. Pathology is manifested by sarcomas, blood cancer, neoplasms of the brain, mammary glands and adrenal glands. Most often, this problem occurs in children in Brazil, where 0.3% of people are carriers of the mutation.

The proportion of other hereditary syndromes in the etiological structure of cancer pathology does not exceed 1%. Familial adenomatous polyposis (Gardner's syndrome), neurofibromatosis, Carney complex, Beckwith-Wiedemann syndrome can contribute to cancer development. The remaining cases of adrenocortical cancer are due to spontaneous de novo mutations that occur for no apparent reason.

Pathogenesis

The tumor process (carcinogenesis) in ACR is caused by driver gene mutations that activate various signaling pathways and affect cell growth and

differentiation. Gene sequencing disorders occur in cells of the adrenal cortex, which begin to divide uncontrollably and become poorly differentiated or undifferentiated. The tumor can affect any part of the cortex: the glomerular, bundle or reticular layer.

Adrenocortical cancer is characterized by a large size of the primary focus- an average of about 10 cm, but isolated cases of tumors up to 25 cm in diameter have been described. In addition to affecting the hormonal background and general cancer symptoms, the disease is accompanied by compression of the surrounding tissues. AKR is characterized by kidney dysfunction on the affected side, compression of the stomach and intestines, which causes intestinal obstruction.

Classification

Staging of adrenocortical cancer is crucial in pediatric oncology for determining treatment tactics and long-term prognosis. At the present stage, the standard classification according to the TNM system is used, which is approved by the American and European Committees for Cancer Research. There are 4 stages of ACRE development:

- Stage 1 . Corresponds to a primary adrenal tumor up to 5 cm in diameter without signs of metastasis.
- Stage 2. It is diagnosed with adrenocortical cancer larger than 5 cm, which is not accompanied by local or distant spread.
- Stage 3. It is determined with various sizes of neoplasms and metastatic lesions of the lymph nodes or signs of invasion of malignant tissue in neighboring organs.
- Stage 4. It is established in the presence of at least one distant metastasis, regardless of the characteristics of the primary tumor focus and the degree of damage to the lymph nodes.

In pediatrics, about 55% of hormone-active tumors manifest as viril syndrome. In girls, it is manifested by abundant growth of body hair in the male type, hypertrophy of the clitoris, a decrease in the timbre of the voice, an increase in muscle mass. Thickening and increased greasiness of the skin can cause acne. Adolescent girls have amenorrhea or irregular menstruation. In boys, virilization is manifested by suppression of testicular function.

In 10-15% of patients, adrenocortical cancer causes isolated cortisol overproduction and typical Itsenko-Cushing syndrome. It is characterized by a moon-shaped face, a central type of obesity with relatively thin limbs, atrophy of the skin and the appearance of purple stretch marks on it. In children, growth slows down, the rate of puberty is disrupted. 30% of patients have a combination of virilization and kushingoid symptoms.

A rare manifestation of adrenocortical cancer in children is estrogen-genital syndrome. In girls, it causes premature puberty: the appearance of pubic hair, enlargement of the mammary glands, changes in the proportions of the figure, early menarche. In boys, hyperestrogenia is characterized

by gynecomastia, underdevelopment of the external genitalia, and female-type fat deposits. Also, isolated cases of manifestation in the form of primary aldosteronism are known in ACR.

Hormone-inactive adrenocortical neoplasms are rare in pediatric practice. In the early stages, they are asymptomatic. Clinical manifestations occur with the progression of the tumor process and are characterized by non-specificity: increased fatigue, decreased appetite, nausea, weight loss, prolonged subfebrility. With large neoplasms, pain in the upper abdomen and lower back is bothered.

Complications

In 87-95% of cases, children have hormone-active neoplasms of the adrenal glands, which are accompanied by undesirable body changes, sexual development disorders, and growth retardation. Pediatric patients are characterized by rapid progression of the disease, early appearance of regional metastases and distant foci in the liver, lungs, bones, and brain. The relapse rate after treatment is 80-85%.

The 5-year survival rate for adrenocortical cancer, which is limited to the adrenal gland, is 60-80%. With the spread of the tumor to neighboring tissues, the prognosis of survival decreases to 30-50%, with distant metastasis-it does not exceed 28%. When progressing, ACR causes cancer cachexia syndrome, secondary immunodeficiency, multiple organ failure, thrombosis, and thromboembolism.

Diagnostics

In case of viril and/or kushingoid syndrome, consultation with a pediatric endocrinologist is indicated, and if a tumor is detected and cancer is suspected, the examination continues with a pediatric oncologist. During physical examination, signs of hormonal disorders are determined, palpation of the abdomen is performed to detect large tumors, and the correspondence of physical and sexual development to the patient's age is assessed. The following methods are used to diagnose ACR in children:

- Ultrasound of the adrenal glands. Normally, the adrenal glands are not detected during echosonography. An enlarged adrenal gland, the appearance of inhomogeneous hyperechoic formation, and signs of calcification are indirect criteria for cancer diagnosis. Additionally, ultrasound of the abdominal cavity and retroperitoneal space is performed to visualize regional lymph nodes.
- CT scan of the adrenal glands. Multispiral computed tomography (MSCT) is the "gold standard" for the diagnosis of adrenocortical cancer in children. It is used to determine the size and location of the tumor, the degree of its invasion into surrounding structures, and the density of tissues. The tumor is characterized by a high native density (over 40 HU) and its slow decrease in the delayed phase of contrast.

- Additional visualization methods. If there are contraindications to CT, MRI of the adrenal glands is used, which does not require radiation exposure to the child's body. For clarifying diagnostics, positron emission tomography (PET) is used, which has a specificity of 92% and sensitivity of 98.5%. PET is especially informative in relapses and metastasis.
- Study of biopsies. When examining biomaterial obtained during surgery, a high nuclear index is determined, more than 5 mitoses per 50 fields of vision, less than 25% of cells with light cytoplasm, and areas of necrosis. These criteria are used to assess the malignant potential on the Weiss scale. Additionally, an immunohistochemical examination of the tissue is performed.
- Hormonal studies. To assess the hormonal activity of the tumor, tests are performed for cortisol, aldosterone, estrogen, testosterone, and dehydroepiandrosterone sulfate. To clarify the nature of kushingoid syndrome, a study is shown for ACTH, which is produced in the pituitary gland and in adrenocortical cancer will be reduced due to the negative feedback mechanism.
- Genetic counseling. Given the high frequency of a combination of ACR and hereditary syndromes, children need to be examined by a geneticist. In addition to collecting a family history and physical examination, if there are alarming clinical signs, testing for a mutation in the TP53 gene is indicated.

Differential diagnosis

Adrenocortical cancer is differentiated with other types of adrenal tumors: adrenocortical adenoma, genital stroma tumor, schwannoma, hematolymphoid tumor. It is also necessary to exclude hormone-inactive incidentalomas: fibroids, lipomas, nonparasitic cysts. The circle of diagnostic search in children includes adrenogenital syndrome, Itsenko-Cushing's disease, complications after treatment with glucocorticoid hormones.

Radical surgery is recommended for patients with stages 1-3 of adrenal cancer. This is the most effective method of treatment, which allows achieving stable remission and improving the long-term survival of patients. The operation is performed as soon as possible after diagnosis and includes adrenalectomy within healthy tissues, lymph dissection in the aortocaval zone and in the area of the renal gate, and performing thrombectomies.

In most children, surgical treatment is performed by the classical method-by laparotomy. Laparoscopic adrenalectomy is possible only in the early stages of the disease, if the size of the focus does not exceed 6 cm, there are no signs of tumor invasion. The advantages of the method include low injury rate, good cosmetic results and rapid rehabilitation, but laparoscopy has an increased risk of dissemination of malignant cells along the peritoneum.

Conservative therapy

Adjuvant treatment is prescribed to destroy residual tumor cells after surgery, reduce the risk of recurrence and the formation of metastases. In adrenocortical cancer, special cytotoxic agents are used that inhibit the synthesis of hormones of the adrenal cortex. In case of inoperable cancer or distant metastases, polychemotherapy is prescribed according to an individually selected scheme, remote radiation therapy.

Prognosis and prevention

In modern oncology, various methods of treating ACR have been developed that show good results in the early stages, so the long-term outcome depends on the timely diagnosis of the disease. The weighted average 5-year survival rate of patients is 50%. Prevention of adrenocortical cancer involves cancer awareness in children with hereditary diseases, in-depth examination of patients with signs of hormonal dysfunction of the adrenal glands.

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PATHOPHYFIOLOGY AND ETIOLOGY OF ADENOTONSILLITIS IN CHILDREN

Annotation: *Adenotonsillitis in children is a combined inflammation of the pharyngeal and palatine tonsils, which is acute or chronic. The disease occurs under the influence of pathogenic viruses and bacteria in the presence of risk factors: decreased immune defense, allergies, and inflammatory processes in the oral cavity. The main symptoms of adenotonsillitis are difficulty in nasal breathing, nasal voice, snoring at night, sore throat and paroxysmal cough. Diagnosis includes rhinoscopy, pharyngoscopy, and bacteriological examination of smears. Treatment is carried out conservatively (antibiotics, tonsillectomy, physiotherapy), if it is ineffective, removal of tonsils is indicated.*

Key words: *adenotonsillitis, antibiotics, tonsillectomy, physiotherapy.*

Specialists in practical pediatrics and pediatric otorhinolaryngology regularly face the problem of adenotonsillitis in children. The true prevalence of the problem has not been established, since the term "adenotonsillitis" itself is not widely used when making a diagnosis. Often, the patient's chart indicates the predominant problem – tonsillitis or adenoids, sometimes both diagnoses at once. According to various sources, the frequency of adenotonsillitis is 10-63%, and the disease occupies at least a quarter of cases of all inflammatory processes in the ENT organs in children.

There are no specific pathogens of adenotonsillitis in children, so in practical medicine, disputes about the main etiological factors do not subside. A number of authors put viral infection in the first place: representatives of SARS, entero-Epstein-Barr virus. Other specialists prefer bacterial flora: staphylococci (21-75%), hemophilic bacillus (5-66.7%), pneumococci (18-50%). Microbial associations are often identified.

The most important role in the development of the disease is played by predisposing conditions that promote the reproduction of microorganisms and colonization of the mucous membranes. The risk of adenotonsillitis in children increases significantly under the influence of the following risk factors:

- Frequent acute respiratory viral infections. In the group of frequently ill children who suffer more than 4 episodes of colds per year, the prevalence of pathology reaches 43%, which is 2 times higher than the average in the population.
- Female gender. Data from various scientific studies show a predominance of girls over boys in the ratio from 1.5: 1 to 2.6:1. The increased

frequency of chronic adenotonsillitis in adolescent girls is explained by the effects of estrogens and a tendency to hyperimmune conditions.

- Allergic reactions. About 20-30% of pediatric patients with allergies have enlarged tonsils, a tendency to infectious and inflammatory diseases of the lymphoid tissue and concomitant disorders of nasal breathing.
- Dental diseases. Carious teeth, stomatitis and other inflammatory processes serve as a constant source of infection that spreads to the tonsils, disrupts the functions of local immunity in the oral cavity.
- Exogenous factors. Hypothermia, increased physical and mental stress, and severe stress are triggers for a decrease in the body's defenses and the development of inflammatory processes, including adenotonsillitis in children. The likelihood of the disease increases with hypovitaminosis, unbalanced nutrition.

Pathogenesis

The tonsils belong to the NALT system, a lymphoid tissue associated with the nasopharynx, which is one of the components of the extensive MALT system. They serve as a barrier against pathogenic microorganisms entering the respiratory tract and provide a zone of primary interaction with foreign influences. The main function of immunocompetent cells is the formation of different classes of antibodies that respond to the action of various antigens.

Combined inflammation of lymphoid formations in the upper respiratory tract is a typical situation for children. Young patients have immaturity of the immune system, primarily its local link and the production of secretory IgA, which contributes to the rapid occurrence and generalization of inflammation. The action of microbial antigens causes a standard immune response in different structures of the Pirogov-Waldeyer lymphoepithelial ring.

In most cases, the main manifestation of the disease is frequent colds, which occur with a runny nose, nasal congestion, sore throat and a superficial cough. A distinctive sign of the defeat of the tonsils is an intense sore throat, which increases when swallowing, talking. However, in young children, it is difficult to distinguish between typical acute respiratory infections and adenotonsillitis, since they are not able to clearly describe their complaints.

The disease is accompanied by general and local signs of inflammation. When examining a child's throat, parents may notice redness, swelling, pustules, or plaque on the tonsils. The general symptoms of adenotonsillitis are caused by intoxication syndrome and include fever, lack of appetite, weakness and malaise. Some children complain of headaches and muscle aches. Irritability, emotional instability, and tearfulness are also characteristic.

Adenotonsillitis in children is accompanied by hypertrophy of the palatine tonsils, which causes difficulty breathing and swallowing, reflex coughing, and loud snoring. An increase in adenoids is manifested by nasal breathing disorders, which is why the child constantly walks with his mouth slightly

open. Over time, an "adenoid" puffy face with smooth nasolabial folds is formed. Nasal congestion causes a nasal voice, difficulties in pronouncing consonant nasal sounds.

Complications

One of the most dangerous complications of adenotonsillitis is obstructive sleep apnea (OSA), which occurs due to the airway being blocked by enlarged tonsils. Every night, the child has many short-term respiratory stops, which cause oxygen starvation and problems in the work of the cardiovascular system. Frequent half-awakenings do not allow you to fully rest, they cause constant daytime sleepiness.

When mucosal secretions enter the oropharynx and laryngopharynx, a syndrome of postnasal congestion is formed, which is characterized by a painful paroxysmal cough. Most often, it occurs at night, and in the morning immediately after waking up, because mucus is easier to get into the throat in a horizontal position of the body. The inflammatory process in the lymphoid structures of the pharynx often spreads to neighboring ENT organs and is accompanied by rhinitis, sinusitis, and otitis media.

Adenotonsillitis in children is a serious danger due to the development of chronic hypoxia. Lack of oxygen in the brain causes blood flow disorders, disorders of neuropsychiatric functions, and difficulties in performing intellectual tasks. Many patients with chronic inflammatory processes in the tonsils face memory loss, inability to concentrate for a long time, and slow thinking.

Diagnostics

Examination of a child with suspected adenotonsillitis is performed by a pediatrician or a pediatric ENT doctor. When collecting anamnesis, special attention is paid to the frequency of acute respiratory infections, the presence of allergic diseases. Diagnosis based on physical signs is difficult, especially in young patients, which is explained by age-related nuances of the nasopharynx and oropharynx structure. Instrumental and laboratory research methods, such as::

- Rhinoscopy. Examination of the nasal cavity with special instruments is the main way to detect enlarged and inflamed tonsils that indicate the presence of adenotonsillitis. Anterior rhinoscopy is performed in children of any age, posterior-in the older age group. At the present stage of otorhinolaryngology, nasal endoscopy is used as the most informative method.
- Pharyngoscopy. The study is necessary to visualize edematous palatine tonsils that protrude beyond the edges of the arches. Lymphoid structures have a bright pink color and a loosened surface. With a bacterial cause of adenotonsillitis, liquid pus or caseous-purulent plugs in the lacunae are determined. Thickening and hyperemia of the anterior edges of the palato-lingual arches is also characteristic.
- Additional instrumental methods. To exclude complications from ENT organs, radiography of the paranasal sinuses, otoscopy, and dental

examination are prescribed. Since tonsillitis is often complicated by cardiological pathology, children perform an ECG. If a lesion of the lower respiratory tract is suspected, an X-ray of the chest organs is performed.

- Laboratory diagnostics. To clarify the cause of inflammation, a bacteriological culture of discharge from the surface of the tonsils, a pharyngeal smear for BL (diphtheria) is prescribed. To assess the general condition of the child and the severity of the disease, perform a clinical blood test, a general urinalysis, and a biochemical blood test.

Differential diagnosis

Adenotonsillitis has similar clinical symptoms with infectious mononucleosis, neoplasms of the tonsils, pharyngomycosis, and pharyngeal tumors. The criteria for differential diagnosis are signs of active inflammation, bilateral nature of the lesion, moderate enlargement of the cervical lymph nodes. If catarrhal inflammation and edema predominate, allergic rhinitis and rhinosinusitis should be excluded.

In the period of exacerbation of the disease, the patient needs a half-bed regime with limited physical activity, a gentle diet, and a plentiful warm drink. With the bacterial nature of the disease, antibiotics are prescribed, which are selected empirically and dosed according to the weight of the child. To eliminate the symptoms of adenotonsillitis, antipyretics and painkillers are used. To improve breathing, vasoconstrictor nasal drops are prescribed in short courses.

To clear the focus of inflammation from the accumulation of mucopurulent secretions and pathological microorganisms, hydrovacuum washing of the tonsils, nasal shower, gargling is indicated. In addition to standard medical therapy for chronic forms of adenotonsillitis in children, physiotherapy is used. Ultraviolet radiation, UHF, ultrasound therapy, and magnetic field therapy demonstrate a good effect.

Surgical treatment

Surgical interventions are performed when conservative tactics are ineffective, palatine tonsils and adenoids are significantly enlarged in children, and there are signs of complications (OSA, persistent nasal congestion, frequent otitis media and sinusitis). The main types of surgery are tonsillectomy and adenotomy. In pediatric practice, minimally invasive techniques for removing tonsils using laser energy, radiofrequency ablation, and diathermocoagulation are widely used.

Prognosis and prevention

With timely diagnosis and selection of therapy, it is possible to completely cure acute adenotonsillitis, prevent relapses of the chronic form of the disease. Gentle methods of surgical treatment make it possible to cope with advanced cases without significant tissue injury, bleeding and complex rehabilitation. Prevention of the disease involves strengthening the immune system, timely vaccination, and elimination of modifiable risk factors.

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BEL UMURTQALARI DISK CHURRALARI QAYTALANISHINING XAVF OMILLARI

Annotatsiya. *Bel umurtqa disk churrasini jarrohlik aralashuvidan keyin qaytalashi keng tarqalgan muammo bo‘lib, bu sog‘liqni saqlash sohasida dolzarb muammolardan biridir. Tadqiqotlar shuni ko‘rsatadiki, qaytalash xavfi yuqori bo‘lgan bemorlarda yosh va jinsiy farqlar, anatomik o‘zgarishlar, hayot tarzi omillari, va TMI asosiy omillar sifatida namoyon bo‘ladi. Shu bilan birga, qandli diabet va sigaret chekish kabi surunkali kasalliklar ham disk churrasining qaytalash ehtimolini oshirishi mumkin.*

Kalit so‘zlar: *qaytalangan disk churra, xavfli omil, bel og‘riq, operatsiya, nogironlik, bel umurtqasi, churra turi, nerv qisilishi, tana massasi indeksi.*

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RISK FACTORS FOR RECURRENCE OF LUMBAR DISC HERNIATION

Annotation: Recurrent lumbar disc herniation after surgical intervention is a prevalent issue, posing a significant challenge in healthcare. Studies indicate that patients with a higher risk of recurrence often present with demographic

factors (age, sex differences), anatomical variations, lifestyle factors, and BMI as primary risk factors. Additionally, chronic conditions such as diabetes and smoking further elevate the likelihood of recurrence. A comprehensive assessment and personalized treatment plans are essential to improve patient outcomes, minimize chronic disability, and prevent recurrence.

Keywords: recurrent disc herniation, risk factor, lower back pain, surgery, disability, lumbar spine, herniation type, nerve compression, body mass index.

Mavzuning dolzarbligi - Bel umurtqalari disk churra kasalligi dunyo miqyosda keng tarqalgan bo‘lib, u bel va oyoq og‘riqlariga sabab bo‘ladi [1-2]. Ushbu kasallikni jarrohlik usuli bilan davolash keng qo‘llaniladi [1-2, 2-1]. Biroq, jarrohlik aralashuvidan keyin ham churra kasalligi qaytalash ehtimoli mavjud [2-1, 3-2]. Qaytalanish ko‘rsatkichi o‘rtacha 5-15% ni tashkil qiladi [4-8, 2-1] Qaytalangan disk churrasi umurtqa pog‘onasining asosiy og‘riqlari va nogironlikning asosiy sabablaridan biri hisoblanadi [6-3, 5-1]. Tadqiqotlarning ko‘rsatishicha, disk churra kasalligining qaytalashiga sabab bo‘luvchi ko‘p taxmin qilingan xavf omillari haqida xabar berilgan bo‘lib, ular orasida yosh, jins, tana massasi indeksi, (TMI), chekish, churra turi, qandli diabet va churra darajasi muhim rol o‘ynaydi [8,9,10,11,12]. Bu omillarni sinchiklab o‘rganish, kasallikning rivojlanish omillarini to‘g‘ri anglash, qaytalangan disk churralari bilan og‘rigan bemorlarda samarali davolash strategiyalarini ishlab chiqish va nogironlikni oldini olishda muhim ahamiyatga ega. [7-2, 5-1, 9,10].

Tadqiqot maqsadi. Ushbu maqolaning maqsadi bel umurtqalari disk churrasining qaytalashiga sabab bo‘luvchi xavf omillarini tizimli ravishda o‘rganish va tahlil qilishdir.

Tadqiqot usullari va materiallari. Mazkur retrospektiv tadqiqotda 2023-yil yanvaridan 2024-yil yanvarigacha Andijon davlat tibbiyot instituti klinikalarining neyroxirurgiya bo‘limida umurtqa pog‘onasi disk churrasi bo‘yicha operatsiya o‘tkazilgan, jami 288 bemordan 34 nafarida (11.8%) qayta churra chiqishi qayd etilgan. Tadqiqotning birinchi guruhiga qayta churra chiqishi holatlari mavjud bo‘lgan bemorlar kiritilgan bo‘lib, ularda operatsiyadan keyin o‘sha tomonda disk churrasini uchrashi 18 oydan oldin kuzatilgan. Ikkinchi guruhga esa operatsiyadan keyin 18 oydan oshiq vaqt davomida qayta churra chiqishi holati kuzatilmagan bemorlar kiritilgan. Bemorlar turli xil shifoxonalarda operatsiya qilingan, lekin tadqiqotda jarrohlik texnikasi hisobga olinmagan. Operatsiyadan keyingi bemorlarda doimiy yoki qayta paydo bo‘lgan oyoq og‘rig‘i kuzatilganda magnit-rezonans tomografiya (MRT) tavsiya etilgan. Klinik ahamiyatli qayta qaytalangan disk churrasi radiolog tomonidan tasdiqlangan, umurtqa pog‘onasida disk churrasi bo‘lib, oyoq og‘rig‘ini keltirib chiqaruvchi, nerv to‘qimasining siqilishi, bosim yoki siljishiga sabab bo‘lgan diska materialining o‘sha yoki qarama-qarshi tomon va turli darajada qayta disk churrasi chiqishi deb aniqlangan. Barcha bemorlarning tibbiy ko‘rsatkichlari (yosh, jins, tana massasi indeksi (TMI) disk churrasi joylashishi va darajasi

bo‘yicha baholangan. Bundan tashqari, barcha bemorlarda qayta disk churrasi chiqish ehtimolini oshirishi mumkin bo‘lgan boshqa kasalliklar (masalan, chekish yoki qandli diabet) mavjudligi bo‘yicha ham baholangan.

Tadqiqot natijalari va ularni baholash. Olingan natijalar quyidagicha bo‘ldi: 1-guruh 13 ta (38.2%), 2-guruh 21 ta (61.8%), yosh jihatdan 20-40 yosh 16 ta (47.1%), 40-60 yosh 13 ta (38.2%) 60 yoshdan kattalar 5 ta (14.7%) jins jihatdan erkaklar 23 ta (67.6%), ayollar 11 ta (32.4%), TMI bo‘yicha 18.5-24.9 gacha 12 ta (35.3%), 25-29.9 gacha 9 ta (26.5%), 30 dan yuqori 13 ta (38.25), joylashuviga ko‘ra VL2-L3 1 ta (2.9%), VL3-L4 4 ta (11.8%), VL4-L5 18 ta (52.9%), VL5-S1 11 ta (32.4%), chekuvchilar 8 ta (23.5%), qandli diabeti bor bemorlar 6 ta (17.6%) ni tashkil etdi. Xulosa. Disk churra kasalligining qaytalashiga sabab bo‘luvchi xavf omillari keng ko‘lamli va ko‘p qirrali bo‘lib, ular orasida genetik omillar, hayot tarzi, kasbi, yosh, jinsi, anatomik xususiyatlar, hamroh kasalliklari, chekish, va avvalgi jarrohlikning sifati muhim rol o‘ynaydi. Shuning uchun kasallikni qaytalash ehtimolini kamaytirish uchun har bir bemorning xavf omillarini kompleks ravishda baholash va individual yondashuvlarni ishlab chiqish zarur.

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ETIOPATHOGENESIS AND TREATMENT OF DRESS-SYNDROME

Annotation: *The term "DRESS-syndrome "(drug-induced reaction with eosinophilia and systemic symptoms) appeared in therapeutic practice relatively recently – in 1996. However, anticonvulsant hypersensitivity syndrome, including exfoliative dermatitis, fever and eosinophilia, has been known since 1938. The abbreviation DIHS (drug-induced hypersensitivity)is also found in the literature. Currently, the prevalence of DRESS syndrome is estimated in the range of 1:3000-1: 10000 people, cases of the disease are noted in persons from 3 to 84 years old. Mortality in DRESS syndrome is 10-20%, which is due to both late diagnosis and severe multi-organ lesions.*

Key words: *DRESS-syndrome, drug, blood, ibuprofen, diclofenac, naproxen.*

Reasons

Three mechanisms are involved in the etiopathogenesis of DRESS syndrome: genetic predisposition, viral infections, and drug sensitivity. The first mechanism is associated with a specific HLA genotype-the carrier of the B1502, B1508, B5701, and B5801 alleles.

The second factor of DRESS syndrome is infectious antigens. Recent studies have shown that the triggers that trigger the manifestation of the disease can be some viruses, in particular herpesgroup viruses (6 and 7 types), Epstein-Barr, cytomegalovirus.

Also, in the induction of DRESS syndrome in individuals with a genetic predisposition and latent infection, it is important to take the following groups of medications::

- Anthoconvulsants: phenytoin, phenobarbital, lamotrigine, carbamazepine;
- antibiotics: sulfonamides, cephalosporins, penicillins, azalides, fluoroquinolones;
- anti-TB drugs: isoniazid, streptomycin, ethambutol, rifampicin;
- antirheumatic drugs: gold preparations, hydroxychloroquine, sulfasalazine;
- anti-gout: allopurinol;
- antiarrhythmic drugs: amiodarone, mexiletine;
- anti-retroviral drugs: abacavir, tenofovir, neviparin;
- anticoagulants: enoxaparin sodium, acenocoumarol;
- NSAIDs: ibuprofen, diclofenac, naproxen, etc.

The list of medications associated with DRESS syndrome is constantly expanding.

Pathogenesis

The mechanism of pathology occurrence is considered from the point of view of three theories. Proponents of the" viral " hypothesis regard DRESS-syndrome as a consequence of hyperactivation of antiviral immunity. According to this point of view, medication is accompanied by immunosuppression, which contributes to the activation of T-lymphocytes and reactivation of dormant infection. Viral replication stimulates cellular immunity, which leads to a massive release of cytokines (cytokine storm) and damage to various organs. This theory explains why clinical manifestations progress even after drug withdrawal.

Autoimmune theory is based on the phenomenon of molecular mimicry. Reactivation of a viral infection causes an increase in the number of T-lymphocytes. At the same time, activated T-cytotoxic lymphocytes cross-react not only with viral antigens, but also with the body's own tissues that are similar in structure, causing their damage.

The synthetic theory of DRESS syndrome pathogenesis is based on a combination of two mechanisms: activation of the antiviral response and drug-induced autoimmune response. Since the disease develops in a limited number of people when prescribing certain drugs, it seems that genetic factors are important.

Clinical manifestations of DRESS syndrome usually occur 3-8 weeks after the initial appointment of drug therapy (or 2 weeks after repeated drug administration). In some cases, it takes from a few days to six months from the start of taking medication. Often, the onset of an acute systemic reaction is preceded by acute respiratory viral infection.

The first symptom is febrile fever with temperature fluctuations from 38° to 40°C. On the background of febrile syndrome, there are bark-like maculopapular rashes on the skin. There may be swelling of the eyelids and face. Elements of the rash are initially localized on the face and upper body, then spread to the lower extremities. With continued use of drugs, the skin syndrome often takes the form of erythema multiforme, erythroderma, and exfoliative dermatitis.

Also, pathognomonic signs of DRESS syndrome include lymphadenopathy of different groups of lymph nodes (70%), bilateral enlargement of the parotid salivary glands. Concomitant symptoms include dry mouth, conjunctivitis, myositis, and arthralgia.

For DRESS-syndrome, involvement of internal organs in the pathological process is typical. Severe hepatitis with or without jaundice (50-60%), splenomegaly, interstitial nephritis, and eosinophilic pneumonia often develop. Possible disorders of the central nervous system include meningitis, encephalitis, convulsions, from the CVS – eosinophilic myocarditis, pericarditis, granulomatous-necrotizing angiitis. It is characterized by the persistence and even

progression of symptoms after the withdrawal of a causally significant pharmaceutical product.

Complications

In patients who have had DRESS-syndrome, an increased frequency of autoimmune pathologies was later noted. Cases of type 1 diabetes mellitus and systemic scleroderma are described. Complicated forms of DRESS syndrome are associated with the development of severe multiple organ dysfunction. An unfavorable prognosis is associated with acute renal failure, liver failure, respiratory distress syndrome, and brain edema. The mortality rate from multiple organ lesions reaches 20%.

Diagnostics

Difficulties in recognizing DRESS syndrome are related to its similarity to infectious diseases. This fact forces the primary care physician to resort to prescribing antibacterial drugs, which further aggravates drug hypersensitivity and aggravates the patient's condition. In the diagnosis of the disease, along with the therapist, the participation of an immunologist is necessary.

To confirm the DRESS syndrome, the RegiSCAR scale is proposed, according to which the absence of each criterion is estimated at 0 points, and the presence – at 1 point. These criteria include: fever, maculopapular rash, lymphadenopathy, eosinophilia, leukocytosis, facial swelling, and systemic lesions (liver, kidneys, lungs, brain, and heart). If the total score is >5, the DRESS syndrome is confirmed, and <2 is excluded.

Laboratory and instrumental methods are used to objectify clinical data:

- A hemogram. Changes recorded in the general blood count are represented by leukocytosis (>11x10 ^ 9/l), the presence of atypical mononuclears (>5%), eosinophilia (>1.5 x 10^9/L, characteristic of 95% of patients. Leukemoid reactions may occur.
- Blood biochemistry. It is performed to identify markers of internal organ damage. The level of ALT, alkaline phosphatase, bilirubin, creatinine, urea, and CRP is measured, and the blood gas composition is evaluated.
- Virological research. Determine antibodies to HIV, viral hepatitis B and C. Reactivation of herpes virus infection is confirmed by PCR test or detection of serum immunoglobulins G.
- Application test Skin samples. It is used to identify the drug that caused a delayed hypersensitivity reaction. The patch test is performed on the skin of the back. Results are recorded after 48, 72, and 96 hours.
- Skin biopsy. Skin sampling is more often used as part of differential diagnosis. Histological changes in DRESS syndrome are non-specific, usually represented by lymphocytic and eosinophilic infiltration of the upper layers of the dermis, the presence of atypical lymphocytes.
- Instrumental diagnostics. Additional studies are used for signs of internal organ dysfunction. In this case, ultrasound of the liver and kidneys, X-ray and CT of the lungs, ECG, etc. can be performed.

In the early phase of DRESS-syndrome, diseases that occur with fever and skin lesions are excluded, in the advanced stage – pathologies characterized by eosinophilia and multiple organ disorders. The range of diseases with which difdiagnosis is performed is quite wide:

- infectious pathologies: measles, mononucleosis, rubella, enterovirus, adenovirus, herpetic infection of type 6 and 7, cytomegalovirus and parvovirus infection, HIV, etc.;
- skin syndromes: erythema multiforme, drug-induced erythroderma, exanthematous pustulosis, Stevens-Johnson syndrome;
- systemic immune responses: serum sickness, graft - versus-host response;
- Eosinophilia: idiopathic hypereosinophilic syndrome, Charg-Strauss syndrome;
- hemoblastosis: lymphoma.

Treatment of DRESS syndrome

The first step in the treatment of drug hypersensitivity is to cancel the drug that provoked its debut. The next algorithm involves the following steps::

- Systemic corticosteroids glucocorticosteroids. they are the main line of treatment. In the case of DRESS syndrome, they can achieve rapid clinical improvement, normalize laboratory parameters, prevent organ damage, and reduce the risk of autoimmune reactions.
- Applying reserve methods. If corticosteroids are not effective enough, intravenous infusions of human normal immunoglobulin, immunosuppressants, and plasmapheresis are added to the treatment. If there are signs of activation of a viral infection, antiviral therapy is indicated.

Prognosis and prevention

The prognosis for DRESS syndrome varies from complete recovery to death. Even if the trigger drug is discontinued, the disease can progress and recur. With repeated administration of this drug, severe life-threatening complications may develop. The most severe course and higher mortality risks are observed in the elderly. Prevention of DRESS-syndrome is the appointment of drugs for strict indications, if necessary - conducting preliminary skin allergological testing.

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ANALYSIS OF THE MOST EFFECTIVE METHODS OF TREATMENT OF ADENOVIRUS PNEUMONIA

Annotation: *Adenovirus pneumonia is a focal or interstitial inflammation of the lower respiratory tract caused by adenoviruses. It is accompanied by fever and intoxication syndrome, wet cough, shortness of breath. Other characteristic symptoms of infection are conjunctivitis, rhinopharyngitis. The diagnosis is confirmed by the clinical picture, laboratory (PCR, ELISA) and radiation studies (radiography, CT of the lungs). Treatment includes antiviral, immunomodulatory, infusion, symptomatic therapy, oxygen therapy, and physical therapy methods.*

Key words: *Adenovirus pneumonia , immunosuppression, concomitant bronchopulmonary, endocrine.*

Adenovirus-associated pneumonia is a form of complicated adenovirus infection (AVI). In the structure of other viral pneumonias, it accounts for about 30%. Severe community-acquired pneumonia develops in 2.5% of cases of adenovirus infection, and mortality in complicated forms reaches 60-80%. Adenovirus pneumonia is more often diagnosed in children, immunocompromised adults and elderly patients, which makes the disease relevant not only for clinical pulmonology, but also for pediatrics and geriatrics.

Reasons

Characteristics of the pathogen

Respiratory infection is caused by a DNA-containing pneumotropic virus of the genus Mastadenovirus of the family Adenoviridae. Human adenoviruses (HAdV) were isolated as the causative agent of pneumonia in 1955. To date, 7 species and 88 serotypes of HAdV have been described and studied.

Some of them cause predominant damage to the conjunctival epithelium (B, C, D), others – to the gastrointestinal tract (F, G,), and others-to the genitourinary system (B, D). Adenoviruses of the B, C, and E types are associated with the occurrence of adenovirus pneumonia; serotypes B3, B7, B14, and B21 are most tropic to the lower respiratory tract epithelium.

HAdVs are stable in the external environment, their inactivation occurs when heated to 56°C, contact with chlorine-containing and phenol-containing disinfectants, and UV radiation.

Epidemiology

Distributors of infection are virus carriers and patients with adenovirus infection. Pathogens enter the lungs by airborne droplets when you inhale droplets of saliva or mucus from an infected person. In people with normal immunity,

adenovirus is retained in the lymphatic structures of the nasopharynx, so the lower respiratory tract is usually not affected. However, debilitated individuals and young children may develop adenovirus pneumonia. Since adenoviruses can cross the placenta from an infected mother to the fetus, intrauterine pneumonia can occur.

The incidence of adenovirus pneumonia is seasonal, and the number of hospitalizations for this reason increases in the autumn-winter period.

Risk factors

There are both sporadic cases and group outbreaks of AVI. Local outbreaks occur in isolated groups (children's homes, military garrisons, boarding schools for the disabled and elderly, correctional institutions). For adults, conditions that increase the likelihood of developing pneumonia are:

- concomitant bronchopulmonary, endocrine, and cardiovascular diseases (COPD, diabetes, and chronic heart failure);
- immunosuppression (HIV, post-organ transplant status, cachexia, hormone therapy, radiation therapy, chemotherapy);
- pregnancy.

In the pediatric population, adenovirus pneumonia is usually diagnosed in the presence of the following risk factors::

- prematurity;
- hypotrophy;
- artificial and mixed feeding;
- rickets;
- anemia.

Pathogenesis

The upper respiratory tract and conjunctiva of the eye serve as the entrance gate for AVI. Usually adenoviruses persist in lymphoid formations of adenoids, tonsils, causing rhinitis, tonsillitis, pharyngitis. Together with the ingested mucus, they enter the intestines, causing the clinic of gastroenteritis.

In addition, bronchogenic adenoviruses can reach the lower respiratory tract. This is favored by the ability of pneumotropic viruses to bind to CD46 receptors and desmoglein 2, which are widely present in the bronchial epithelium. A special feature of AVI is its "creeping" character: first, the epithelial cells of the nose and pharynx are affected, then the bronchi and alveoli, mesenteric lymph nodes, where the adenovirus replicates.

Adenoviruses have a cytopathogenic effect on pneumocytes, causing their degeneration and necrosis. In the affected organs, exudative inflammation develops with pronounced edema of the mucous membrane. There is a sharp lymphoid infiltration of the walls of the trachea and bronchi, dilation of capillaries, hemorrhages, accumulation of serous exudate in the bronchial tree. Lymphogenically, the adenovirus enters the tracheobronchial lymph nodes, causing their hyperplasia. Most often, NDP infection occurs in the form of bronchitis, bronchiolitis, and bronchopneumonia.

Due to the interaction with blood proteins, in particular, with factor X, adenoviruses have the ability to enter the bloodstream, causing a systemic inflammatory response, characterized by a significant production of pro-inflammatory cytokines (TNFa, IL-6 and 8, IFN-y and a2), damage to the heart, liver, kidneys, and brain.

Symptoms of adenovirus pneumonia

In most cases, lung inflammation on the background of AVI develops approximately on the 5th day after the onset of the disease. Signs of respiratory damage are usually preceded by fever up to 37.8 ° 39°C, intoxication syndrome (headache and muscle pain, weakness). At the beginning of the disease, rhinopharyngitis (runny nose, sore throat, dry unproductive cough), conjunctivitis (lacrimation, hyperemia of the eye mucosa) worries.

With the development of adenovirus pneumonia, the symptoms worsen: the temperature does not decrease, intoxication increases, cough with mucosal sputum appears, shortness of breath. In children, coughing can have an obsessive whooping cough-like character, and asthmatic syndrome often develops. In elderly patients, mental disorders are noted: agitation, confusion, episodes of aggression.

Distinctive features of adenovirus pneumonia are a long course (on average 21 days), slow reverse development. Usually, a microbial component quickly joins , and pneumonia becomes viral-bacterial in nature.

Complications

Severe forms of adenovirus pneumonia are characterized by a high percentage of lung parenchyma damage, various systemic complications, and a high risk of death. On the part of the respiratory organs, pleurisy and respiratory failure most often occur.

It is possible to develop adenovirus meningoencephalitis, hemorrhagic cystitis, toxic myocardial dystrophy, hepatitis, and nephropathy. The causes of death in fatal adenovirus pneumonias are acute respiratory distress syndrome, multiple organ failure, and DIC.

Diagnostics

Pneumonia is recognized on the basis of clinical and radiological data, but laboratory identification of the pathogen is required to confirm its adenovirus etiology. Depending on the patient's age and the severity of the disease, the examination and treatment are carried out by pediatricians, internists, pulmonologists, infectious diseases specialists. The auscultation picture is characterized by dry and different-sized wet wheezes in the lungs, with percussion revealing a box sound. To confirm adenovirus pneumonia is performed:

- X-ray of the lungs. It detects increased pulmonary pattern, infiltrative foci, interstitial and peribronchial changes, and sometimes pleural effusion. Depending on the severity and day of the disease, the images may show a different amount of lung tissue damage (segmental, lobar, total

pneumonia). For atypical radiological changes, a CT scan of the lungs may be required.

- Clinical and biochemical tests. The hemogram is characterized by neutrophilic leukocytosis, lymphocytosis, the presence of atypical mononuclears, and an increase in ESR. In severe forms, leukopenia and lymphocytopenia are detected. Basic biochemical parameters are studied: liver enzymes, urea, creatinine, total protein, etc. Blood gas composition is monitored in patients with signs of DN.
- Special tests. To detect adenovirus in biomaterial (sputum, nasopharyngeal mucus, blood), molecular genetic (PCR) diagnostics and the direct method of fluorescent antibodies (pMFA) are used. Serological diagnostics (ELISA, RSC, etc.) is based on the detection of an increasing titer of specific antiviral antibodies in paired sera.

Differential diagnosis

If a viral etiology of pneumonia is suspected, it is necessary to find out the direct pathogen. Using clinical and laboratory methods, other most common infections complicated by pulmonary inflammation are excluded:

- respiratory syncytial infection;
- flu and parainfluenza;
- coronavirus infection;
- metapneumovirus infection;
- rhinovirus infection.

In addition, differential diagnosis is carried out with non-infectious pathologies: obstructive pneumonitis in lung cancer, obliterating bronchiolitis, lupus pneumonitis, eosinophilic pneumonia, lipoid pneumonia, pulmonary vasculitis, etc.

Treatment of adenovirus pneumonia

Patients with lung damage of adenovirus etiology are hospitalized in the pulmonology department, with a complicated course of infection – in the ICU. Patients over 70 years of age with severe concomitant diseases, immunosuppression, signs of DN, and young children are subject to mandatory inpatient treatment.

Drug therapy

In adenovirus pneumonia, human leukocyte interferon and interferon inducers are used as etiotropic agents. In case of a complicated course, it may be necessary to conduct infusion therapy, prescribe immunoglobulins, antibiotics (penicillins, cephalosporins, aminoglycosides, macrolides). It is recommended to use mucolytic, expectorant, antipyretic drugs, vitamins. When ARDS develops, non-invasive and invasive auxiliary ventilation of the lungs is performed, and corticosteroids are administered.

Physical therapy

In case of bronchial obstruction, inhalation of bronchodilators through a nebulizer, drug inhalations with the addition of interferon, glucocorticoids are

indicated. After the temperature normalizes, a complex of physiotherapy is added to the treatment: UHF, electrophoresis, inductothermy, and UVB. To improve sputum drainage, percussion and vibration massage are performed.

Prognosis and prevention

In immunocompetent individuals, adenovirus pneumonia usually proceeds in a mild form and ends with recovery without consequences. However, among the risk groups (newborns, the elderly, patients with immunosuppression), the probability of complications and mortality remain high.

Personal prevention is similar to other viral infections: compliance with a mask regime during outbreaks, frequent hand washing, and nasal lavage. In groups, it is necessary to separate healthy people and people with signs of acute respiratory viral infections. The current live oral vaccine against adenovirus K 4 and 7 serotypes is of limited use and is currently used only in the US Armed Forces.

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PHYSIOLOGICAL AND PATHOGENETIC BASIS OF THE ORIGIN OF ALLERGY TO COW'S MILK PROTEINS IN CHILDREN

Annotation: *Allergy to cow's milk proteins in children is a complex of immune-mediated reactions from the gastrointestinal tract, skin and respiratory system caused by intolerance to milk proteins. The disease first appears in the first half of the baby's life. The main symptoms are vomiting, colic and intestinal disorders, and various skin rashes. Deterioration of health is associated with the use of cow's milk and products based on it. Diagnosis is based on anamnestic data, the results of immunological tests and a trial diet. Treatment involves strict restriction of the allergen in the diet for a period of 6 months, taking into account the dynamics of the disease.*

Key words: *milk, protein, symptom.*

Cow's milk protein allergy (ABCM) is a common variant of a food allergic reaction in young children. When interviewing parents and analyzing clinical manifestations, the frequency of occurrence reaches 10-15%, but according to laboratory diagnostics, ABCM affects no more than 2-3% of infants. The significant role of the disease in modern pediatrics is due to polymorphic symptoms, difficulties in selecting a rational scheme for feeding an infant, and the risk of developing other allergic diseases in the future.

Among all cow's milk proteins, beta-lactoglobulin, casein, alpha-lactalbumin, and bovine serum albumin are the most common sources of immune responses. The first two proteins are thermally stable, so heat treatment does not reduce their allergenic potential. Others are considered thermolabile and are dangerous in their raw form. The following factors contribute to the formation of allergies to cow's milk proteins in children:

- Artificial feeding. Breast milk is a physiological and less allergenic source of nutrients, compared to formula milk, even if they have a carefully thought-out composition. Among infants who mainly eat mother's milk, the incidence of the disease is 0.5-1.5%, among "artificial" children-from 2% to 5%.
- Hereditary predisposition. Innate features of the immune response to foreign substances determine the risks of atopic diseases. If one of the parents suffers from any form of allergy, the probability of developing ABCM in the child is 20-35%. When both parents are ill, this indicator increases to 40-60%.
- Exogenous factors. Sensitization to other food and household allergens increases the likelihood of ABCM. The mechanism is explained by cross-allergic reactions and mainly occurs in children with a hereditary

predisposition. Risk factors also include living in ecologically unfavorable regions with a large amount of atmospheric pollution.

ABCM causes degranulation of mast cells, release of bioactive substances, and an inflammatory process in the intestinal wall. The circulation of immune complexes causes systemic allergies affecting the skin, respiratory tract and other organs. According to the mechanism of development, an allergy to milk proteins is divided into 2 types. The first type is associated with immunoglobulins E (IgE), the second is caused by complement reactions, other types of antibodies and T cells.

The appearance of ABCM in breast-feeding is due to the ability of antigens to affect mother's milk. When a nursing woman consumes cow's milk products, components of their proteins from the intestinal lumen enter the lymphoid nodules (Peyer's plaques), where they activate T and B lymphocytes. Then the activated cells migrate through the blood vessels and can reach the mammary glands, after which they enter breast milk.

Allergy to cow's milk proteins can be immediate or delayed. In the immediate type, clinical manifestations occur shortly after consuming dairy products. With delayed reactions, symptoms of the disease develop after several hours or even days. In practical pediatrics, the pathogenetic classification is also used, according to which ABCM is divided into 2 groups:

- -mediatedIgE. This category includes systemic anaphylactic reactions and local clinical manifestations: gastrointestinal, respiratory, skin.
- -IgE-mediated Not . This type of allergy includes atopic dermatitis, Gainer's syndrome, a wide range of gastrointestinal pathologies: allergic eosinophilic esophagitis, colic, constipation.

Symptoms

Allergy to cow's milk proteins in children is characterized by a polymorphism of symptoms, involving at least two organ systems in the pathological process. All children have signs of dyspeptic disorders: frequent regurgitation and vomiting, diarrhea or constipation, a large amount of mucus in the bowel movements. Allergic reactions are the cause of 15% of cases of persistent infant colic, which causes the baby to constantly cry, push and groan, and sleep poorly.

Skin symptoms are represented by atopic dermatitis, which is manifested by dense red plaques, constant itching, thickening and peeling zones in the chronic course of the disease. Urticaria is also possible – itchy pink blisters that occur shortly after drinking milk. Respiratory signs include a runny nose, stuffy nose, shortness of breath, and wheezing. In some infants, the allergy is accompanied by conjunctivitis.

Complications

A serious danger is an immediate type of allergy. With angioedema, the pathological process can spread to the larynx, causing asphyxia. Anaphylactic shock is manifested by a sharp drop in blood pressure and depression of

consciousness, without emergency help, it ends in death. In non-IgE-mediated allergies, severe enterocolitis with metabolic acidosis and a shock-like reaction is possible.

The development of allergy to cow's milk proteins in children is considered as the first stage of the atopic march. ABCM is diagnosed in 85% of infants with manifestations of atopic dermatitis, which in the future is supplemented by sensitization to respiratory antigens and the development of allergic rhinitis. With a combination of unfavorable factors, such a child develops bronchial asthma over time. Up to 18% of patients with asthma are intolerant to milk proteins.

Diagnostics

Symptoms suspected to be related to food allergies require an in-depth examination by a pediatrician or pediatric allergist. To make a diagnosis, an analysis of anamnestic data is necessary: the nature of feeding, the presence and composition of complementary foods, the time of occurrence and severity of clinical manifestations. An important role is played by the family history, especially the mother's nutrition during breastfeeding. The following methods are used to verify the diagnosis::

- Allergy skin tests. they are informative for detecting IgE-mediated allergic reactions. They are performed in children from 6 months of age, using cow's milk protein antigens and other common types of food allergens to determine polyvalent immune responses. Redness, itching and blisters in the test area indicate the presence of allergies.
- Immunological tests. For the diagnosis of IgE-mediated variants of the disease, studies of specific class E antibodies are prescribed. Other types of disease are determined by the results of the basophil activation test, leukotriene release analysis, and other highly sensitive techniques.
- Diagnostic dairy-free diet. Exclusion of dairy products is a universal method used to confirm any type of ABCM. For immediate reactions, 7-10 days of follow-up is sufficient, delayed allergic manifestations require diagnosis within 2-4 weeks. If multiple food allergies are suspected, a strict elimination diet is prescribed.
- A provocative test. The introduction of an allergen in the form of a double-blind placebo-controlled trial is the world's "gold standard" for confirming the diagnosis in complex cases. This method is not certified in Russian clinical guidelines. It can be replaced by the diagnostic introduction of the product in a minimal amount.

Differential diagnosis

When making a definitive diagnosis, it is necessary to exclude other types of food reactions: lactase deficiency, lipase deficiency, gluten enteropathy (celiac disease). Differential diagnosis is carried out with food toxicoinfection, non-immune reactions to foreign pollutants in dairy food. AKBM is also

differentiated with conditions that are not related to food: functional dyspepsia, inflammatory bowel diseases.

An elimination diet is the main way to control allergic symptoms. An individual diet is selected for the child, taking into account the type of feeding, the type of ABCM, the intensity of clinical manifestations and other factors. In standard cases, diet therapy is prescribed for 6 months, after which a second clinical assessment is carried out and the question of expanding the diet is decided. Severe forms of ACBM require a special diet for 1-1. 5 years.

When an infant is breastfed, an elimination diet is prescribed for the mother. A woman should stop consuming milk, all types of dairy products and beef dishes. The results are evaluated after 2-3 weeks. Normally, the child's condition improves: the work of the digestive tract is normalized, skin symptoms decrease or completely disappear. If the treatment does not work, consider switching to a specialized mixture.

Children on artificial and mixed feeding are prescribed therapeutic milk mixtures with highly hydrolyzed proteins. In such products, proteins undergo fermentation, ultrafiltration, and heat treatment. The molecules have a minimal size and low allergenic potential, so they do not cause symptoms of ABCM. In severe cases, mixtures based on amino acids are used, which have high digestibility, quickly correct the malabsorption syndrome.

Drug therapy

In acute allergic manifestations, antihistamines of the 2nd generation are used. They are prescribed in short-term courses to stabilize the child's condition. Long-term use is not recommended due to numerous side effects. For skin care, you will need emollients and other hypoallergenic cosmetics with gentle formulas that will not aggravate dermatological symptoms.

Experimental treatment

Scientists are developing a method of allergen-specific immunotherapy (ASIT) for children with ABCM. It involves a gradual dosed exposure to the allergen to form a tolerance to cow's milk proteins. The complexity of treatment is due to the low evidence base and conflicting safety data. Along with studies on the effectiveness of immunotherapy, there are reports of adverse reactions and worsening of allergy symptoms.

Prognosis and prevention

Many cases of allergy to cow's milk proteins resolve independently with age, so if you follow a diet in infancy, the outcome of the disease is favorable. 85% of babies develop a strong protein tolerance by the age of three. By the age of 6, most children consume dairy products without problems, except in cases of polyvalent allergies and the progression of atopic march.

Special prevention is indicated for children with a burdened family history. If possible, only breast-feeding is carried out up to 4-6 months of age. If the mother has allergic diseases, she needs to follow an individual hypoallergenic

diet. No other dietary restrictions are required. For children receiving milk formula, choose formulations based on partially hydrolyzed protein.

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THE LATEST STATISTICAL ANALYSIS AND ETIOPATHOGENESIS OF ASIA-SYNDROME

Annotation: *ASIA-syndrome (autoimmune syndrome caused by adjuvants) was first described by the Israeli immunologist I. Schoenfeld in 2011. The second, eponymous name of the pathology is Schonfeld's syndrome. The disease is the subject of ongoing discussions in the scientific community. To date, no clear criteria have been developed and no indisputable evidence of its existence has been presented, and nosology itself is not included in ICD-10. Schonfeld and his followers are accused of anti-vaccination propaganda. At the same time, more than 4 thousand clinical cases of ASIA syndrome have already been described, dozens of articles and discussions at international congresses have been devoted to it.*

Key words: *ASIA syndrome, immunomodulatory, acrylic hydrogels caused.*

The development of ASIA syndrome is associated with the ingestion of adjuvants and the appearance of a hyperergic immune response. Adjuvants are chemicals that can enhance and prolong the antigen-specific immune response, but do not have to have their own immunoreactivity. As such compounds in the modern pharmaceutical industry, aluminum, silicon, squalene, silicone, and many other components that are part of vaccines, implants, and fillers are most often used.

According to modern concepts, ASIA syndrome develops as a result of the presence of an individual genetic predisposition due to the carrier of certain mutations of HLA genes (HLA-DRB1, HLA-DRB4, HLA-DQA1, HLA-DQB1, etc.). The direct causes of ASIA-syndrome are::

- Immunization. The question of whether vaccine adjuvants can cause autoimmune disorders is highly controversial. On the one hand, there are studies that reliably refute the association of vaccination with SLE, multiple sclerosis, diabetes, and other autoimmune pathologies. Meanwhile, proponents of ASIA-syndrome point to the existing relationship between vaccination against HPV, hepatitis B, influenza and other infections and the development of autoimmune reactions.
- Implantation of silicone prostheses. Silicone implants used for breast augmentation, buttocks, and lower legs have a certain immunogenicity, causing an increase in the level of CRP, RF, pro-inflammatory factors, and autoantibodies. Local reactions are represented by rejection of the implant or the formation of a fibrous capsule. In recent years, people are increasingly talking

about breast implant disease, although not all experts recognize the fact of its existence.

- Injections of hyaluronic acid. Clinical observations are described when subcutaneous administration of hyaluronic acid alone or in combination with acrylic hydrogels caused the development of collagenosis, autoimmune thyropathies.
- Tattooing. Some pigments contained in permanent makeup dyes can cause systemic reactions such as vasculitis, nephrotic syndrome, and granulomatous lung damage.

The mechanism of occurrence of ASIA-syndrome is insufficiently studied. It is assumed that adjuvants cause immunological reactions in several ways. Being non-immunogenic in nature, these excipients contribute to the deposition of antigens with which they are associated at the injection site and prolonged antibody synthesis. Some adjuvants stimulate the production of pro-inflammatory factors: cytokines, chemokines, interleukins (IL-1b, IL-4, IL-6, IL-12, IL-18), which support the chronic inflammatory response.

In addition, adjuvants can induce humoral immunity by stimulating Th2-lymphocytes. Finally, adjuvants can directly activate the major histocompatibility complex in genetically predisposed individuals.

Classification

The term "ASIA-syndrome" combines a group of independent syndromes that have their own causes and clinical manifestations. A common criterion for them is the supposed connection with the introduction of adjuvant substances into the body that provoke an autoimmune reaction. There are 5 forms of ASIA-syndrome.

1. Siliconosis. Occurs in less than 1% of patients within 6-15 years after implant placement. Implant ruptures and gel migration increase the risk of autoimmune diseases. Silicon compounds present in silicone prostheses can contribute to the development of skin and lung sarcoidosis, rheumatoid arthritis, Shagreen disease, and systemic vasculitis.

2. Post-vaccination phenomenon. It is associated with the presence of adjuvants such as aluminum hydroxide in vaccine preparations. The manifestations of ASIA include:

- Guillain-Barre syndrome that develops after the introduction of an anti-influenza and anti-hepatitis vaccine;
- rheumatoid arthritis on the background of immunization against tick-borne encephalitis, influenza;
- SLE associated with immunization against HPV, rubella, measles, tuberculosis, and hepatitis B.

3. Macrophage myofascial syndrome. It is believed that the surge in the incidence of macrophage myofasciitis is associated with the transition to mass administration of vaccines to the deltoid muscle and quadriceps of the thigh. This explains the typical localization of local inflammation, specific histological

findings (deposits of aluminum hydroxide nanocrystals). It is noted in patients after vaccination for hepatitis A, B, tetanus.

4. "sick building" syndrome. This phenomenon is mentioned if at least 20% of people experience similar pathological symptoms when they are in the same room. It occurs more often in office workers, sometimes in residents of the same building. Among the most common complaints are lacrimation, nasal congestion, itchy and dry skin, and drowsiness. It is assumed that this variant of ASIA syndrome is associated with chemicals used in air conditioning systems, possibly mold antigens, phthalates.

5. Gulf War syndrome. It was first recorded in military personnel who took part in combat operations in this region in 1991. The cause of this syndrome, which was accompanied by muscle and joint pain, ataxia, cephalgia, fever, skin rashes, gastrointestinal disorders, and sleep disorders, is considered to be multiple vaccinations of the military in combination with psychological stress and increased physical exertion.

Symptoms

Signs of ASIA-syndrome can develop in a wide time frame-from 2 days to 20 or more years after the intended exposure (immunization, augmentation mammoplasty, administration of hyaluronic acid, tutuage). Early complaints are non-specific, including unexplained weakness, persistent subfebrility, arthralgia of various localization or polyarthritis, pain in the muscles and spine. In the future, asthenia increases, insomnia, shortness of breath may bother.

Some patients with various variants of ASIA-syndrome complain of the appearance of hemorrhagic rash on the skin, dry mouth, hair loss, brittle nails. Sometimes there is a Raynaud's phenomenon. Irritable bowel syndrome may occur. At a later stage, there may be amnesia, cognitive decline, as a result of demyelination.

A distinctive feature of ASIA-syndrome is the regression of most clinical and laboratory manifestations after removal of the provoking agent (silicone, pigment, etc.).

Complications

From the moment the first signs of Schonfeld syndrome appear to its diagnosis, years and decades pass. All this time, patients receive inadequate treatment, endure frequent hospitalizations, and suffer from a decrease in the quality of life. ASIA-syndrome can lead to the manifestation of various autoimmune pathologies: systemic vasculitis, rheumatoid arthritis, SLE, Sjogren's disease, multiple sclerosis. The prolonged presence of adjuvants in the body (for example, silicone implants) is accompanied by constant stimulation of immune responses, which is a risk factor for the occurrence of pseudolymphoma, as well as non-Hodgkin's lymphoma.

Diagnostics

Immunologists and rheumatologists are involved in the examination and observation of patients with manifestations of ASIA syndrome. Currently, special

criteria are proposed for the diagnosis of this pathology. Mandatory criteria include:

- association of symptoms with external influences (infection, immunization, silicone injection);
- muscle syndrome (myalgia, myositis, paresis);
- joint syndrome (arthralgia, arthritis);
- asthenia (fatigue, weakness, sleep disorders);
- psychopathological manifestations (memory disorder, cognitive deficits);
- pyrexia;
- xerostomia.

Small criteria for ASIA-syndrome include detection of At to the intended adjuvant, specific HLA halotypes, signs of systemic diseases, and other manifestations (IBS).

1. Study of blood parameters. ESR is increased in the blood, positive CRP is detected, the level of fibrinogen, LDH, ALP is increased. Markers of autoimmune diseases (anti-CCP, antinuclear factor, At to dsDNA, RF, At to Sm antigen, etc.) are often detected.

2. Tissue biopsy. Biopsies of the skin, muscles, blood vessels, lymph nodes, and sometimes internal organs are examined. In the focus of adjuvant administration, a characteristic histological picture of immune inflammation develops: lymphohistiocytic tissue infiltration, scleroid and granulomatous changes.

3. Instrumental research. To assess the integrity of breast implants, ultrasound of the mammary glands is performed, and if necessary, MRI monitoring is performed. If the internal organs are affected, ultrasound of the kidneys and CT of the lungs are prescribed. In Raynaud's syndrome, capillaroscopy is performed.

Treatment of ASIA-syndrome

To eliminate pathological symptoms, it is necessary to eliminate the provoking factor (remove implants and fillers, abandon the use of air conditioning, change the place of work/residence). NSAIDs (nimesulide, etoricoxib, ibuprofen) are used to relieve symptoms. If necessary, pulse therapy with methylprednisolone, penicillamine, and antimetabolites (methotrexate) are added to the basic anti-inflammatory therapy scheme.

Prognosis and prevention

The correlation between ASIA syndrome and adjuvant administration needs to be further studied and recognized by the medical community. To date, the effect of adjuvants on the development of systemic diseases remains unproven. The ASIA syndrome clinic often disappears after the trigger is eliminated. However, the FDA recommends that plastic surgeons opt out of silicone gel breast implants due to their high immunogenicity in favor of saline-based implants. Before

medical manipulations involving the introduction of foreign substances, it is necessary to conduct a thorough immunological examination of patients.

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ETIOLOGY AND DIAGNOSIS, TREATMENT OF ABNORMALITIES IN THE DEVELOPMENT OF THE SPLEEN

Annotation: *Abnormalities in the development of the spleen are persistent changes in the morphological structure of the organ that occur as a result of developmental disorders in the intrauterine period. Clinically, they can be asymptomatic, manifest as pain in the left half of the abdomen, nausea, stool disorders, and in severe cases - lead to death. Diagnosis is based on physical examination, ultrasound, spleen scintigraphy, and general blood analysis. Patients with asymptomatic malformations should be monitored by a doctor. In the presence of clinical manifestations, surgical treatment is performed: splenectomy, removal of additional lobules.*

Key words: *physical examination, ultrasound, spleen scintigraphy.*

Malformations of the spleen - a congenital change in the shape, size and location of the organ. Malformations are rare, on average, in 0.1-0.3% of all spleen diseases and are often combined with congenital pathologies of other systems and organs (liver, urinary and cardiovascular systems, gastrointestinal tract). Severe anomalies are detected during prenatal diagnosis or in the first days of life, asymptomatic ones may be an accidental finding in the study of the abdominal organs. Congenital pathologies of spleen development are equally common in males and females.

The occurrence of spleen abnormalities is possible at any stage of intrauterine development. The formation of the spleen begins at the 5th week of embryogenesis in the thickness of the mesenchyme of the dorsal mesentery. Subsequently, the organ increases in size, overgrown with lymphoid tissue, venous sinuses and other blood vessels. By the middle of the 8th month of the embryonic period, the formation of the spleen ends, the intensity of hematopoiesis decreases, and lymphopoiesis increases. The following factors may affect the occurrence of a developmental anomaly::

- Unfavorable environmental conditions. Congenital pathologies are formed under the influence of teratogenic factors that the mother faces during pregnancy (gassing and dustiness of the air, radioactive radiation, etc.). In addition to unfavorable ecology, a tense and stressful situation in the family of a pregnant woman can lead to violations in the fetus.
- Bad habits of parents. Abnormalities of intrauterine development can be caused by smoking, alcohol and drug use by a woman before and during pregnancy. The probability of congenital pathology increases with alcoholism and drug use by the child's father at the time of conception.

- Infections. Bacterial, viral and parasitic infectious diseases (herpes, flu, syphilis, toxoplasmosis, etc.) transferred by the mother during pregnancy contribute to the occurrence of internal organ defects.
- Taking illegal medications. The use of certain medications that are contraindicated during pregnancy (tetracyclines, macrolides, cytostatics, neuroleptics, etc.) has a negative effect on the differentiation and laying of the fetal spleen.
- Heredity. One of the theories of the development anomaly is considered to be the inheritance of defects in the chromosomal set of parents, in which there is an underdevelopment or formation of additional lobules of the spleen. However, no special studies have been conducted on this issue.

Classification

Isolated congenital anomaly of the spleen is rare. Basically, the pathology is combined with malformations of other organs and systems (liver, kidneys, heart, reproductive system). In modern gastroenterology, the following types of spleen abnormalities are distinguished::

1. Additional spleen. The most common anomaly is about 30% of all congenital malformations of the organ. Additional lobules are more often localized in the area of the gate of the main spleen, but can be found in the epididymis, pancreas, etc. The number of additional lobules can reach up to several dozen. The diameter of the lobules varies from 1 to 8-10 cm. This pathology has an asymptomatic course and most often does not affect the quality of life.
2. Spleen cyst. Congenital organ cysts are quite rare, in 10% of all organ cysts. More often, epidermal cavities are found, the inner surface of which is lined with multilayer epithelium, and the contents are represented by horny scales. The clinical manifestations of the pathology depend on the size of the cyst. Dimensions can vary from 0.5 to 10-15 cm in diameter.
3. Aspleniya (alieniya). Congenital absence of the spleen is very rare and is a serious pathology. Asplenia gravis in 90% of cases leads to death within the first year of life due to the fact that it is combined with severe, often inoperable, heart and large vascular defects. Patients have impaired immunity and coagulation, a decrease in the concentration of hemoglobin and other blood components.
4. Microsplays. The defect occurs rarely and is manifested by a sharp decrease in the size of the organ while maintaining normal function. In the absence of severe pathology from other organs, this anomaly does not worsen the patient's quality of life.
5. Polyspleniya. In this developmental defect, the organ parenchyma is divided by furrows into 2-9 equal lobules, which are connected to each other by connective tissue cords and vessels in the area of the spleen gate. Pathology occurs 3 times more often than asplenia, and is also combined with abnormalities of the cardiovascular system.

6. Abnormalities in the location of the spleen. Ectopia is a fairly common pathology due to the large mobility of the organ. The spleen can be located in the retroperitoneal space, in the umbilical or diaphragmatic hernia. When transposing internal organs, the spleen is localized in the abdominal cavity on the right. "Wandering" spleen is more common than other dystopias and can be accompanied by dyspeptic and dysuric phenomena.

Symptoms of spleen abnormalities

Clinical manifestations depend on the type of malformation. With an additional spleen, microsplenia, and polysplenia, there are no symptoms, and abnormalities are often detected accidentally during surgery or abdominal examination for another disease. Patients with alienia are characterized by a persistent decrease in immunity, frequent development of septic complications, a tendency to thrombosis and anemia. The anomaly is combined with combined heart malformations, which are accompanied by severe heart failure, hypotension or hypertension, respiratory failure, etc. The clinic of a congenital cyst depends on the size and location of the formation. With medium cysts (5-10 cm), there are painful sensations or heaviness in the left hypochondrium, extending to the left shoulder, shoulder blade. Nausea and vomiting may occur, as well as upset stools. Large cysts often squeeze the gastrointestinal tract, causing intestinal obstruction. On examination, the asymmetry of the anterior abdominal wall is noticeable, bulging in the area of the left hypochondrium.

Complications

Asplenia causes the development of serious complications (sepsis, thrombosis) up to a fatal outcome. Suppuration of a congenital cyst leads to abscessing. When the cystic cavities are ruptured and the contents are spilled into the abdominal cavity, peritonitis develops, and then sepsis. Cysts of huge size can squeeze large vessels located in the abdominal cavity, intestines, leading to ischemia and necrosis of neighboring organs, intestinal obstruction. Displacement of the vagus spleen causes inversion of the organ, which causes a violation of blood supply, heart attack and necrosis of the spleen.

Diagnostics

The study of spleen malformations is the subject of study by doctors of various specialties (pediatric gastroenterologists, neonatologists, surgeons). Asymptomatic malformations are often undiagnosed during life and are detected postmortem at autopsy. To detect congenital malformations of the spleen, the following studies are conducted::

- Examination by a pediatric gastroenterologist. It is possible to suspect abnormalities from the spleen during examination only against the background of clinical manifestations of the disease (abdominal asymmetry, pain in the left hypochondrium). For combined congenital heart defects in the framework of cardiosplenic syndrome, a specialist prescribes an ultrasound examination of the spleen.

- Ultrasound examination. Allows you to specify the size and shape of the organ, and identify additional lobules. When performing ultrasound of the spleen, congenital cysts are detected, their size and configuration are estimated.
- Scintigraphy of the spleen. Allows you to determine the size, location, and additional organ formations. Radioisotope scanning is used to assess the functional state of the parenchyma and detect spleen abnormalities.
- A blood test. With asplenosis, patients have leukocytosis with a shift of the leukocyte formula to the left. In red blood, anemia, anisocytosis, poikilocytosis are detected. There is an increase in the number of platelets and reticulocytes.

In controversial cases or with insufficient visualization, a contrast-enhanced MSCT of the spleen is performed using standard diagnostic methods. The study reveals the exact size and location of the organ, additional lobules and cystic cavities. Differential diagnosis depends on the type of anomaly. Congenital cysts and additional lobules should be distinguished from neoplasms of the spleen, adrenal glands and pancreas. In adulthood, microsplenia is differentiated with senile atrophy of the organ.

Treatment of spleen malformations

The choice of treatment measures depends on the severity of clinical symptoms and the type of anomaly. Asplenia, which is part of cardiosplenic syndrome, is not treatable and is a life-threatening disease. Various abnormalities of the spleen localization, as a rule, do not need treatment and require periodic monitoring by a gastroenterologist. With a wandering spleen, splenectomy is indicated due to the risk of torsion of the leg. The tactics of treatment in relation to additional lobules are different. In the absence of symptoms, careful follow-up is indicated. If hypersplenism occurs, additional lobules are surgically removed. When extra lobules are detected intraoperatively in patients with spleen injury in order to prevent postoperative hyposplenism, their preservation is preferable.

Prognosis and prevention

The prognosis of the disease depends on the severity of the defect, the presence of symptoms and damage to other organs. The presence of an anomaly in most cases does not affect the patient's standard of living and does not worsen his health. Only with asplenia, combined with severe heart pathology, the prognosis is unfavorable. The main role in the prevention of congenital anomalies belongs to careful pregnancy planning. Before the expected conception, expectant parents are recommended to undergo a comprehensive examination to detect possible latent and chronic infections, STDs. During pregnancy, a woman needs to give up bad habits, lead a healthy lifestyle, adhere to the basics of a balanced diet, and exclude the impact of aggressive environmental factors.

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PATOLOGY AND DIAGNOSIS, ETIOLOGY , TREATMENT OF ANORECTAL MALFORMATIONS

Annotation: *Anorectal malformations are congenital anatomical abnormalities of the rectum and anus. Risk factors include chromosomal and gene pathologies, extragenital diseases in the mother, and teratogenic effects. Main symptoms: lack of an opening of the anus in the correct place, stool retention, meconium and feces discharge through the opening of the urethra, vagina, perineal fistula. The clinical picture develops within a few hours to 4-6 months after birth. For diagnostics, probing, ultrasound and X-ray examination, a complex of laboratory tests are used. The treatment is surgical, the tactics of the operation are selected individually.*

Key words: *urethra, vagina, perineal fistula.*

He incidence of anorectal malformations (ARD) in children is 1 case per 2-5 thousand newborns, and boys are more often ill and account for 55-70% of patients. Rectal atresia was first described by Aristotle in the 3rd century BC, and the first prototype of a modern operation to correct a congenital anomaly was proposed in 1845. Until now, the problem of anorectal pathologies has not lost its relevance in pediatric surgery due to the high frequency of their occurrence, difficulties in selecting surgery tactics, and a high risk of postoperative complications.

Etiological factors of anorectal malformations in children have not been established. Many authors note the contribution of genetic polymorphisms that cause pathologies of signaling pathway proteins and morphogen proteins. The risk of the disease increases if the mother has diabetes, obesity, arterial hypertension, and occupational hazards. Defects are more often observed in children who are born with the use of assisted reproductive technologies.

The association of anorectal abnormalities with chromosomal syndromes is well studied. Pathology is observed in 2-5% of children with Down syndrome, and 95% of such patients are diagnosed with anal atresia without fistula formation. In other types of trisomies (Edwards ' and Patau's syndromes), the probability of malformations is about 1%. There are also more than 40 gene syndromes associated with ARP, including Currarino, Townes-Brox, Ivemark, and Pallister-Hall syndromes.

Pathogenesis

There are several hypotheses of embryogenesis of anorectal malformations in children: failed migration of rectal rudiments, caudal differentiation disorders, caudal regression syndrome. An important role in the appearance of an anatomical

anomaly is assigned to pathologies of separation of the primary cloaca at 6-8 weeks of intrauterine development. As a result, the anus does not form, and the pelvic organs cannot form properly.

In practical pediatric surgery, more than 30 variants of systematization of anorectal malformations in children are presented. The most complete and frequently used is the Melbourne Classification (1970), which takes into account the embryogenesis of the disease, the localization of the lesion relative to the pelvic muscle diaphragm. There are 3 types of anomalies:

- High (supralevatornye). The end of the colon is located above the levator muscles, which form part of the pelvic floor. This includes rectal atresia and anorectal agenesia, which occurs without a fistula or with a fistula: rectovesical and retrourethral – in boys, rectovaginal and retrocloacal – in girls.
- Medium (intermediate) levels. The intestine ends at the level of the levator muscles at a height of 2.5-4.5 from the level of the skin. There are anorectal stenosis and anal agenesis without a fistula or with a fistulous course: rectobulbar – in boys, rectovestibular-in girls.
- Low (translevatornye). The end of the large intestine passes through the levators and is located relatively close to the natural localization of the anus (less than 2.5 cm from the skin). Patients of both sexes have a simple form of malformation-a covered anus. Boys also have anterior anal stenosis, perineal anus, and rectomedial fistula. Girls have a vulvar anus, anovulvar fistula.

In Russian surgery, the classification of I. K. Murashov (1957) is additionally applied, which is characterized by simplicity. All types of anorectal malformations are divided into complete atresia of the anus or rectum and atresia with fistulas in the urinary system, genitals, and perineum. Much less often in practice, the classifications of A. I. Lenyushkin (1972), A.M. Aminiev (1965), and G. A. Bairov (1977) are used.

Symptoms of anorectal malformations

Doctors most often encounter atresia, which accounts for up to 85% of ARPS. With a fistless form of congenital malformation, symptoms begin to appear 10-12 hours after birth: the child is restless, constantly pushes, refuses to breastfeed, and does not sleep well. By the beginning of 2 days of life, a clinical picture of intestinal obstruction is added: lack of stool, vomiting, bloating and contouring of swollen intestinal loops through the abdominal wall.

Changes in tissues in the anus are determined by the nature of the anomaly. With a non-perforated anus (a low form of ARP), a membrane is visible at the site of the intestinal outlet, which begins to bulge out as meconium accumulates. With medium and high forms of anorectal malformations, there is a slight retraction of tissues in the proper place, and an underdevelopment of the coccyx is possible.

In fistulous forms, meconium and fecal matter are released through other physiological or unnatural openings. Signs of intestinal obstruction develop later-from 4-6 months, most often after the introduction of complementary foods. The

presence of a fistula between the rectum and the bladder or urethra is manifested by a greenish or brown color of urine, the discharge of gases through the urethra. In girls, the fistula can open into the vagina, from where meconium and gases periodically escape.

In children of both sexes, external fistulas occur, which appear as an additional hole in the perineal area. In girls, the fistula passage is short and wide, so it provides sufficient bowel movement, and signs of obstruction are rare. In boys, the canal can be long and narrow, so the pathology causes characteristic symptoms from the first days of life.

Complications

Untimely diagnosis of anorectal malformations is fraught with dangerous consequences. When low intestinal obstruction increases, fecal vomiting, severe intoxication occurs, and the risk of intestinal perforation and peritonitis increases. Repeated regurgitation and vomiting can lead to aspiration pneumonia. In the presence of fistulas, bacterial lesions of the genitourinary organs are possible due to the ingestion of meconium and intestinal microflora.

In 40-70% of patients, anorectal malformations are accompanied by abnormalities of other organs. Pathologies of the nervous system (hydrocephalus, spinal cord lipoma, meningomyelocele), heart (Fallot's tetrad, defects of the interventricular and atrial septum), and genitourinary system (kidney hypoplasia, hydronephrosis, anomalies of the external genitalia) are common.

Children with anal atresia often have malformations of the overlying gastrointestinal tract: tracheoesophageal fistula, small bowel atresia, gastroschisis, incomplete bowel rotation. There are also violations of skeletal formation: vertebral agenesis, polydactyly, clubfoot. With characteristic combinations of 3-5 defects, VACTERL syndrome is diagnosed.

A separate category of complications is the negative consequences of surgical correction of anorectal anomalies. In the case of primary intervention, the frequency of unsatisfactory results is 10-60%, as a result of which repeated traumatic operations are required. The frequency of postoperative purulent-septic complications reaches 57-68% of cases with a mortality rate of about 17%.

Diagnostics

In most cases, anorectal malformations in children are detected during examination by a neonatologist in the maternity ward. If such an anomaly is suspected, an urgent consultation with a pediatric surgeon is required to choose the time and tactics for correcting anatomical disorders. To correctly determine the type of ARP and the method of its treatment, the following research methods are used::

- Probing. The procedure is indicated in the presence of an anal opening and suspicion of rectal atresia. The inability to move the soft catheter and the absence of meconium indicate overgrowth of the intestinal lumen. If an

external fistula is detected on the perineum, it is probed, and fistulography with water-soluble contrast is performed to clarify the data.

- Ultrasound of the pelvic organs. Ultrasound examination of the newborn is prescribed to determine the level of colon atresia, identify concomitant malformations. According to indications, ultrasound is supplemented with an invertogram-radiography in an inverted position (upside down).
- Laboratory diagnostics. A general blood test shows signs of hypochromic anemia in 80-90% of cases, an increase in hematocrit in 98% of patients, leukocytosis with a neutrophil shift in fistulas and inflammatory complications. In the results of a biochemical blood test, hypoproteinemia, increased liver tests, and hypokalemia are determined. In the general analysis of urine with rectovesical fistulas, pyuria is detected.

First aid consists of decompression of the intestine by nasogastric or orogastric intubation. Placing the probe removes the contents of the intestinal loops, reduces symptoms, and prevents perforation of the intestinal wall. This gives time for a detailed examination of the child and determination of the type of operation. In the presence of concomitant malformations of the skeleton or other organs, a combined operation or several surgical interventions may be required.

The duration of treatment depends on the severity of the defect. In the first 2-3 days after birth, all types of complete atresia, fistulas in the urinary tract, small-diameter fistulas in the vagina and perineum are corrected. Other types of ARP are operated on in the first 1-3 months of the child's life; for special indications, surgical intervention is postponed until the age of 1-2 years. Types of operations based on the type of anorectal malformation:

- low forms of atresia can be successfully corrected with a single-stage perineal proctoplasty;
- medium forms of ARP are eliminated by sacro-interventional proctoplasty, which allows you to form an anal opening in a natural place;
- high forms of atresia are the most difficult to treat, since they require significant mobilization of the colon and are carried out in two stages: the first – soon after birth, the second – in 3-12 months of life.

Prognosis and prevention

A favorable outcome is observed in children with a low location of anorectal malformations, which can be corrected in one operation and rarely cause complications. In other forms, the prognosis is determined by the volume and severity of anatomical abnormalities, the involvement of other pelvic organs in the pathological process, and the timing of treatment initiation. Effective measures for the prevention of pathology have not yet been developed.

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METHODS FOR STUDENTS TO UNDERSTAND THE TOPIC OF HEAD ANATOMY

Annotation: *The skull consists of 22 bones in most adult specimens, which come together via cranial sutures. The function of the skull is both structurally supportive and protective. The skull will harden and fuse through development to protect its inner contents: the cerebrum, cerebellum, brainstem, and orbits. In addition, it supports the muscles of the face and scalp by providing muscular and tendinous attachments, protects neurovascular structures, and houses various sinuses to accommodate increases in pressure.*

Key words: *head, mouth, cerebrum.*

The calvaria, the uppermost part of the skull, protects the cerebral cortex, cerebellum, and orbital contents. It is composed of the frontal bone, parietal bones, temporal bones, and occipital bone. The coronal suture is the transverse mid-anterior junction of the frontal bone and the two parietal bones. The parietal bones articulate with the temporal bones inferiorly via the squamosal sutures and the occipital bone posteriorly via the lambdoid suture. The sagittal suture lies along an anterior-posterior axis and is the articulation of the two parietal bones. The pterion is the articulation of the frontal, parietal, temporal, and sphenoid bones just superior to the pinna. The asterion is the articulation of the parietal, temporal, and occipital bones. Finally, the skull base allows the passage of various neurovascular structures. It is composed of the sphenoid and ethmoid bones (which have their associated air sinuses) and parts of the frontal, temporal, and occipital bones.

Anteriorly, the frontal bone forms the superior aspect of the orbits. The glabella is a key midline landmark of the frontal bone. It lies superior to the nasion and between the superciliary ridges. The frontal sinuses lie deep to the brow ridges. The bregma is the junction of the coronal and sagittal sutures, and lambda is the junction of the lambdoid and sagittal sutures. The temporal bones subdivide into petrous, squamous, zygomatic, and mastoid parts. The petrous portion houses the inner ear. The mastoid is a bony prominence that lies posterior to the auricle and has an associated sinus. The occipital bone is the most posterior aspect of the skull.

Intracranial Fossae

There are three cranial fossae with various structural landmarks. The anterior cranial fossa forms from the frontal bone, the sphenoid bone, and the ethmoid bone. The middle cranial fossa forms from the sphenoid bone and two temporal bones. Finally, the posterior cranial fossa forms from the occipital bone

and two temporal bones. The critical anatomic landmarks of each fossa are listed below.

- Anterior Cranial Fossa (contains frontal lobe of the brain)
-
    - Cribriform plate
- Middle Cranial Fossa (contains temporal lobe of the brain)
-
    - Optic canal
    - Superior orbital fissure
    - Foramen spinosum
    - Foramen rotundum
    - Foramen ovale
- Posterior Cranial Fossa (contains the cerebellum)
-
    - Internal auditory meatus
    - Jugular foramen
    - Foramen magnum
    - Hypoglossal canal

Facial Bones

There are 14 facial bones with specific anatomical landmarks and embryologic development mechanisms. These include the two nasal conchae, two nasal bones, two maxilla bones, two palatine bones, two lacrimal bones, two zygomatic bones, the mandible, and the vomer. The maxillae have associated air sinuses. The temporomandibular joint (TMJ) is a significant landmark for effective mastication, and its dysfunction is common in adults.

Embryologically, the skull derives from ectodermal neural crest and mesoderm. The frontal, ethmoid, and sphenoid bones derive from the neural crest, while the parietal and occipital bones originate from the mesoderm. The temporal bones derive from both the mesoderm and neural crest. The skull develops alongside the rapid growth of the nervous system in the embryonic phase of development (weeks 1 to 8). Ossification and structural molding begin in the fetal phase (week seven onward).

Early Development

Mesoderm begins to form in the third week of gestation after early mesenchymal cells have migrated through the primitive streak. These cells then proliferate in a longitudinal fashion adjacent to the notochord (paraxial mesoderm) and eventually divide into various early connective tissue populations, including the sclerotome and myotome. The sclerotome develops into the mesodermal portions of the skull (parietal bones, occipital bone, and petrous portion of the temporal bone).

Neural crest cells form the rest of the neurocranium: the frontal bone, ethmoid bone, sphenoid bone, and squamous portion of the temporal bone, as well as the entirety of the viscerocranium. Five significant pharyngeal arches form in

humans, starting rostral to caudal around days 19 to 21 of gestation. These arches form muscles, cartilaginous and osseous structures, nerves, blood vessels, and various organs of the head and neck. Each arch has components of ectoderm, mesoderm, endoderm, and neural crest. Some of the neural crest components form parts of the viscerocranium previously discussed, including the mandible, maxilla, incus, and malleus (arch 1) and stapes and styloid process of the temporal bone (arch 2).

Several genes play an important role in forming the cranium, including the Dickkopf family, matrix metallopeptidase 9, Indian hedgehog, Sonic hedgehog (Shh), Fibroblast Growth Factor 3, and the family of collagen genes (i.e., COL1A1).

Fetal Development and Ossification

There are two mechanisms by which bones develop and ossify: intramembranous ossification and endochondral ossification. Intramembranous ossification is the direct formation of early bone from undifferentiated mesenchyme without a template, and endochondral ossification utilizes cartilage as a precursor formed by chondrocytes for bone maturation.

The bones of the cranial vault (including the parietal, frontal, occipital, and squamous temporal bones) and viscerocranium (including the maxilla, mandible, and other flat bones of the face) undergo intramembranous ossification. The skull base (including the sphenoid and ethmoid bones) forms via endochondral ossification. Mesenchymal maturation does not occur until after the formation of the neurovasculature, allowing for the development of the foramina. This process is especially important in the skull base, where nerves and blood vessels exit the cranium.

Branchial Arch Derivatives

- First Branchial Arch - the mandibular nerve of trigeminal nerve (CN V3)
- Second Branchial arch - the facial nerve (CN VII)
- Third Branchial Arch - the glossopharyngeal nerve (CN IX)
- Fourth Branchial Arch - the vagus nerve (CN X)
- Sixth Branchial Arch - the superior and recurrent laryngeal nerve branches of the vagus nerve (CN X)

Most of the blood supply to the skull and its associated structures comes from the common carotid arteries (anterior circulation) and vertebral arteries (posterior circulation).

The common carotid artery bifurcates into the internal and external carotid arteries. The external carotid artery is the main blood supply to the skull bones and meninges. It travels up the side of the neck; eight main branches feed the superficial structures of the skull and face. The maxillary artery is the most prominent and clinically relevant of these branches. The middle meningeal artery is a branch of the maxillary artery, and injury secondary to blunt force trauma to the lateral skull at the pterion can lead to epidural hematoma. The internal carotid

artery has no branches in the neck and enters the base of the skull, supplying intracranial structures. The internal carotid and vertebral arteries combine to form a large anastomosis called the circle of Willis. The anterior communicating artery, two anterior cerebral arteries, two middle cerebral arteries, two posterior communicating arteries, two posterior cerebral arteries, and basilar artery (superior continuation of the vertebral arteries) all contribute to this anastomosis.

The dural venous sinuses (i.e., superior sagittal, straight, and transverse sinuses) and superficial and deep veins of the head (i.e., cerebral veins, great vein of Galen, cerebellar, and facial veins) drain into the internal and external jugular veins bilaterally and ultimately to the superior vena cava and right atrium of the heart.

The brain and central nervous system have been traditionally thought not to contain lymphatic vessels. However, some believe that the cerebrospinal fluid (CSF) does have some connection with the lymphatic system and drains through the cervical lymph nodes. The recent discovery of a “glymphatic system,” composed of a network of CSF, cerebral interstitial fluid, and meningeal vasculature, has shed more light on this debate and is an area of ongoing research.

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SYMPTOMS OF DISEASES OF INTESTINAL INFECTIONS AND METHODS OF THEIR TREATMENT

Annotatsion:*This article provides information on intestinal infections and the diseases that arise from them,pathogenesis of the disease,methods of treatment.In order not to infect such diseases, a person must constantly follow the rules of personal hygiene.*

Keywords:*acute, chronic, intestinal diseases, dysentery, etiology, pathogenesis, gastroenterocolitis, allergic, hemolytic Staphylococcus, Streptococcus,Enterococcus, intestinal and Proteus Rod*

Intestinal infections are diseases caused by microorganisms that infect the digestive tract. They can manifest as loose stools, vomiting, abdominal pain and general malaise. The duration of the disease depends on the pathogen, but most often the symptoms disappear within a few days. However, with improper treatment, complications may occur, one of which is dehydration. Therefore, if intestinal disorders occur, it is important to consult a general practitioner, an infectious disease specialist or a therapist in a timely manner.

Causes and methods of transmission

The source of the disease is most often an infected person or a bacterial carrier – a person who has suffered an infection, sometimes even without symptoms, and continues to secrete a microorganism.

The main mechanism of transmission of the disease is fecal-oral. This means that the pathogen is released into the external environment with feces or vomit, where it can persist for a long time. Then it enters the human digestive tract in various ways. There are three such paths:

Food – consumption of contaminated products: meat, milk, eggs, fish, confectionery, vegetables, fruits, etc. Microorganisms can enter them through the contaminated hands of personnel who work in food production, in violation of technology, storage and transportation rules, insufficient heat treatment, etc.

Water – drinking tap water contaminated due to violations of its purification or disinfection regimes, using water from barrels, cisterns, cisterns, wells, as well as getting water into the mouth and nose when bathing in reservoirs.

Contact – infection through dirty hands, when using common dishes, linen.

Some intestinal viruses can additionally be transmitted by aerosol.

Pathogens:

Infectious diseases of the gastrointestinal tract can be caused by various microorganisms:

viruses – rotaviruses, adenoviruses, enteroviruses;

bacteria – shigella, Escherichia coli (E. coli), salmonella, campylobacteria, vibrio cholerae;

the simplest ones are giardia, amoebas.

The most common causes are rotavirus infection and E. coli.

Pathogens differ in their effect on the body: they can cause damage to the walls of the stomach and intestines, increase the output of water and electrolytes, lead to the development of gastrointestinal diseases - gastritis, enteritis, colitis.

It promotes the reproduction of microbes by weakening the immune system. Therefore, intestinal infections often occur against the background of gastritis with low acidity, vitamin deficiency, intestinal dysbiosis.

Symptoms

From the mouth, microorganisms enter the stomach, and then into the intestines, where they begin to multiply intensively. This period is not accompanied by symptoms and is called incubation. It lasts in most cases from 6 to 48 hours. After that, various manifestations arise:

nausea, vomiting of eaten food;

pain in the upper abdomen, the umbilical region, or throughout the abdomen;

the appearance of frequent loose stools with a changed consistency;

rumbling in the intestines;

painful or false toilet urges;

bloating and increased gas formation.

The general condition may be disturbed, weakness, headache and muscle pain, fever may be disturbed. The symptoms of intestinal infection in patients and the severity of manifestations depend on the amount of pathogen ingested.

One of the most unpleasant consequences of acute intestinal infections is dehydration. It develops due to the fact that pathogen toxins increase the release of water and electrolytes into the lumen of the gastrointestinal tract, causing diarrhea. Also, fluid and salt losses occur during vomiting. Signs of dehydration include dry and flabby skin, weight loss, thirst, muscle weakness, low blood pressure, rapid heartbeat, and decreased urine output. In severe cases, acute renal failure, impaired consciousness, and seizures develop.

Diagnostics

Examination for intestinal infection in adults includes a doctor's interview and examination, laboratory tests. They are carried out to confirm the diagnosis, identify the pathogen and exclude complications.

Clinical blood test: signs of inflammation may be detected, with dehydration - an increase in hemoglobin.

Urine analysis: if complications occur, protein, cylinders, and an increase in specific gravity may be detected.

Microbiological examination of feces: fecal culture is prescribed for bacteria (pathogens of dysentery, salmonellosis, escherichiosis, etc.), analysis for viruses (rotavirus, enterovirus), etc. This analysis helps the doctor identify the cause of the infection and decide how to treat it. Bacterial studies of vomit and gastric lavage can also be carried out.

A general analysis of feces (coprogram) allows you to clarify the affected part of the intestine. The presence of undigested fiber, fat, and muscle fibers indicates inflammation of the small intestine. A large amount of mucus, lumps, leukocytes, erythrocytes, epithelial cells indicates a process in the large intestine.

Serological diagnosis: a blood test is performed for antibodies to pathogens of dysentery, salmonellosis and others, and after 7-10 days the dynamics of their increase is evaluated.

Biochemical blood test: performed to assess kidney function, electrolyte disorders – a decrease in potassium, sodium, and calcium.

According to the indications, blood cultures for sterility (with prolonged fever), colonoscopy (with diarrhea for more than 14 days), X-ray or ultrasound of the abdominal cavity, stool tests for protozoa (giardia, amoebas) and other types of diagnostics can be prescribed.

Treatment of intestinal infection

Therapy depends on the severity of the condition. The basic principles are:

therapeutic nutrition;

rehydration – replenishment of liquid and salt losses;

taking sorbents – medicines that are able to remove bacteria, viruses and their toxins from the digestive tract;

correction of gastrointestinal flora disorders;

the use of enzymes to facilitate the digestion and assimilation of food;

prescribing antibiotics depending on the pathogen.

The main thing in intestinal infections is to prevent dehydration. Therefore, with diarrhea and vomiting, it is recommended to drink glucose-salt solutions. They can be prepared at home: add 1 tsp salt, 8 tsp sugar and lemon juice to 1 liter of boiled water. But pharmacy preparations are more convenient. The powders are diluted in 1 liter of boiled water and taken fractional, 1-2 tablespoons every 5-10 minutes. You can alternate them with tea, a decoction of rice, rosehip, fruit drinks, boiled water. The amount of alcohol consumed should be at least 1 liter in 4 hours. After each liquid stool, you must additionally drink 100-200 ml of the solution.

One of the main roles in the treatment of intestinal infection is played by enterosorbents - activated carbon, silicon dioxide, Enterumin and others. The preparations are the smallest particles with different sorption capacity. They bind and remove bacteria, viruses, toxins, decomposition products, gases. Their use reduces the load on the liver and kidneys, normalizes gastrointestinal motility and digestion, and helps restore beneficial microflora. When they are taken from the

first hours of the disease, the duration and frequency of loose stools, vomiting decreases, and the general condition improves.

Almost always, with diarrhea, the balance of the normal intestinal microflora is disrupted. To restore it, the doctor may recommend taking eubiotics (probiotics). These include preparations containing useful living microorganisms, their components or substances that stimulate their growth.

According to strict indications, specialists prescribe antibiotics, antimicrobials, and antiseptics.

Enzymes (pancreatin) are also used in intestinal infection. They are usually prescribed for 3-4 days of illness, during the period of diet expansion. To reduce bloating and gas formation, defoamers (simeticone group drugs) can be added to treatment, and antispasmodics for pain.

In case of severe infection – repeated vomiting and diarrhea, dehydration, fever over 39 degrees, the appearance of blood in the stool, the doctor will send for hospitalization. This is especially true for elderly people with heart disease, kidney disease, and diabetes mellitus.

Prevention

The main measures for the prevention of infectious diseases of the gastrointestinal tract are hygiene, proper cooking and storage of food.

Wash your hands thoroughly with soap before eating, after going outside, going to the toilet, and use sanitizers in public places.

Use boiled or bottled water for cooking and drinking.

Wash vegetables, fruits and berries.

Follow the temporary recommendations for cooking.

Do not use substandard or expired products.

Try not to swallow water when swimming in the sea, river, lake.

If someone in the family is sick, use individual towels, dishes, cutlery, bed linen to avoid transmission of infection. Wet cleaning should be carried out daily using disinfectant solutions.

Conclusion.

Thus, patients with different forms of intestinal diseases are and to complex bacteriological, allergic and serological examinations of healthy people based on the development of acute and chronic intestinal diseases of the body it should be recognized that increased sensitivity to bacteriaya plays an important role.

Bacteria of the results of bacteriological, serological and allergological studies compatibility with allergens indicates the peculiarity of skin fractures, BSO for this method is caused by representatives of the conditionally pathogenic intestinal flora of the intestine diagnostic methods for determining the etiology and pathogenesis of diseases allows to enter the Arsenal.

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ПЕДАГОГИЧЕСКИЕ НАУКИ

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AUTOCAD SOFTWARE FEATURES FOR 3D DESIGN

Annotation: *This article presents information about modern requirements for teachers «drawing», the possibilities of AutoCAD program and the advantages of works created in this program.*

Keywords: *graphics, design, engineer, object, 3D max, engineering graphics, scheme, architecture, automation.*

Today, pedagogues are required to acquire deep knowledge not only in their field, but also in modern information technologies, and to teach them to young people, especially pupils and students. Therefore, it is the duty of every professor and teacher working in general education schools, KHK and higher educational institutions to use modern graphic programs and teach pupils and students to work on a computer. Based on today's requirements, teachers of engineering graphics should have basic knowledge of at least five modern graphic programs and know how to design drawing prototypes on a computer using them, i.e. Photo Shop, Corel Draw, 3D MAX, AutoCAD and Flash. Because it is impossible to imagine the development of any modern educational electronic manuals without these programs.

Therefore, in order to perfectly create electronic training manuals, it is necessary for teachers of drawing of the 21st century to have at least a preliminary understanding of the graphic programs listed above.

The first to solve the problem that we set before ourselves, the AutoCAD system, which is now considered the international standard for automated drafting, is still popular among graphics programs, almost 30 years after its creation. AutoCAD is an excellent and popular automated design software that can create any type of schematics and drawings with high accuracy and quality. It also guarantees the full realization of the creative potential of the users of this program. For this reason, millions of designers, scientists, engineers and students, that is, from more than 80 countries of the world, in 18 languages, use the AutoCAD system as a matter of routine.

Among these modern programs, the AutoCAD program is excellent and popular, and it is an automated design program, which makes all types of schemes and drawings with high accuracy and quality. It also guarantees the full realization of the creative potential of the users of this program. For this reason, millions of designers, scientists, engineers and students, that is, from more than 80 countries of the world, in 18 languages, use the AutoCAD system as a matter of routine.

Therefore, this lesson aims to introduce the possibilities of three-dimensional design of simple geometric objects on a computer using the AutoCAD program and to teach algorithms for using their commands.

It is known that making clear images in engineering and construction architectural drawing, especially making lines formed by the intersection of surfaces, requires a lot of graphic operations, that is, spending a lot of time.

Modern computers and their software provide an opportunity to easily design graphic information in three dimensions. There are a number of graphic programs for this, among which the AutoCAD program provides the ability to perform two- and three-dimensional design works with high accuracy based on the given dimensions for engineering and construction architectural drawing.

Although computer-aided three-dimensional design is somewhat more complex than two-dimensional design, it has the following advantages:

1. Automatic execution of mutual intersection of object surfaces;
2. Change the mutual situation of the objects by transferring them to the main and additional views;
3. Painting the surfaces of objects in natural colors;
4. Analysis and development of completed three-dimensional rendered-painted objects in the requirements necessary for production;
5. View and observe the created three-dimensional model-item from any point in space.

Most importantly, the process of formation of this knowledge relies on the activity of the right hemisphere of the brain. As a result, the student's conscious mental perception activity is formed and creative. Therefore, the implementation of illustrative and cognitive functions of computer graphics not only serves as one of the factors that encourage students to think, to have a creative approach to images, but also plays an important role in the implementation of new ideas in students' thinking. plays, develops potential.

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PROFESSIONAL COMPETENCE STRUCTURE OF FUTURE TEACHERS OF THE FIGURE AND SET OF ACTIONS AIMED AT THEIR DEVELOPMENT

Annotation: *Correct choice of educational methods and techniques in the formation of professional skills of future teachers of drawing and important aspects in this regard, creation of a model for the process of formation of professional skills of future teachers of drawing in higher education institutions. Educational institutions and pedagogical skills are represented by a set of factors that serve to shape.*

Keywords: *Skill, methodology, physiological, psychological, technical, professional, model, analog, professional, component, person.*

In the formation of professional skills of future drawing teachers, it is important to choose the right educational methods, to master the methodology carefully in the organization of training sessions, especially practical sessions. When choosing educational methods in the teaching of drawing, attention was paid to the following: general goals of education; specific aspects and characteristics of a separate academic subject; the purpose of teaching the academic subject, the tasks and the content of the educational material intended for each individual lesson; the amount of time allocated for studying the educational material; level of training, psychological and physiological indicators of students; provision of educational, technical and equipment (educational equipment, instructional weapons, technical, computer and other material means) of the teaching process; level of professional training and personal qualities of the pedagogue.

Creation of a model of the process of formation of professional skills of future drawing teachers at the Higher Education Institution was one of the scientific-pedagogical tasks solved during the research period. "In the logic and methodology of science, a model is an analogue (sign system, structure, drawing) of the original copy of a certain natural or social phenomenon, a product of human culture, a conceptual-theoretical formation, etc., i.e. a model. Expanding and preserving knowledge (information) about this analog original serves to design, modify or control the original.

One of the more important aspects of the formation of professional skills is taking into account the structure of professional opportunities of the pedagogue. I.P., who researched the aspects of the professional activity of the pedagogue in acquiring pedagogical skills. Podlasyy developed the "Professional Possibilities

Structure of a Pedagogue" that sheds light on the spiritual and moral image of a teacher-educator and reflected in it the factors that serve to form pedagogical skills.

The analysis of scientific and pedagogical literature allows to determine the following composition of the professional competence of the future drawing teacher:

- motivational-value component (personal qualities that determine the place and direction of a person as an object of activity;
- cognitive component (availability of theoretical knowledge that ensures conscious activity);
- practical-activity component (knowledge and skills mastered by a person, tested in practice are considered the most effective);
- reflexive-evaluation component (independence, activity, creativity, creativity and self-evaluation of a person in the implementation of professional graphic work).

One of the more important aspects of the formation of professional skills is taking into account the structure of professional opportunities of the pedagogue. I.P., who researched the aspects of the professional activity of the pedagogue in acquiring pedagogical skills. Podlasiy developed the "Professional Possibilities Structure of a Teacher" which sheds light on the spiritual and moral image of a teacher-educator and reflected in it the factors that serve to form pedagogical skills.

The professional competence of future teachers encompasses a comprehensive framework that integrates knowledge, skills, attitudes, and values required to effectively perform teaching duties. Developing these competencies involves a systematic approach that aligns theoretical knowledge with practical application, ensuring that future educators are well-prepared for the complexities of the teaching profession. The structure of professional competence for future teachers integrates subject knowledge, pedagogical expertise, communication skills, and ethical values. A systematic and reflective approach to their development, combining theoretical foundations with practical experience, is essential. By engaging in targeted actions such as mentorship, experiential learning, and ongoing professional development, future teachers can build the competencies necessary for effective and impactful teaching.

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O‘SMIRLARDA PSIXOLOGIK SAVODXONLIKNI ANIQLASHDA KORRELATSION TAHLIL

Annotatsiya. *Ushbu maqolada o‘smirlar orasida psixologik savodxonlikni aniqlashda L.S. Kolmogorova metodikasining ahamiyati va sotsial intellekt bilan o‘zaro korrelatsiyasi tahlil qilinadi. O‘smirlarning psixologik savodxonligi va sotsial intellekt darajasi o‘rtasidagi o‘zaro bog‘liqlik aniqlanadi, bu esa o‘smirlarning ijtimoiy va hissiy rivojlanishida muhim rol o‘ynaydi. Tadqiqot natijalari, psixologik savodxonlikni oshirish uchun ta'lim jarayonida sotsial intellektni rivojlantirish zarurligini ko‘rsatadi.*

Kalit so‘zlar: *o‘smirlar, psixologik savodxonlik, Kolmogorova metodikasi, sotsial intellekt, korrelatsiya.*

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CORRELATION ANALYSIS IN DETERMINING PSYCHOLOGICAL LITERACY IN ADOLESCENTS

Abstract. *In this article, in determining psychological literacy among adolescents, L.S. The importance of Kolmogorov's methodology and its correlation with social intelligence are analyzed. The relationship between the psychological literacy of adolescents and the level of social intelligence is determined, which plays an important role in the social and emotional development of adolescents. The results of the study show the need to develop social intelligence in the educational process to increase psychological literacy.*

Key words: *teenagers, psychological literacy, Kolmogorov's method, social intelligence, correlation.*

Kirish. O‘smirlik davri insonning psixologik rivojlanishida muhim ahamiyatga ega bo‘lgan davrdir. Bu davrda o‘smirlar nafaqat intellektual, balki sotsial intellektni ham shakllantiradilar. Sotsial intellekt, boshqalar bilan muloqot qilish va ularning hissiyotlarini tushunish qobiliyati bo‘lib, psixologik savodxonlikni oshirishda muhim rol o‘ynaydi. Ushbu maqolada o‘smirlarda psixologik savodxonlikni aniqlashda L.S. Kolmogorova metodikasining ahamiyati va sotsial intellekt bilan o‘zaro korrelatsiyasi tahlil qilinadi.

Adabiyotlar sharhi. O‘smirlarda psixologik savodxonlikning o‘rganilishi, ularning rivojlanishi va jamiyatda o‘z o‘rnini topishida muhim ahamiyatga ega. Ushbu sohada olib borilgan tadqiqotlar, o‘smirlarning psixologik bilimlarini, hissiyotlarini, va muloqot qobiliyatlarini rivojlantirishning usullarini aniqlashga qaratilgan.

Psixologik savodxonlik, insonning o‘z hissiyotlarini, boshqalarning hissiyotlarini va muloqot jarayonlarini tushunish va boshqarish qobiliyatidir. O‘smirlarda bu savodxonlikning rivojlanishi ularning ijtimoiy munosabatlari, stressni boshqarish va o‘z-o‘zini anglashiga katta ta’sir ko‘rsatadi. Goleman (1995) o‘z asarida hissiy intellekt va psixologik savodxonlik o‘rtasidagi bog‘liqlikni ta’kidlaydi, bu esa o‘smirlarning o‘zlariga va boshqalarga nisbatan munosabatlarini shakllantirishda muhim rol o‘ynaydi.

L.S. Kolmogorova metodikasi kabi psixologik o‘lchov usullari, o‘smirlarning psixologik savodxonligini aniqlashda qo‘llaniladi. Bu metodika o‘smirlarning hissiy va psixologik bilimlarini baholashga yordam beradi. O‘tgan tadqiqotlar (Mayer va Salovey, 1997) shuni ko‘rsatadiki, psixologik savodxonlik darajasi yuqori bo‘lgan o‘smirlar stressga kamroq duch kelishadi va hissiy ziddiyatlarni yaxshiroq boshqaradilar.

Psixologik savodxonlik va sotsial intellekt o‘rtasidagi korrelatsiya keng o‘rganilgan mavzulardan biridir. Brackett (2011) o‘z tadqiqotida psixologik savodxonlik darajasi yuqori bo‘lgan o‘smirlar sotsial intellekt darajasining ham yuqori bo‘lishini aniqlagan. Bu natijalar, o‘smirlar orasida muloqot va hissiy anglashning o‘zaro bog‘liqligini ko‘rsatadi.

Psixologik savodxonlikni rivojlantirish uchun ta’lim muassasalarida psixologik ta’lim dasturlari ko‘plab tadqiqotlar va eksperimentlar orqali amalga oshirilgan. Bu dasturlar o‘smirlarni psixologik bilimlar bilan tanishtirib, ularning hissiy va ijtimoiy ko‘nikmalarini rivojlantirishga qaratilgan. Murodova (2020) o‘z tadqiqotida psixologik ta’lim dasturlarining o‘smirlarning psixologik savodxonligi va sotsial intellektini oshirishdagi samaradorligini ko‘rsatdi.

Psixologik savodxonlikning o‘smirlarning ruhiy salomatligiga ta’siri ham muhim tadqiqot mavzusidir. O‘smirlarda psixologik savodxonlik yuqori bo‘lsa, ruhiy muammolar, masalan, depressiya va bezovtalik darajasi past bo‘lishi ko‘rsatilgan (Boden, 2015). Bu tadqiqotlar psixologik savodxonlikni oshirish ruhiy salomatlikni yaxshilashga yordam berishini ta’kidlaydi.

O‘smirlarda psixologik savodxonlikni oshirish uchun turli strategiyalar, masalan, rolli o‘yinlar, psixologik treninglar va muloqot ko‘nikmalarini rivojlantirishga qaratilgan dasturlar keng qo‘llanilmoqda. Ushbu tadqiqotlar (Saarni, 2021) shuni ko‘rsatdiki, o‘smirlar o‘zaro aloqalarini yaxshilash va hissiy muammolarni hal qilishda ushbu strategiyalardan samarali foydalanadilar.

L.S. Kolmogorova metodikasi psixologik savodxonlikni o‘lchashda keng qo‘llaniladi. U o‘smirlar orasida psixologik bilimlarni aniqlash va baholashga yordam beradi. Shu bilan birga, sotsial intellekt sohasida olingan tadqiqotlar shuni ko‘rsatadiki, sotsial intellekt darajasi yuqori bo‘lgan o‘smirlar psixologik

muammolarni hal qilishda ko‘proq muvaffaqiyatga erishadilar (Goleman, 1995; Mayer va Salovey, 1997).

O‘smirlarning psixologik savodxonligi va sotsial intellekti o‘rtasidagi korrelatsiyani o‘rganish orqali, o‘smirlar ta’lim jarayonida psixologik bilimlarni o‘zlashtirishga qiziqishlari ortadi. O‘tgan tadqiqotlarda o‘smirlarning psixologik savodxonligi ularning sotsial intellekt darajasiga bevosita bog‘liqligi tasdiqlangan (Brackett, 2011).

Muhokama va Tahlillar

L.S. Kolmogorova metodikasini qo‘llash orqali 50 nafar o‘smirning psixologik savodxonligini aniqladik. Ular orasida sotsial intellekt darajasi o‘lchandi. Olingan ma’lumotlar asosida korrelatsion jadval tuzildi. O‘smirlarning psixologik savodxonligi va sotsial intellekt darajalari o‘rtasidagi korrelatsion tahlil orqali, olingan ma’lumotlar asosida korrelatsion jadval tuzildi. Jadvalda ko‘rsatilgan natijalar, psixologik savodxonlik darajasi yuqori bo‘lgan o‘smirlar sotsial intellekt darajasini ham yuqori ko‘rsatgani aniqlangan. Bu, o‘smirlarning hissiy va ijtimoiy ko‘nikmalari o‘rtasidagi ijobiy bog‘liqlikni tasdiqlaydi.

Korrelatsion jadval

O'smirlar	Psixologik Savodxonlik (Natija)	Sotsial Intellekt (Natija)
1	78	80
2	65	70
3	90	85
4	55	60
5	70	75
...	...	...
50	82	83

Korrelatsion tahlil natijalari shuni ko‘rsatdiki, psixologik savodxonlik va sotsial intellekt o‘rtasida kuchli ijobiy korrelatsiya mavjud ($r = 0.85$). Bu natijalar shuni anglatadiki, o‘smirlarning psixologik savodxonligi yuqori bo‘lganda, ularning sotsial intellekt darajasi ham oshadi. Bundan tashqari, psixologik savodxonlik darajasining yuqoriligi, o‘smirlarning stressni boshqarish va muloqotda ijobiy o‘zgarishlar qilish imkoniyatlarini oshiradi. Natijalar, psixologik savodxonlikni rivojlantirish ta’lim jarayonida muhim ahamiyatga ega ekanligini ko‘rsatadi. Shu sababli, ta’lim muassasalarida psixologik bilimlarni oshirishga qaratilgan dasturlarni joriy etish zarurati tug‘iladi.

Xulosa

Ushbu tadqiqot o‘smirlarda psixologik savodxonlikni aniqlashda L.S. Kolmogorova metodikasining samaradorligini va sotsial intellekt bilan o‘zaro korrelatsiyasini ko‘rsatdi. Natijalar shuni ko‘rsatadiki, psixologik savodxonlikning yuqori darajasi sotsial intellektni rivojlantirishda muhim

ahamiyatga ega. Shuning uchun, ta’lim jarayonida psixologik bilimlarni o‘zlashtirishga e'tibor qaratish o‘smirlarning umumiy rivojlanishiga katta hissa qo‘shadi. O‘smirlarda psixologik savodxonlik haqida olib borilgan tadqiqotlar, ularning ijtimoiy va hissiy rivojlanishida psixologik bilimlarning ahamiyatini ko‘rsatadi. Psixologik savodxonlikni rivojlantirish o‘smirlarning ruhiy salomatligi va ijtimoiy munosabatlarini yaxshilashda muhim omil hisoblanadi. Tadqiqotlar natijalari, o‘smirlarni psixologik bilimlar bilan tanishtirish va sotsial intellektni oshirishga qaratilgan dasturlarni amalga oshirish zarurligini ta’kidlaydi.

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THE UNIQUENESS OF THE "QUESTION" CONSTRUCTION IN UZBEK AND ENGLISH LANGUAGES

Abstract. *This study investigates the structural and functional uniqueness of question constructions in Uzbek and English, focusing on their syntactic, morphological, and pragmatic characteristics. By analyzing a diverse set of data, including conversational exchanges, literary texts, and media, the research categorizes questions into three main types: yes/no questions, wh-questions, and tag questions. The findings reveal distinct syntactic structures; for instance, English typically employs an auxiliary verb + subject order, while Uzbek utilizes flexible word order and specific particles. Morphologically, English relies on auxiliary verbs, whereas Uzbek uses suffixes to convey nuances in politeness and formality. Pragmatic analysis shows that cultural factors significantly influence questioning strategies, with Uzbek questions reflecting social hierarchies and relational dynamics, while English questions prioritize directness.*

Keywords: *Question Construction, linguistic Analysis, Uzbek Language, English Language, Syntactic Structure, morphology.*

INTRODUCTION

Questions are fundamental to communication, serving not only to elicit information but also to express curiosity, doubt, and engagement. This paper investigates the uniqueness of question constructions in Uzbek and English, two languages with distinct grammatical structures and cultural contexts. Understanding these differences enhances cross-cultural communication and language learning.

MATERIALS AND METHODS

This study employs a comparative linguistic analysis, focusing on:

1. **Data Collection**: Selected samples of conversational and written texts in both languages, including interviews, literature, and media.
2. **Analysis Framework**: A structural approach to examine syntax and morphology, along with a pragmatic lens to assess meaning and context.
3. **Types of Questions**: Classification into three categories:
   - Yes/No Questions
   - Wh-Questions
   - Tag Questions

RESULTS AND DISCUSSION

Syntactic Structures:

- **English**: Typically follows an auxiliary verb + subject order for yes/no questions (e.g., "Are you coming?"). Wh-questions start with a wh-word (e.g., "What do you want?").
- **Uzbek**: Employs a more flexible word order and often uses specific particles (e.g., "mi" for yes/no questions). For instance, "Siz kelasizmi?" translates to "Are you coming?" but can also be rearranged for emphasis.

Morphological Features:

- **English**: Relies on auxiliary verbs and modal verbs to form questions. The tense is often indicated by the auxiliary (e.g., "Will you go?").
- **Uzbek**: Utilizes suffixes and particles that can alter meaning based on context. The addition of suffixes can change the formality or politeness of a question, such as using "mi" or "emasmi" to soften inquiries.

Pragmatic Considerations:

- **Cultural Influences**: In Uzbek, questions often reflect social hierarchies and relationships. For example, the use of honorifics or specific verbs can indicate respect. In contrast, English questions tend to prioritize directness and clarity, reflecting a more egalitarian communication style.
- **Conversational Context**: The context in which questions are asked is critical. In Uzbek culture, indirect questions may be preferred to avoid confrontation or discomfort, whereas English speakers may feel comfortable asking direct questions even in sensitive situations.

Functional Variations:

- **Politeness Strategies**: In English, questions can be softened with phrases like "Could you..." or "Would you mind...," which reflects a politeness strategy. Uzbek often employs forms of the verb that suggest deference or politeness without changing the core question structure.
- **Rhetorical Questions**: Both languages use rhetorical questions but differ in frequency and context. English often employs them to engage the audience or emphasize a point, while Uzbek rhetorical questions might be used to imply something without directly stating it.

The findings underscore significant differences in how questions are constructed in Uzbek and English, reflecting deeper cultural and communicative norms.

1. **Cultural Context and Communication**:
   - The structure of questions in Uzbek not only serves a grammatical function but also carries cultural weight. The choice of question form can indicate the speaker's social standing, relationship to the listener, and context of the interaction. This is especially evident in formal settings, where indirect questioning may be used to show respect or avoid offending.
   - In contrast, English speakers often use questions to assert their opinions or gather information more directly, reflecting a cultural preference for transparency and straightforwardness.

2. **Learning Implications**:
   - For language learners, understanding these differences is crucial. Uzbek learners of English might struggle with the directness required in English questioning, while English learners of Uzbek might find the subtleties of politeness and indirectness challenging. Tailored teaching approaches that address these unique aspects can facilitate better comprehension and usage of questioning techniques in both languages.
3. **Pragmatic Nuances**:
   - The pragmatic analysis highlights that the same question can have different implications based on cultural context. For example, a straightforward "Why did you do that?" in English may come across as confrontational, whereas its Uzbek equivalent may be seen as more neutral or even inquisitive, depending on the relationship between the speakers.
4. **Future Research Directions**:
   - This study opens avenues for further research, such as examining how digital communication platforms influence questioning strategies in both languages. Additionally, exploring how younger generations adapt traditional questioning forms in contemporary contexts could provide further insights into the evolution of language use.

CONCLUSION

This research highlights the uniqueness of question constructions in Uzbek and English, contributing to a better understanding of linguistic diversity. The differences in syntactic structures, morphological features, and pragmatic considerations illustrate how culture shapes language. Future studies could expand on this by exploring how digital communication influences questioning strategies in both languages.

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REFLECTION OF THE NATIONAL STRUGGLE IN THE WORK "MANIFESTO OF A YOUNG MAN"

Annotation: *In the novel "Manifesto of a Young Man", which is one of Mir Jalal's most famous works dedicated to the national struggle, the fate, livelihood and life of the people have been widely reflected.*

Key word: *unity, patriotism, struggle, people*

Critic M. Arif thinks that patriotic feelings are fully embodied in the novel. In the article "Azerbaijan during Soviet times" written in 1957, the critic notes that: "Manifesto of a young man" was written with patriotic passion." (1. p. 69).

The character of Mardan draws the main attention in the work. He is an image that represents the dissatisfaction of the peasants who are fed up with arbitrariness and oppression. Literary critic Ahad Huseynov said about the work: "To many, even to some scholars who studied Mir Jalal's work, Mardan's revenge was seen as a coincidence, an expression of personal dissatisfaction."

Literary critic Yagub Ismayilov mentions Marda's hatred of inequality at the beginning of the work, but emphasizes that Marda will understand many things later.

"True, this protest still sounds within the walls of a small peasant hut and is based on it. It cannot be said that Mardan understood and deeply understood the essence and historical roots of social inequality". (5. p. 111)

Apart from that, the other main character of the work is Sona. Literary critic Tayyar Salamoglu expresses his thoughts about Sona's character like this. "Sona, as a mother figure, embodies the best qualities of Azerbaijani women and mothers, and also symbolizes the motherland - Azerbaijan." (1.p.880)

In the eighth chapter, he does not sell the "Yusif-Züleyka" carpet, which he wove for his son, to the British. He says whether I will throw it to the dog or not sell it. The image of Sona is an expression of the Azerbaijani people who resisted the British colonizers. In general, Marda's family, especially Bahar's bitter fate, is in the foreground. Spring is a generalized image not only of one family, but of thousands of children who have not seen the sun of freedom. The most heartbreaking part is when he freezes to death in the street. The dream of Bahar, who was displaced from his home for a piece of bread, was to return home. By writing the life of Mir Jalal Bahar, he states that this regime is so cruel that it does not hurt even pure and clean children. Although at the beginning of the work, it is thought to be Mardan's personal revenge, but later it is understood that the true

essence of this revenge is a general expression of the people's dissatisfaction. we see how courageous Marda is in her fight for social injustice. In some moments, especially Mardan's internal monologues and thoughts, he describes the injustice and the exploitation of the people. He thinks about his helpless mother and younger brother Bahar, who has not seen the day since childhood. Marda, who does not hesitate to speak the truth, has a sad end and is killed by hanging on the gallows. The writer tried to convey the pain and miserable life of the Azerbaijani people in the example of this small family of three people. At this time, he gave a clear and complete picture of the revolution caused by the impact of the revolution on the economic and political life of Azerbaijani workers.

In general, the main reason for the great popularity and popularity of the work is the sincerity of the work, the expression of the writer's love for hardworking people and his special hatred for those who oppress them.

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YOUTH ACTIVISM IN BUILDING A NEW RENAISSANCE

Abstract. *This article discusses the fact that young people are the creators of the third renaissance. It describes the conditions that are being created for young people today, the comprehensive support and all opportunities that are being created to mobilize all their talents and minds to work selflessly for the development of the homeland.*

Keywords: *Third Renaissance, model, method, totalitarian.*

INTRODUCTION

We have set ourselves the main goal of creating a new Renaissance in Uzbekistan, that is, the foundation of the third Renaissance, through large-scale democratic changes in our country, including educational reforms. Speaking about this, first of all, the content - essence of the third Renaissance should be deeply understood by each of us, our entire society.

The Renaissance is a period of special cultural and intellectual development that occurred in Central Asia, Iran, China (9th-12th and 15th centuries) and Western Europe. The term "Renaissance" was originally applied to the cultural and educational upsurge in Italy (14th-16th centuries), which was considered a stage of transition from the stagnation of the Middle Ages to a new era. According to sources, the first dirham coin minted in Samarkand during the Renaissance, that is, in the 9th-10th centuries, constituted one third of the money in circulation in all of Europe and the Middle East. The Ancient East, which has always been the cradle of spirituality and culture, has produced thousands of geniuses, wise men, and scholars. It is impossible not to say that many discoveries have been made on the soil of this land. In the embrace of this amazing place, masterpieces that will last for centuries have been created and have become immortal. It is an inexhaustible source of spiritual nourishment for humanity. Of course, in any era, an enlightened society has always been superior to any ideological society.

MATERIALS AND METHODS

Totalitarian - characterized by violence, aimed at limiting or eliminating democratic freedoms and individual liberty. Over the past few years, in a very short period of time from a historical perspective, the world has been recognizing the emergence of a new Uzbekistan. The state, which was previously described as one of the last surviving islands of the Soviet totalitarian regime, which remained outside the avenues of human development, refused to make changes and real

reforms as much as possible, and chose palliative half-measures as its "own model" of development, suddenly became one of the leaders of world reforms. Uzbekistan appeared on the international stage with a completely different image. The prestige and influence of our country in the world has increased to an unprecedented level.

RESULTS AND DISCUSSION

A model is an informational image of an object, person or system. This term originally referred to the plans of a building in English at the end of the 16th century. It is derived from the word "module" in French and Italian. After gaining independence, we had to study and engage in national revival for a quarter of a century. Now, after we have moved from national revival to national rise, the head of state has set the strategic task of achieving the third Renaissance. In fact, historically, we have experienced two Renaissances: the first in the 10th - 12th centuries, the second in the last quarter of the 14th century - the first quarter of the 16th century. In the first Renaissance, great geniuses from our country such as Ferghani, Khorezm, Faroubi, Beruni, Ibn Sina, Yusuf Khos Khajib, Mahmud Kashgari, Mahmud Zamakhshari, great hadith scholars - Bukhari, Termizi, mutakallim - Maturidi and Abul Muin. In the Second Renaissance - Ulugbek, Ghiyosiddin Jamshid Koshi, Qazizoda Rumi, Ali Kushchi, Lutfi, Jomi, Navoi, Behzod, great architects, composers, painters, historians emerged and created works that amaze the world even today. During both Renaissances, we were among the advanced, developed nations of the world. If we want to reach such a level again, we need to implement the Third Renaissance.

It encourages us to mobilize all our talents and minds to work selflessly for the development of the homeland. The reforms and their literal essence are understood first of all by young people, their progressive representatives, the young people. Because one of the most important tasks facing modern personnel is to rationally organize the work of those around them, knowing their identity, their abilities, individuality, personal qualities and characteristics, as qualified specialists, and to be active as talented professionals in all areas of socially useful work. This work, in addition to itself, serves to fulfill such an important task as instilling in the minds of those around them the most progressive ideas that serve the strength of the Motherland. After all, as our first president emphasized, the results of this work are expressed in ".... first of all, strengthening the faith and beliefs of our youth, strengthening their will, and raising them to be well-rounded people with their own independent opinions." "As we mobilize all our strength and resources so that our people are no less than anyone else, and that our children live stronger, more educated, wiser, and, of course, happier than us, the issue of spiritual education is undoubtedly of paramount importance in this regard."

CONCLUSION

Wise people say that "Youth is the flower of the flower of life." Youth is a great opportunity for every person to realize their identity, strive for perfection, and find their worthy place in life. The creators of today's enlightened society

should feel that the future of our homeland, the tomorrow of New Uzbekistan, is in their hands. In order to increase their position and responsibilities in today's society, they should seize every moment, correctly assess the value of youth, if it cannot be returned, and diligently strive to build the Third Renaissance. In short, any great plans, great ideas will gain vitality and reality only if they are directly related to human needs, improving their lives, freedom, growth, and spiritual maturity. Otherwise, they will remain just a dream. The main directions and tasks were outlined in our President's congratulatory speech.

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ENHANCING MOTIVATION FOR LEARNING ENGLISH AMONG NON-PHILOLOGY STUDENTS THROUGH THE USE OF ENTERTAINING AND EDUCATIONAL CONTENT

Abstract: *This paper explores strategies for boosting English language learning motivation among non-philology students by integrating entertaining and educational content. Traditional approaches often struggle to engage students who don't specialize in language studies, leading to disengagement and reduced motivation. This study suggests innovative methods, such as multimedia content, gamification, real-life scenarios, and task-based learning, to create an enjoyable and meaningful learning experience. Findings indicate that these strategies increase students' interest, promote language acquisition, and foster positive attitudes towards language learning, particularly among non-philology students.*

Keywords: *Motivation, English language learning, Non-philology students, Gamification, Multimedia, Educational content, Language acquisition, Engagement, Task-based learning*

Introduction

For students in non-language disciplines, English is often viewed as supplementary, making it harder to stay engaged and motivated. Traditional English language classes tend to rely on textbook-centered approaches that don't always align with these students' interests, goals, or fields of study. This creates a gap between their academic objectives and the language content presented, often reducing motivation.

Innovative approaches using entertaining and educational content, such as interactive media, real-life tasks, and gamified learning experiences, have shown potential for bridging this gap. By making English lessons more enjoyable and directly relevant to students' personal interests and fields, these methods provide a fresh approach to learning. The study investigates several types of content and engagement techniques to assess their effectiveness in enhancing motivation, ultimately aiming to create a learning environment where students are both entertained and educated.

Strategies for Enhancing Motivation with Interactive Content:

- Multimedia Content Integration.

Incorporating films, music, podcasts, and animated series into lessons introduces students to authentic language use in an engaging format. This not only enhances

listening skills but also gives insights into cultural nuances and modern language use, making the content feel relevant and engaging.

- Gamification of Learning Activities

Gamification in education involves using game elements, such as scoring points, achieving levels, or earning rewards, to increase motivation. Digital platforms like Kahoot!, Duolingo, and Edmodo allow for customized, interactive quizzes and activities that make language learning both challenging and fun.

- Role-Playing and Simulations in Real-Life Scenarios

Role-playing and simulation exercises create immersive environments where students can practice conversational English in realistic settings. For example, scenarios like “Ordering in a Restaurant” or “Job Interview Practice” provide practical applications, boosting both confidence and relevance in using the language.

- Task-Based Learning Linked to Field of Study

Engaging students in tasks related to their areas of expertise (e.g., preparing a presentation on a topic within their major) enables them to use English in contexts they find valuable. This technique combines language learning with professional development, demonstrating how English can directly benefit their careers.

- Social Media and Digital Interaction

Utilizing social media platforms and digital communities helps students interact with real-world English content and native speakers. Platforms like YouTube or Instagram offer opportunities to explore content aligned with their interests, from tutorials and product reviews to interviews with experts in their field.

- Culturally Relevant Content and Discussions

Including culturally relevant content connects English to students' personal lives and interests. For example, exploring the cultural impact of English in global music, sports, and entertainment, or comparing cultural norms and slang, makes lessons relatable and deepens cultural understanding.

Results and Discussion

The results from classes employing entertaining and educational content suggest notable increases in motivation and engagement levels among non-philology students. Many students reported feeling more enthusiastic about participating in English lessons that incorporated interactive and multimedia elements. They found it easier to relate to language through real-world examples and entertaining content, which in turn made the learning experience more memorable and enjoyable.

One of the main findings was that students’ perception of English shifted from a mandatory subject to a valuable skill, especially when it was linked to their professional and personal goals. Students displayed improved language retention and greater willingness to continue studying independently when content was presented in an engaging way. However, it was also observed that overuse of purely entertaining elements without clear educational objectives could potentially detract from the effectiveness of learning outcomes.

Conclusion

The incorporation of entertaining and educational content into English lessons presents a promising approach to increasing motivation among non-philology students. By creating a learning environment that aligns with students' real-world interests and professional aspirations, educators can make language learning both relevant and enjoyable. The use of multimedia, gamification, role-play, and personalized content offers students practical reasons to value English as a tool for both personal growth and career advancement. Further research could explore content customization according to students' academic specializations to enhance engagement further.

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BAQSÍ, JÍRAWSHÍLÍQ HÁM MUZÍKA KÓRKEM ÓNERINIŃ RAWAJLANÍW TARIYXÍNAN

El aralap palwan, jıraw qıssaxan
Qural etip duwtar, ǵobız uslaǵan
Dástan aytsa aytıs sonnan baslaǵan
Jiyen jırawlardıń ávladınanman

Annotatsiya: *maqalada baqsı, jırawshılıq hám muzıka kórkem óneriniń rawajlanıw tariyxı haqqında sóz júritiledi.*
Gilt sózler: *xalıq dóretiwshiligi, muzıka, kórkem óner, doretiwshilik.*

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BAKSI-JIRAYU AND FROM THE HISTORY OF THE DEVELOPMENT OF MUSICAL ART

Abstract: *The article talks about the history of the development of the art of baksi, fats and music.*
Keywords: *folk art, music, art, creativity.*

Xalqımızdıń danalıǵına, dóretiwshiligine qanshellı tásiyn aytsaqta azday seziledi. Qaralqalpaq folklorında 100 tomlıq biybaha mánáwiy baylıq dúnyada hesh bir elde joq. Bul basqıshtı basıp ótiw jolında ne bir sózge sheshen, qollarına naǵıs pitken Musa baqsıday biyik lapızlı, Jiyen jırawday talmas ǵayrat iyeleri bizlerdiń babalarımız ekeninen shin kewilden maqtanısh sezimin sezip turamız.

Prezidentimiz Sh.M.Mirziyoyev: “Ótken jılı qaraqalpaqstanlıq alımlar tárepinen 100 tomnan ibarat “Qaraqalpaq folklorı” baspadan shiǵarılǵanı, hesh gúdiksiz, úlken miynet jemisidur. Endigi wazıypa áne usınday siyrek ushırasatuǵın mánáwıy baylıq jas ávladımız qálbinen tereń orın alıwı ushın perzentlerimizdiń kitapqumarlıq mádeniyatın asırıwdan ibarat” degen edi. Biz jaslar babalarımız miyrasın asırap abaylawǵa, sap halında keleshekke jetkeriwdi maqsetimiz dep bilemiz.

Qaraqalpaq xalqında duwtar shertip, qosıq aytatuǵın óner iyesi baqsı dep ataladı. Baqsı ashıqlıq dástanların atqarıwı menen Orta Aziya ellerinde keń taralǵan. Qaraqalpaqlarda “baqsı”, ózbek hám túrkmenlerde “baxshi”, qazaqlarda “jırshı”, Ázerbayjanlarda “ashug”, gruzinlerde “mısagan”, Armiyanlarda “gusan” sózleri xarakteri jaǵınan ulıwma uqsaslıǵın ǵana ańlatıp qalmastan, olardıń atqarıwshılıq ónerinińde jaqınlıǵın kórsetedi. Baqsıshılıq óneriniń bunday jaqınlıqları olardıń kóp ásirlik ekonomika hám mádeniy baylanıslarınıń tereń tamırlarınıń keń en jayıp urqan atqanlǵınan derek beredi. Qaraqalpaq muzıka mádeniyatı tarawında baqsıshılıq óneri ózleriniń atqarıwshılıq jollarına qaray bir qansha mekteplerge bólinedi. Filologiya ilimleriniń doktorları N. Dáwqaraev, Q.Aymbetovlar baqsıshılıq mektebin Muwsa hám Súyew mektebi dep ekige bóledi. Olardan burında bir neshe baqsılar bolıp bul jollarda aytıp kelgen, bıraqta kóbisiniń atı málim emes ekenligin aytıwımız kerek. Muwsa hám Súyewlerden ilgeri Xorezm jerinde “Shaǵataylı” atı qosıq bolıp tillerge dástan bolǵan ápsanalıq baqsı Eshbay ótken. Ol pútkil Xorezm oypatlıǵında jasawshı ózbek, qaraqalpaq, túrkmenler arasında keńnen belgili bolıp, onı ózbeklerde, qaraqalpaqlarda, túrkmenlerde ózlerimizdiń baqsımız desedi.

Uzaq dáwirlerden berli áyne qaraqalpaqlar arasında onıń mádeniyatınıń, úrp-ádet dástúrleriniń tikleniwine, rawajlanıwına tiykar salǵan jıraw hám baqsılarımız dep bilemiz. Házirgi kúnge shekem jetip keliwinde jıraw baqsılarımız qansha basqıshlardı ótip keldi, aytatuǵın bolsaq bir waqıtları bul tarawǵa itibar berilmey qalǵan. Bıraq 1992-jılı Muzika hám kórkem óner bilim jurtında onıń direktorı M. Kamalovtıń baslaması menen usı bólim ashılıp keńnen rawajlandı. Atap ótetuǵın bolsaq sol dáwirde jasap ótken Genjebay Tilewmuratov, Turǵanbay Qurbanov, Jaqsılıq Sırımbetov, Qoshqarbay Qosjanov, Karimbay Tnıbaev sıyaqlı kóplegen jıraw hám baqsılarımız xalqımızdıń kewlinen shıqtı dep oylaymız. Sebebi házirgi kúnde olardıń áwladları keyingi áwladlardı tarbiyalawǵa mıyassar bolıp atır. Ázelden kiyatırǵan qaraqalpaq xalqınıń ata miyrası bolǵan jırawshılıq óneri XIV ásirden baslap Soppaslı Sıpıra jırawdan házirgi kúnge shekem ustaz shákirt jolı arqalı jetip kelgen. Qobız áspabında tiykarınan jırawlarımız atqaradı. Olardıń repertuarında tiykarınan terme tolǵaw, qáhármanlıq, batırlıq dástanlar bolıp olardan “Alpamıs”, “Edige”, “Qırıq qız”, “Qoblan” h.t.b. orın alǵan. Jırawlar atqaratuǵın qobız áspabı ilimiy dereklerde tiykarınan IX-X-ásilerden Qorqıt ata onıń tiykarshısı esaplanıp házirgi kúnge shekem ata miyras esabında bizge jetip kelgen hám bul tarawdı ullı jırawlarımız elede rawajlandırıp, házirde maqtana alatuǵın dárejelerge jetkizip atır.

Sebebi bizlerdiń jıraw baqsılarımız shet el mámleketlerinde joqarǵı jetiskenliklerge erisip qaraqalpaq jırawshılıq kórkem ónerin tanıtıp atır. Jırawshılıq óneri qaraqalpaq mádeniyatında ullı dúrdanalardıń biri desek adaspaymız, sebebi házirgi kúnde bul taraw boyınsha kóplegen jańalıqlar, is-ilajlar alıp barılıp atırǵanı tek ǵana mámleketimiz boylap emes, al shet el mámleketleri boylap da alıp barılıp atır. Búgingi globallasıw zamanına kelip bul tariyxıy kórkem óner itibardan shette qalmadı. Mámleketimiz basshısı baslaması

menen baqsıshılıq mektepleri iske túsirilgeni áyne baqsıshılıq tarawın jaqsılaw, saqlaw, házirgi jas áwladqa jetkiziw ushın jaqsı shárayat jarattı. 2018-jıl 1-noyabr kúni bul tarawǵa tiyisli taǵı bir tariyxıy qarar – Prezidentimizdiń “Xalıq aralıq baqsıshılıq kórkem óneri festivalin ótkeriw haqqında”gı pármanı qabıllandı. Shólkemlestirilgen komitet dúzilip, keń kólemli tayarlıq jumısları alıp barıldı.

Jáne de Prezidentimiz tárepinen “Qaraqalpaqstan xalıq baqsısı”, “Qaraqalpaqstan xalıq jırawı” siyaqlı ataqlar tastıyıqlandı.

Keyingi jıllarda respublikamizdıń barlıq tarawlarında keń kólemli reformalar ámelge asırılıp atır. Bul reformalar korkem oner, tiykarınan muzika korkem oneri tarawına da tikkeley tiyisli. Sebebi, Ozbekstan Respublikasi Prezidentiniń 2020-jil 26-maydagi PF-6000-sanli “Madeniyat ham korkem oner salasınıń jamiyet turmısındaǵı ornı ham tasirin jane de asırıw ilajları haqqındaǵı” pármanı madeniyat ham korkem oner salasın rawajlandırıw, onin tásirliligin jane de asırıwdı názerde tutadı. Sol sebepli keyingi jıllarda elimizde ayyemgi xalıq namaları, qosıqları hám dastanların jazıp alıw olardı qayta baspadan shıǵarıw, nota toplamların islep shıǵıw boyınsha ken kolemli jumıslar alıp barılmaqta.

Qaraqalpaq milliy muzika miyrasların juda bay ham ayyemgi tariyxqa iye. Bul bahasız miyraslardı ilimiy-ameliy tarepten uyreniw, ózlestiriw jumıslarına sońǵı jillarda barǵan sayın kóbirek itibar berilip atır. Tariyxtan belgili, qaraqalpaq milliy muzika úlgilerin dásturge kóre, ustaz-shakirtine awızeki tarizde úyretken. Yaǵnıy, ustaz atqargan nama yamasa qosıqtı onıń shakirti takirarlawı ham sol tıykarda ozlestiriwi kerek bolgan. Bul bir tárepten, shakirttiń tınlaw ham yadta saqlap qalıw qabiletin rawajlandırǵan. Basqa tarepten bolsa, bul proceste ustaz oz shakirtiniń qate-kemshiliklerin korsetken, usınıń menen birge, shakirtiniń tarbiyası da ustazdıń waziypasına kirgen. Elimizde XX asirdiń birinshi yariminan baslap qaraqalpaq xalıq namaların notaga túsiriw ham qayta islew boyınsha jumıslar alıp barıldi. 1936-jılı talantlı jaslardı keńnen tanıtıw maqsetinde olardıń dawısın gramplastinkaǵa alıw maselesi qoyıldı. Sogan baylanıslı Tórtkulde talantlı jaslar ortasında jarıs ótkerilip, uzaq tayarlıqlar kórile basladi. Bulardıń ishinde eń saylandiları: J.Shamuratov, E.Qospolatov, I.Patullaev, Q.Ametovlardi tańlap alıp, 1939-jılı aprel ayında Moskvada kop ǵana koncertler beredi. Gramplastinkaǵa J.Shamuratovtıń atqarıwında shayır T.Seytmamutovtiń “Maksim Gorkiy” ham “Nama bası” sazın, I.Patullaevtıń basshılıgındaǵı ansambldiń atqarıwında “Qara jorǵa”, “Nar iydirgen” sazı ham oziniń atqarıwında “Qızıl kolxoz” namaların tusirıp aladı. A.Shamuratova “Arıwxan”, “Bozataw”, “Balent shıǵıp názer salsam”, “Lenin”, “Qawender”, “Shımbay”, “Muńli qiz”, “Zarli qız”, “Aqsungúl”, “Xansayat”, “Nigarim”, “Ayjamal”, “Jaman shıǵanaq”, “Qızlar uyge kir” ham “Qońırat” namaların atqaradı ham gramplastinkaǵa jazdıradı. 1937-jili Ózbekstan qaniygeleriniń jardemi menen qaraqalpaq xalıq namaların jiynap, jazıp alıw ham basip shıǵarıw maselesin qoyadı. Sol jılları teatrdıń muzikaliq boliminin basqarıwshısı kompozitor D.Tumanyan tarepinen 40 tan aslam xalıq qosıqların jazıp alıp notalastırıladı.

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MECHANISMS OF EDUCATION OF FUTURE TEACHERS

Annotation: *The education of future educators relies on a combination of practical experience, mentorship, reflective practice, and research-based instructional methods. These mechanisms collectively prepare aspiring teachers to meet the diverse demands of the classroom by building both technical skills and professional dispositions, such as resilience, empathy, and adaptability. Practical experience, including student teaching and practicum opportunities, allows pre-service teachers to apply theoretical knowledge in real classroom settings, gaining confidence and honing their classroom management skills. Mentorship from experienced educators offers guidance and support, while reflective practices foster critical self-evaluation and continuous improvement. Research-based instructional methods ensure that future teachers are grounded in evidence-backed teaching strategies, equipping them to address varied student needs effectively. Together, these mechanisms provide a comprehensive foundation for developing effective, adaptive, and resilient educators.*

Keywords: *teacher education, practicum experience, reflective practice, mentorship, research-based instruction, professional dispositions*

Introduction. The training of future educators plays a vital role in the quality of educational systems worldwide. As teaching demands both content expertise and pedagogical skill, teacher education programs must employ multifaceted approaches to produce well-rounded educators. Mechanisms such as practical experience, reflective practice, mentorship, and research-based training form the backbone of effective teacher education programs. This study investigates the role of these mechanisms, focusing on their contributions to developing a well-prepared and resilient teaching workforce.

The primary objectives of this study are to:

Analyze the key mechanisms in the education of future teachers.

Evaluate the impact of these mechanisms on teacher readiness and effectiveness.

Provide recommendations for optimizing teacher education programs to ensure comprehensive professional preparation.

Data for this study includes curriculum designs from teacher education programs, academic journals, and surveys from pre-service teachers.

Additional information was gathered from government and non-governmental organizations focused on educational development, such as UNESCO and OECD reports on teacher education standards.

Quantitative Analysis: Surveys were distributed to 150 pre-service teachers in various teacher education programs to measure the perceived effectiveness of training mechanisms like mentorship, practicum experience, and reflective practice.

Qualitative Analysis: In-depth interviews with teacher educators and program coordinators provided insight into the strategies used within these programs.

Thematic Analysis: Responses were categorized to identify common themes related to specific mechanisms that contribute to teacher preparation and professional growth.

Practical experience is a cornerstone of teacher education programs, bridging the gap between theoretical knowledge and classroom application. Practicums, internships, and student teaching allow future educators to apply pedagogical strategies in real-time, giving them hands-on experience with classroom management, lesson planning, and student engagement.

Survey Findings: 90% of participants indicated that practicum experiences were the most valuable component of their training, citing increased confidence and classroom management skills as primary benefits.

Interview Insights: Teacher educators noted that structured, reflective practicums provide an environment where pre-service teachers can practice diverse teaching methods and receive immediate feedback, making the learning process iterative and impactful.

Reflection enables future teachers to critically evaluate their teaching strategies and adapt to varied classroom situations. By incorporating reflective exercises such as journaling, video analysis, and peer discussions, teacher education programs foster a culture of continuous self-improvement.

Survey Findings: 85% of respondents felt that reflective exercises helped them understand their strengths and weaknesses, leading to improved teaching approaches.

Qualitative Themes: Many pre-service teachers reported that reflection helps them process challenging classroom situations, leading to better problem-solving skills and resilience. Teacher educators emphasized that reflection builds adaptability—a crucial trait for addressing diverse classroom needs.

Mentorship, either from experienced teachers or peer mentors, provides essential guidance and emotional support to pre-service teachers. Experienced mentors offer insights into real-world teaching, helping novices navigate classroom dynamics and institutional expectations.

Survey Results: 78% of pre-service teachers reported that mentorship positively impacted their professional growth, especially in learning how to adapt to school culture and engage with parents and administrators.

Interview Findings: Program coordinators highlighted the importance of mentorship for building confidence, refining teaching techniques, and promoting professional identity. Collaborative learning among peers also fosters a supportive

community, encouraging new teachers to exchange ideas and strategies. Research-based instructional methods form the foundation of effective teacher training, equipping future educators with evidence-based approaches to teaching. Techniques like differentiated instruction, formative assessment, and inquiry-based learning empower teachers to meet diverse student needs.

- **Survey Data**: 73% of pre-service teachers believed that research-based instruction gave them a strong foundation in effective teaching practices.
- **Discussion Themes**: Future educators emphasized the importance of learning instructional techniques backed by research, as it improved their confidence in handling varied learning environments. Faculty members stressed the need for continued professional development in research-based methods, even beyond initial teacher training.

Professional dispositions such as empathy, resilience, and ethical responsibility are vital for effective teaching. Programs that incorporate social-emotional learning, ethical discussions, and resilience training help future educators develop the dispositions required for long-term success.

- **Survey Results**: 82% of participants felt that the focus on professional dispositions helped them feel prepared for the interpersonal demands of teaching.
- **Qualitative Insights**: Teacher educators noted that training future educators to approach teaching with empathy and resilience improves their ability to connect with students, manage classroom challenges, and sustain their motivation throughout their careers.

Conclusion. The education of future teachers depends on a combination of practical experience, reflective practice, mentorship, research-based methods, and the development of professional dispositions. These mechanisms work together to create well-prepared, adaptable, and resilient educators who can meet the diverse demands of the classroom. Through hands-on experience and guided reflection, pre-service teachers gain the skills necessary to foster meaningful learning experiences for their students. Mentorship and research-based methods provide additional layers of support, grounding educators in best practices and ethical teaching.

Recommendations:

To maximize the effectiveness of teacher education programs, it is recommended that institutions:

1. Expand practicum opportunities and ensure they include reflective guidance from mentor teachers.
2. Encourage continuous professional development, especially in evidence-based teaching practices.
3. Integrate social-emotional training into curricula to build resilience and empathy in future educators.

Investing in these mechanisms is essential for developing educators who are not only skilled but also dedicated to making a positive impact in their classrooms and communities.

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СКЕТЧИНГ ПО ВЛАЖНОЙ ТКАНИ КАК СРЕДСТВО МОДЕЛИРОВАНИЯ «ГОВОРЯЩЕЙ СРЕДЫ» В ОБРАЗОВАТЕЛЬНОМ ПРОСТРАНСТВЕ ДОУ

Аннотация. *Нетрадиционные техники рисования все активнее входят в нашу жизнь. Они способствуют раскрытию потенциала, открывают безграничный простор для вдохновения и творчества, развивают пространственное и образное мышление, чувство вкуса, меры, способствуют развитию индивидуальности и возможности самовыражения. Увлечь современного дошкольника, вызвать интерес, желание научиться новому непросто, и рисование в нетрадиционной технике, как нельзя лучше поможет справиться с этой задачей.*

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SKETCHING ON WET FABRIC AS A MEANS OF MODELLING A "TALKING ENVIRONMENT" IN THE EDUCATIONAL SPACE OF A PRESCHOOL EDUCATIONAL INSTITUTION

Abstract. *Unconventional drawing techniques are increasingly entering our lives. They help to reveal potential, open up boundless space for inspiration and creativity, develop spatial and imaginative thinking, a sense of taste, measure, contribute to the development of individuality and the ability to express oneself. It is not easy to captivate a modern preschooler, to arouse interest, a desire to learn something new, and drawing in an unconventional technique will help to cope with this task in the best possible way.*

Нетрадиционные техники рисования все активнее входят в нашу жизнь. Они способствуют раскрытию потенциала, открывают безграничный простор для вдохновения и творчества, развивают пространственное и образное мышление, чувство вкуса, меры, способствуют развитию индивидуальности и возможности самовыражения. Увлечь современного дошкольника, вызвать интерес, желание научиться новому непросто, и рисование в нетрадиционной технике, как нельзя лучше поможет справиться с этой задачей. Почему?

Во-первых, это необычно. Вместо привычного листа бумаги, ребенку предлагают ткань, которую нужно самостоятельно намочить и отжать (если потребуется, с помощью взрослого).

Во-вторых, это интересно. Нанося на мокрую ткань капли краски, ребенок становится и художником, и исследователем одновременно: как проявляется краска на ткани, сколько нужно краски, как и где нанести краску на ткань – все это маленький художник реализует самостоятельно, опытным путем.

В-третьих, это результат. Он всегда удачный, т.к. капли краски, причудливо расплываясь на ткани, сами «подсказывают», что нужно дорисовать или пририсовать для получения желаемого эффекта. И, немаловажно, что готовые продукты творческой деятельности детей можно использовать в самых различных вариациях, в зависимости от поставленной педагогом или детьми цели: красивый и оригинальный подарок для членов семьи или друзей; моделирование «говорящей среды» в группе или ДОУ; объединение работ для создание коллективных тематических панно; создание демонстрационного материала (буквы, цифры); создание предметов интерьера для игровых центров и пр.

Общеизвестно, как важна развивающая предметно-пространственная среда для развития детей дошкольного возраста, и наша задача, создать возможность для реализации фантазий, замыслов воспитанников в моделировании такой среды с учетом их возможностей и интересов.

Техника «Скетчинга по влажной ткани» позволяет заинтересовать и привлечь воспитанников не только к творческой деятельности с использованием новой техники, но и к созданию тематических панно, подарков, открыток, т.к. это интересно, познавательно, необычно и результативно. Специальной подготовки или особого таланта не требуется!

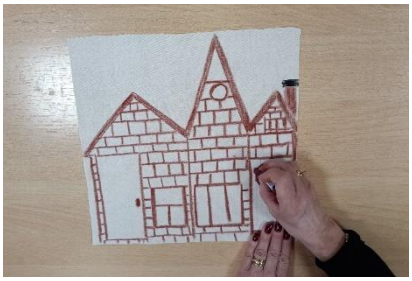
Техника «Скетчинга по влажной ткани состоит из нескольких этапов: рисование наброска, контура будущего рисунка – скетча, прокапывание краской внутри скетча, и прорисовывание деталей на конечном этапе. Для детализации можно использовать фломастеры, краску, восковые мелки. Последние, в свою очередь, сыграют роль своего рода перегородки, не дающей краскам, если вы используете в рисунке несколько цветов, смешиваться между собой.

1 ШАГ.

Делаем на ткани набросок (скетч) будущего дома.

2 ШАГ.

Обводим контуры наброска восковыми мелками или фломастерами: восковыми мелками до увлажнения ткани, чтобы избежать размытия и перемешивания цветности, фломастерами – после того, как работа будет готова и высушена.

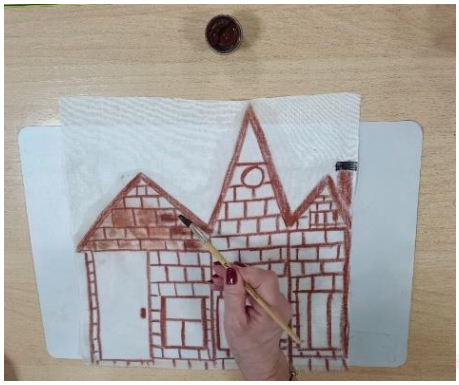


3 ШАГ.

Смачиваем ткань влажной губкой.

4 ШАГ.

Выбираем цвет для задуманного здания. Не забываем про крышу, которая должна быть контрастного цвета. Набираем на кисточку краску и примакиваем ее на влажную ткань. Ждем, пока пятно расплывется, и примакиваем дальше, пока вся необходимая для окраски часть ткани не окрасится полностью.



5 ШАГ.

Осталось высушить и прогладить ткань, которая станет похожа по ощущениям на плотный лист бумаги, (как вариант, можно сложить высохшую ткань под пресс, если утюга нет под рукой).

Варианты техники «Скетчинг по влажной ткани»:

Восковые мелки и гуашь. Эскиз (скетч) обводится восковыми мелками до увлажнения ткани.

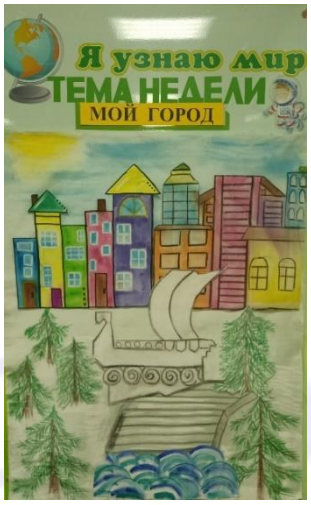
Акварель и фломастеры. Контуры рисунка обводятся в самом конце работы по высохшей ткани.

6 ШАГ.

Дома готовы. Осталось вырезать их, прикрепить сзади самоклеящиеся липучки, которые легко приобрести, и которые очень удобны для работы в детском саду. Очень просто прикрепляются к любой поверхности, и так же легко снимаются, не оставляя следов. Можно прикрепить магнитами на доску, скрепками, прищепками – все зависит от вашей фантазии и возможностей.

7 ШАГ.

Собираем наши здания в один город. Определяем места для зданий вместе, советуясь и помогая друг другу.



Город готов, все здания получились разными, яркими, привлекательными. Соединив их вместе, мы достигли поставленной цели – смоделировали город, который можно разместить в группе на тематическом стенде в рамках темы недели. В дальнейшем можно сделать таблички для домов, номера домов, названия улиц и т.д. Также можно смоделировать осенний лес, весенний пейзаж, цветы, фрукты – овощи, все, что вы задумали вместе с детьми.

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КЛАССИФИКАЦИЯ ПСИХОДИАГНОСТИЧЕСКИХ МЕТОДОВ И ФОРМ ПСИХОЛОГИЧЕСКОГО ТЕСТИРОВАНИЯ

Аннотация: *Психодиагностические методы и формы психологического тестирования являются важными инструментами в исследовании психических процессов, личностных особенностей и интеллектуальных способностей человека. Данная классификация включает в себя тесты интеллекта, личностные тесты, проективные методы, а также тесты профессиональной ориентации. Методы варьируются по форме проведения, включая анкетирование, наблюдение, интервью и эксперимент, а результаты могут оцениваться качественно или количественно. Психодиагностические инструменты играют ключевую роль в профориентации, диагностике психических расстройств и разработке психологических рекомендаций. В этой статье мы обсудим их подробно.*

Ключевые слова: *психодиагностика, методы тестирования, тесты интеллекта, личностные тесты, проективные методы, анкетирование, наблюдение, интервью, количественный анализ, качественный анализ, психологическое тестирование.*

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CLASSIFICATION OF PSYCHODAGNOSTIC METHODS AND FORMS OF PSYCHOLOGICAL TESTING

Abstract*: Psychodiagnostic methods and forms of psychological testing are important tools in the study of mental processes, personality traits and intellectual abilities of a person. This classification includes intelligence tests, personality tests, projective methods and vocational guidance tests. The methods vary in the form of implementation, including questionnaires, observations, interviews and experiments, and the results can be assessed qualitatively or quantitatively. Psychodiagnostic tools play a key role in vocational guidance, diagnosis of mental disorders and development of psychological recommendations. In this article, we will discuss them in detail.*

Keywords: *psychodiagnostics, testing methods, intelligence tests, personality tests, projective methods, questionnaires, observations, interviews, quantitative analysis, qualitative analysis, psychological testing.*

Введение: Психодиагностика – это область психологии, которая занимается измерением и оценкой психических свойств и состояний человека с целью их исследования и прогнозирования. В психодиагностике используются различные методы и формы тестирования, которые можно классифицировать следующим образом:

По содержанию методов:

Тесты интеллекта: Оценивают уровень интеллектуальных способностей человека, определяют его умственные возможности и когнитивные навыки. Примером являются тесты IQ (Коэффициент интеллекта).

Личностные тесты: Направлены на выявление черт характера, поведенческих склонностей, мотиваций и личных предпочтений. Пример – MMPI (Миннесотский многопрофильный личностный опросник).

Проективные тесты: Стимулируют испытуемого на проявление его подсознательных мыслей, установок и эмоций через неоднозначные или абстрактные стимулы. Пример – тест Роршаха (интерпретация чернильных пятен).

Тесты профессиональной ориентации: Эти тесты помогают определить склонности и предпочтения человека в области выбора профессии и карьеры.

По форме проведения тестирования:

Анкетирование: Испытуемому предлагается серия вопросов, на которые он отвечает либо письменно, либо устно. Этот метод позволяет собрать структурированную информацию об эмоциональных состояниях, предпочтениях и поведении человека.

Наблюдение: Психолог или исследователь наблюдает за поведением испытуемого в реальных или созданных условиях, анализируя реакции, эмоциональные проявления и действия в различных ситуациях.

Интервью: Психолог проводит личное интервью, в ходе которого задаются вопросы, помогающие получить более глубокое понимание внутреннего мира, переживаний и мотиваций испытуемого.

Эксперимент: Создаются искусственные условия для проверки определенных гипотез. Испытуемые помещаются в контролируемую среду, в которой психолог исследует их реакции на конкретные стимулы или задачи.

По типу анализа результатов:

Качественный анализ: Заключается в оценке и интерпретации личных качеств, эмоциональных состояний и поведения на основе наблюдений, интервью, описательных данных и других нечисловых методов. Этот анализ

направлен на глубокое понимание особенностей личности и психических процессов.

Количественный анализ: Осуществляется на основе числовых данных, полученных с помощью тестов, опросников и шкал. Используются статистические методы для анализа результатов, что позволяет получить объективные показатели, такие как уровни интеллекта, степени тревожности, мотивации и другие психологические параметры.

По способу сбора данных:

Самооценка: Испытуемый самостоятельно оценивает свои личные качества, способности, эмоциональные состояния и поведенческие черты. Это может быть выполнено через опросники, тесты или в форме свободного описания.

Оценка окружающими: Личность испытуемого оценивается другими людьми, такими как друзья, коллеги, члены семьи или педагоги. Этот метод позволяет получить внешнюю точку зрения на поведение и психологические особенности человека, которые он сам может не осознавать.

Эти методы применяются для различных целей: профориентация, диагностика психических расстройств, исследование когнитивных способностей, разработка программ психологической помощи.

Заключение: *Психодиагностические методы и формы психологического тестирования играют ключевую роль в исследовании и оценке психических процессов, интеллекта и личности. Классификация этих методов по содержанию, форме проведения, типу анализа и способу сбора данных позволяет выбрать наиболее подходящий подход в зависимости от цели исследования. Тесты интеллекта, личностные и проективные тесты, наряду с экспериментальными и анкетными методами, предоставляют разностороннюю информацию о человеке. Правильное применение этих методов способствует более точной диагностике, профессиональной ориентации и разработке программ психологической помощи.*

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ТЕХНИЧЕСКИЕ НАУКИ

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METHOD OF DESIGN AND TOPOLOGICAL OPTIMIZATION OF ROTORS OF SYNCHRONOUS MOTORS WITH PERMANENT MAGNETS

Abstract. *Synchronous electric machines with permanent magnets (SEPM) are increasingly used in various drive technical complexes. For each drive complex, it is necessary to meet the requirements for the developed torque, cooling conditions and strength characteristics.*

Keywords: *synchronous motor, permanent magnets, topology, finite element method.*

INTRODUCTION

The paper proposes a modern method for designing and optimizing permanent magnet synchronous motors (PMSM) using genetic algorithms. The use of synchronous machines instead of asynchronous ones for electric drives of sucker rod well pumping units will provide the opportunity to obtain higher energy efficiency parameters, and PMSMs also have an extremely compact design. The structure of PMSMs makes them significantly smaller and lighter than similar asynchronous motors. PMSMs are up to 40 percent more compact than similar asynchronous motors. They correspond to a size that is two standard sizes smaller, which creates the opportunity for a more compact machine design. In addition, PMSMs weigh 50 percent less and their inertia is 60 percent lower than that of a similar asynchronous motor.

MATERIALS AND METHODS

Designing an electric machine as a heuristic process does not guarantee finding the best solution. Methods are needed to complement the experience and intuition of the designer to find the optimal (rational) solution. Topological optimization is currently performed using the finite element method to reduce weight and improve the rigidity characteristics of structures. The proposed method allows transferring topological optimization to electromagnetic processes in PMSM to determine the direction of magnetization of permanent magnets, the number of phases and winding turns, the dimensions of the stator slots and permanent magnets in order to increase the efficiency and reliability of an electric machine with given weight and size parameters.

RESULTS AND DISCUSSION

In foreign sources, work on topological optimization has been conducted for a long time, and both the strength parameters and the values of the electromagnetic and thermal fields are increasing. The article [4] demonstrates the advantages of topological optimization of several materials compared to standard

optimization (one material). The proof was the optimized design of a car engine for both optimization cases, and in the first case, a more rigid design is obtained with the same weight. The difference from our topic is that our optimization will be performed for synchronous motors with permanent magnets, and taking into account not one controlled parameter (in the article - weight), but the electromagnetic, thermal and strength components, and this will allow us to obtain the most efficient engine design.

As an example, the article [1] is presented, which optimizes the design of a brushless DC electric motor (namely, the rotor configuration) based on the finite element method to increase the specific power by increasing the electromagnetic field. In [2], a two-dimensional model was considered for determining the electromagnetic field in the air gaps of synchronous motors with permanent magnets, and the scientific work [3] shows a method for designing permanent magnets that can already be used to obtain optimal designs. In [4], a version of topological optimization was presented through the use of a genetic algorithm, and in [2], optimization was achieved as a result of using the finite element method. In these works, optimization was necessary to increase the values of the electromagnetic field, and a thermal calculation is presented in [2], where a motor with the maximum possible heat flux was designed. The design of motors can be made more efficient by using topological optimization based on sensitivity [3]. To improve the performance of the genetic algorithm, optimal initial populations are needed, which can be done by the work [1], which shows an algorithm for generating a population with high values of characteristics. The development of the genetic algorithm can also lie in the direction of adaptive grid changes directly during optimization [3], an interesting solution is also the use of the method of sequential linear programming [4].

Topological optimization is one of the methods for finding optimal solutions to design problems for a certain design model, including electrical equipment designs.

This type of optimization is mainly used at the conceptual stage of design. The optimized function is the value of the potential energy of the system, as well as the displacement of nodes. To solve the problems that are posed in this type of optimization, different methods of mathematical modeling are used. It is important to note that finding exact solutions to topological optimization problems is often difficult. And, therefore, in practice, algorithms for approximate numerical solutions are developed. In a broad sense, topological optimization can be classified as follows:

– discrete element;

– continuous.

Discrete element optimization implies an approach to design in which there will be a ready-made set of possible discrete elements for the design model under consideration. By changing the geometric parameters of any element in the range from zero (in which case the element disappears) to the possible maximum, the

final design will have different sizes and topology. Continuous topology optimization is the design as a kind of continuous "void" or material with extremely low density values. By changing the distribution ratio, "void"/material or density values within the limits of the lowest possible values, the meaning of the dimensions and topology of the structural model of the object under consideration.

The distribution of materials in the rotor is of crucial importance for the electromagnetic, thermal processes and determination of the strength characteristics in electrical machines.

In addition to the widely used materials such as steel sheet, permanent magnets (neodymium ferrum boron, samarium cobalt), some newly developed magnetic materials such as soft magnetic composites, amorphous and grain-oriented silicon steel show better characteristics such as high saturation flux density, low specific losses and low manufacturing costs. They can be used to design motors with new topologies, higher efficiency and / or low manufacturing cost.

Manufacturing methods are also important at the design stage of electrical machines, which will affect their manufacturing quality and actual performance in operation.

For example, to obtain the best performance, some designs may have a complex rotor topology, which is difficult to manufacture.

The magnetic and mechanical properties of some new materials such as soft magnetic composites and amorphous are highly dependent on the manufacturing process. Without a good knowledge of magnetic characteristics and production methods, the performance characteristics of the developed motors cannot be fully utilized. This must be taken into account when setting the topology optimization settings.

Currently, industrial production of permanent magnets (PM) with high energy indicators is developing. Such PMs allow creating a large magnetic flux in small volumes, allowing a significant increase in the maximum power of EM.

The most important requirements for PMSM in the drive mechanisms of pumping machines are:

– high energy-dynamic parameters;

– small dimensions and weight.

To achieve maximum values of the energy and dynamic parameters of PMSM with small dimensions, high-energy PMs are used.

This allows:

– firstly, to reduce the volume of the PM;

– to obtain the smallest moment of inertia of the rotating part - the rotor of the PMSM;

– thirdly, to obtain a larger magnetic flux, that is, higher values of the starting, electromagnetic torque, specific power and efficiency of the PMSM.

CONCLUSION

Analytical information search shows that one of the most promising areas is the use of topological optimization for synchronous electric machines, as it has a more conceptual and applied nature. Implementation of optimization of the topology of synchronous electric machines allows transforming its geometric and shape parameters, for example, the dimensions of rotor slots, which will lead to a harmonious distribution of magnetic flux, and therefore less heating of the insulation and rotor windings.

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ПЕРСПЕКТИВЫ ИНТЕГРАЦИИ РОБОТОТЕХНИКИ В НЕФТЕГАЗОВУЮ ОТРАСЛЬ

***Аннотация**: В статье рассматриваются актуальные тренды и перспективы использования робототехники в нефтегазовой отрасли, которая сталкивается с вызовами, связанными с безопасностью, эффективностью и устойчивостью. Анализируются современные технологии, такие как дроны для мониторинга охраны и ведения геологических исследований, автономные подводные устройства для работы на морских месторождениях и роботы-манипуляторы для проведения сложных операций на суше.*

***Ключевые слова:** нефтегазовый комплекс, роботизация процессов, инновационные технологии, повышение эффективности.*

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PROSPECTS FOR INTEGRATING ROBOTICS INTO THE OIL AND GAS INDUSTRY

Abstract: *The article discusses current trends and prospects for the use of robotics in the oil and gas industry, which is facing challenges related to safety, efficiency and sustainability. Modern technologies such as drones for monitoring security and conducting geological research, autonomous underwater devices for working in offshore fields and robotic manipulators for conducting complex operations on land are analyzed.*

Keywords: *oil and gas complex, robotization of processes, innovative technologies, efficiency improvement.*

Роботизация – одна из ключевых технологий, которая оказывает значительное влияние на нефтегазовую отрасль. В наши дни роботы и автоматизированные системы занимают важное место в процессах добычи, транспортировки и обработки нефти и газа.

Разнообразные виды роботов в нефтегазовой отрасли находят применение в широком спектре задач. Преимущественно они применяются для инспекции, технического обслуживания и ремонта. Основным преимуществом роботов в этой области является их способность выполнять операции, которые представляют серьезные опасности для человека, такие как тушение пожаров и поиск утечек газов. Кроме того, роботы позволяют автоматизировать монотонные и повторяющиеся задачи, такие как сбор данных с датчиков, исключая возможность человеческих ошибок.

Всех роботов можно разделить на 3 основные группы:

- наземные роботы широко используются в разнообразных задачах нефтегазовой отрасли. В зависимости от требований к мобильности и нагрузке, они могут быть колесными, гусеничными или педипуляторными. Эти устройства находят применение в инспекции и обслуживании оборудования, пожаротушении, мониторинге окружающей среды, а также в автономных системах для бурения и добычи углеводородов. Наземные роботы способствуют безопасности персонала и позволяют выполнять работы в труднодоступных и опасных условиях;

- воздушные. Беспилотные летательные аппараты (БПЛА) сегодня стали неотъемлемой частью нефтегазовой отрасли. Они способны проводить аэрофотосъемку для мониторинга месторождений и инфраструктуры, а также выполнять визуальные инспекции и анализ состояния трубопроводов и сооружений;

- подводные. Эти устройства могут работать как под управлением оператора, так и в режиме полной автономии. В эксплуатации подводных нефтегазовых месторождений они играют ключевую роль. Подводные роботы выполняют инспекцию, обслуживание и ремонт на больших глубинах. Они оборудованы камерами и специализированными

инструментами, что позволяет вести визуальный мониторинг и проводить операции на морском дне. Эти роботы снижают риски для работников и помогают сократить расходы на обслуживание подводных месторождений.

Роботизация стала неотъемлемой частью нефтегазовой индустрии. Внедрение роботов позволяет улучшить рабочие условия, сократить риски для персонала, а также значительно повысить производительность и качество операций. Однако эти преимущества также сопряжены с определёнными сложностями:

- высокие затраты на внедрение. Переход к автоматизированным системам и роботизации требует значительных финансовых инвестиций. Покупка и установка роботов, а также обновление существующего оборудования, могут стать финансовой нагрузкой для компаний;

- сложности в обслуживании и обучении персонала. Внедрение новых технологий требует специальных знаний и навыков у персонала. Обучение сотрудников и обслуживание автоматизированных систем могут потребовать дополнительных ресурсов и времени;

- проблемы с безопасностью. Работа роботов может создавать риски для безопасности как для самих роботов, так и для рабочих. В частности применение БПЛА сопряжено с риском его падения, соответственно необходимо принять меры чтобы он не повредил оборудование и не нанёс травм сотрудникам;

- кибербезопасность. Роботизация предполагает широкое использование цифровых технологий, что может сделать системы уязвимыми к кибератакам. Защита данных и обеспечение безопасности важны, но сложны и дороги;

- сложности в адаптации к изменениям. Быстрые изменения и автоматизация могут создавать проблемы для компаний, которые могут оказаться неготовыми к адаптации к новым решениям и процессам.

Несмотря на многочисленные вызовы и сложности, связанные с роботизацией в нефтегазовой отрасли, внедрение автоматизированных систем и робототехники остаётся ключевой составляющей будущего этой промышленности. Сегодняшние достижения в робототехнике лишь предвещают будущее, где автоматизация будет играть все более значительную роль в нефтегазовой промышленности. Поэтому инвестирование в разработку и внедрение роботизированных систем представляет собой не только рациональный выбор для компаний, но и важный шаг в направлении устойчивого развития отрасли.

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АНАЛИЗ СПОСОБОВ СНИЖЕНИЯ ГЕЛЕОБРАЗОВАНИЯ БИТУМИНОЗНОЙ НЕФТИ

Аннотация: *Битуминозная нефть представляет собой сложную смесь из нефти-растворителя, асфальтеновых и парафиновых углеводородов. В горячем состоянии битуминозная нефть представляет собой, вязкую жидкость. Но когда температура падает, парафин выпадает в осадок и в конечном итоге кристаллизуется и образует сетку. Гелеобразные асфальтеновые компоненты в основном состоят из структурированного материала, похожего на мягкое твердое вещество, со сложной реологией, тесно связанной с состоянием структуры, т.е. с температурой и скоростью охлаждения.*

Ключевые слова: *битуминозная нефть, ингибитор, реагент, растворитель, парафин, реологические свойства.*

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ANALYSIS OF WAYS TO REDUCE THE GELATION OF BITUMINOUS OIL

Abstract: *Bituminous oil is a complex mixture of solvent oil, asphaltene and paraffin hydrocarbons. In the hot state, bituminous oil is a viscous liquid. But when the temperature drops, the paraffin precipitates and eventually crystallizes*

and forms a grid. Gel-like asphaltene components mainly consist of a structured material similar to a soft solid, with a complex rheology closely related to the state of the structure, i.e., temperature and cooling rate.

Keywords: *bituminous oil, inhibitor, reagent, solvent, paraffin, rheological properties.*

Снижение гелеобразования использованием химических реагентов (ингибиторов)

Ингибиторы парафина относятся к двум широким категориям [1]:

а) детергенты или диспергаторы кристаллов воска, которые являются поверхностно-активными веществами, которые препятствуют сборке образующихся кристаллов воска в гелевую сетку. Типичныедиспергаторы включают алкилсульфонаты и этоксилаты жирных аминов.

б) модификаторы кристаллов воска, полимеры, растворенные в растворителе, которые внедряются между образовавшимися кристаллами, препятствуя их сборке в гелевую сеть. Эти кристаллические модификаторы предназначены для снижения температуры застывания и/или вязкости, также известны как депрессоры температуры застывания, поскольку они снижают вязкость.

Часто упоминаемымпримером является применение растворителей с низким содержанием парафина и низкой температурой застывания, которые производятся совместно из разных резервуаров и в трубопроводных сетях с несколькими источниками [2]. Этот эффект сильно нелинейный; даже небольшая объемная доля жидкости с низким содержанием парафинов может оказать огромное влияние на снижение температуры застывания и предела текучести, что необходимо учитывать при планировании производственных и транспортных систем.

Достижения в областиулучшения текучести и ингибированиябитуминозных нефтей с использованием традиционных полимерных модификаторов кристаллов воска рассмотрены со следующими выводами:

- эффективность модификаторов кристаллов воска сильно зависит от способности полимера сокристаллизоваться с воском. Другими словами, производительность связана не только со структурой полимера, но и с составом воска, причем сложным образом.
- эффективность модификаторов кристаллов полимерного воска увеличивается с увеличением длины боковых цепей.
- модификаторы кристаллов воска обычно используются в сочетании с растворителями для дальнейшего повышения эффективности ингибирования парафина, например, добавление трихлорэтилен-ксилола с сополимерами этилена и гребнеобразными полимерами [3].

Применение модификаторов природных полимерных кристаллов воска. Такие полимеры экстрагируются из масла семян растения ятрофа и были протестированы с суданской битуминозной нефтью с высокой температурой застывания и температурой появления воска. Было обнаружено, что эти природные ингибиторы существенно снижают температуру застывания нефти, что указывает на хороший потенциал для дальнейшего изучения других битуминозныхнефтей[4].

Очевидно,что,поскольку механизмы,описанные для ингибирования парафина, имеют химическую природу и влияют на связи и цепи, существует необходимость оптимизации эффекта, поскольку избыток ингибиторов может иметь неблагоприятный эффект. При дальнейшем понимании структуры эти ингибиторы показывают, что они состоят из двух частей: олеагинофильной части, которая сокристаллизуется с воскообразующими компонентами, и полярного компонента, который ограничивает степень совместной кристаллизации. Ингибиторы с такими свойствами очень избирательны и не очень эффективны для каждой нефти.

Более длинная молекулярная цепь, большая молекулярная масса и высокая термическая стабильность некоторых ингибиторов затрудняют их разложение в процессе переработки нефти. Поэтому существует необходимость рассматривать новые низкомолекулярные соединения как средства, улучшающие текучесть.

Использование ингибиторов при низкой температуре имеет тенденцию сужать их выбор, поскольку на выбор сильно влияют происхождение нефти, месторождения нефти и её свойства. Эти совокупные характеристики усложняют выбор реагента, но результаты исследований показывают, что эту проблему можно решить путем правильного выбора. Аналогичным образом, дозировка реагента, необходимая для лабораторного исследования, не будет репрезентативной и всегда будет выше, чем та, которая необходима для использования в полевых условиях.

Обработка битуминозной нефти предлагает решение проблем с высокой температурой застывания. Однако при обработке химическими реагентами для снижения температуры застывания многие нефти демонстрируют лишь ограниченную реакцию, что представляет собой серьезную неопределенность. Механизм снижения температуры застывания не совсем понятен и в некоторой степени спорен.

Снижение гелеобразования растворителями

Разбавление является одним из старейших и эффективных методов снижения вязкости нефти и содействия ее мобильности по трубопроводам. Классическими разбавителями, используемыми в этом методе, являются конденсаты, легкая углеводородная нафта, легкая сырая нефть и некоторые органические растворители[4]. Результирующая вязкость смеси зависит от степени разбавления и соответствующих вязкостей и плотностей сырой нефти и разбавителей.

При разбавлениитяжелой нефти, обычно используются конденсаты от добычи природного газа, но также используются и более легкие сырые нефти. Это эффективный вариант снижения вязкости нефти и облегчения ее подвижности в трубопроводе, поскольку содержания растворителя в 20–30% часто бывает достаточно, чтобы избежать высоких перепадов давления[5]. Разбавление нефти может облегчить определенные операции, такие как обезвоживание и обессоливание.Такая технология является наиболее широко используемым решением там, где имеется конденсат или более легкая сырая нефть для транспортировки тяжелой и сверхтяжелой нефти по трубопроводу. Однако это требует существенных инвестиций в насосы и трубопроводы, необходимости в какой-то момент отделять растворитель, перерабатывать его и в дальнейшем возвращать на место добычи нефти. Более того, вариант разбавления имеет некоторые проблемы, поскольку любое изменение состава нефти может повлиять на требуемое соотношение нефть/растворитель. Затем важно заранее определить соотношение растворителя и тяжелой нефти, поскольку простые правила смешивания напрямую не применимы. Особое внимание необходимо уделять стабильности асфальтенов и парафинов, поскольку добавление конденсата или легкой нефти может вызвать осаждение асфальтенов в трубопроводах[5].

Разбавление толуолом, нафтой или гептаном, приводит к снижению вязкости, однако эффект становился менее значимым при более высоких концентрациях разбавителя. Разбавление метанолом приводило к увеличению вязкости из-за образования водородных связей. Газовый конденсат оказал большее влияние на более тяжелую нефть, снижая вязкость, однако при более высоких температурах его эффект уменьшался[5].

Разбавление легкой нефтьюувеличивает растворимость тяжелого парафина и снижает содержание парафина, что приводит к устранению тиксотропного поведения тяжелой сырой нефти[5].

Разбавление нереагирующим газом, закачиваемым в добывающие скважины - этот подход наиболее осуществим в регионах с такой доступностью. Наблюдения подтвердили, что при применении этих технологий приводит к снижению гелеобразования [5].

Разбавление нереагирующим газом,закачиваемым в трубопровод – этоболее простая операция и более легкая альтернатива закачке в скважину.

Выводы

Проблемы, возникающие с битуминозной нефтью во время перекачки, связаны с охлаждением нефти до температуры появления парафинов, методом охлаждения (без сдвига (статическое) или со сдвигом (динамическое) и скоростью. Охлаждение оказывает основное влияние на величину предела текучести и зависит от количества осаждающегося парафина при определенных условиях. При точном установлении

показателей, характеризующих осаждение парафина, необходимо выбрать наиболее подходящий и экономичный способ смягчения последствий. Среди рассмотренных и представленных методов больше внимания уделяется разбавлению различными растворителями. Возможно также применение химическихреагентовкак метода предотвращения гелеобразования битуминозной нефти.

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ПРОБЛЕМЫ СТАБИЛЬНОСТИ ВОДОНЕФТЯНЫХ ЭМУЛЬСИЙ И СПОСОБЫ ИХ РЕШЕНИЯ

Аннотация: В нефтедобывающей промышленности в процессе добычи сырой нефти получаются эмульсии «вода в сырой нефти» с высокой стабильностью, которые стабилизируются благодаря присутствию местных поверхностно-активных веществ в сырой нефти. Удаление воды из сырой нефти имеет решающее значение для производства товарного продукта. Его следует проводить у источника, чтобы избежать затрат на перекачку и проблем, связанных с коррозией труб во время транспортировки. Существует множество технологий разделения, но большинство из них не могут удалить сильно эмульгированную или растворенную воду, помимо их высокой стоимости. Таким образом, для отделения воды от этих эмульсий часто требуется комбинирование методов с использованием химических реагентов.

Ключевые слова: *нефть, стабильная эмульсия, разделение, деэмульгатор, электродегидратор.*

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PROBLEMS OF STABILITY OF OIL-WATER EMULSIONS AND WAYS TO SOLVE THEM

Abstract: In the oil industry, in the process of crude oil extraction, emulsions "water in crude oil" with high stability are obtained, which are stabilized due to the presence of local surfactants in crude oil. The removal of water from crude oil is crucial for the production of a marketable product. It should be carried out at the source to avoid pumping costs and problems associated with corrosion of pipes during transportation. There are many separation technologies, but most of them cannot remove highly emulsified or dissolved water, apart from their high cost. Thus, the separation of water from these emulsions often requires a combination of methods using chemical reagents.

Keywords*: oil, stable emulsion, separation, demulsifier, electrodehydrator.*

Высокостабильные эмульсии типа «вода в нефти» состоят из мелких капель воды в нефти. Этот вид эмульсии обычно образуется с природными поверхностно-активными веществами (ПАВ), которые физически присутствуют в сырой нефти.

Создание таких эмульсий, обладающих высокой стабильностью, является серьезной проблемой, которая часто возникает на этапах добычи нефти, подготовки и транспортировки. При добыче сырой нефти из скважины нефть и вода одновременно добываются и смешиваются с высокой энергией, когда эти фазы сжимаются вместе в узких порах коллекторов. Как следствие, эмульсии «вода в нефти» с высокой стабильностью образуются, когда асфальтены прилипают к внешней стороне значительного количества мелких капель воды в нефти и уменьшают поверхностное натяжение.Это может произойти при высоких давлениях и температурах. На этапе подготовки вода и нефть потенциально могут смешиваться в процессах разделения, образуя эмульсии. Такие стабильные эмульсии имеют гораздо более высокую вязкость по сравнению с исходной нефтью. Они создают проблемы в процессе переработки и вызывают коррозию резервуаров и трубопроводов[1].

В настоящее время для разделения нефтяных эмульсий применяются различные химические и механические методы. Наиболее распространенные методы включают в себя разделение в гидроциклонах, фильтрование, центрифугирование, паро-воздушную отгонку и применение химическихреагентов – деэмульгаторов, а так жеприменение электрической обработки. Более того, иногда может использоваться комбинация двух и более из этих методов разделения.

При выборе подходящего процесса во многих операциях необходимо учитывать стоимость, время и размерные факторы. Что касается операций, время крайне ограничено; поэтому рекомендуется применять более высокую скорость разделения, хотя добиться этого может быть сложно, особенно для чрезвычайно стабильных эмульсий. Обработка этих эмульсий традиционными методами может занять значительное время. Поскольку большое значение придается объему осаждения, традиционные

механические системы, такие как центробежные сепараторы, гравитационные отстойники, гидроциклоны и отпарные колонны, становятся все более дорогими в эксплуатации. Следовательно, может быть нецелесообразно устанавливать их в местах, где пространство ограничено, например, на нефтяной платформе. Кроме того, могут возникнуть высокие эксплуатационные расходы из-за большого времени гидравлического воздействия, а также из-за необходимости использовать металлоемкое оборудование. Кроме того, на работу оборудования будет затрачено значительное количество энергии. Таким образом, для эксплуатации будет экономически выгодно поддерживать минимальное количество и размер деэмульгирующих установок [2].

Использование деэмульгаторов стало популярным методом дестабилизации эмульсий из-за ограничений, связанных с применением методов механического разделения.

Доступныедеэмульгаторы можно рассматривать как химический коктейль, в котором можно обнаружить синергетический эффект одного или нескольких активных компонентов, растворенных в активном растворителе. Растворитель должен быть чрезвычайно гидрофобен, чтобы активные компоненты растворялись в сырой нефти, не дорог и не занимает большого объема. Обычно эти химикаты добавляют к уже образовавшимся эмульсиям с целью их разрушения. Кроме того, деэмульгаторы также можно использовать в качестве предварительной обработки, чтобы затруднить процедуру эмульгирования, путем добавления их к нефти.

Деэмульгаторы представляют собой комбинацию различных химических соединений с несколькими химическими структурами и большим распределением молекулярных масс.

Деэмульгаторы обладают способностью изменять межфазную активность и разделять. Компоненты деэмульгаторов в совокупности имеют разные характеристики. Для того чтобы произошла деэмульгация, комбинация этих химикатов должна обладать следующими свойствами: действовать как флокулянты, ускоряя скорость седиментации, изменять реологию границы раздела нефть/вода, действовать как смачивающие агенты (изменяя угол контакта твердого тела). Данные реагенты должны быть способны дестабилизировать защитную пленку, окружающую каплю, поскольку сильно притягиваются к границе раздела нефть/вода.

Учитывая эти свойства, деэмульгаторы способны расщеплять эмульсии с помощью методов физического разделения или без них. Это одна из причин, по которой они используются в экспериментах исследователей и широко используются в промышленности. Они увеличивают скорость истончения межфазной пленки, уменьшают межфазную вязкость и сокращают время ее разрыва.

Скорость деэмульгации улучшается при соблюдении следующих трех условий:

1. Повышение температуры системы.
2. Увеличение объемной концентрации.
3. Увеличение растворимости деэмульгатора в воде.

Однако эти химические добавки чрезвычайно токсичны, особенно для морских организмов при использовании деэмульгаторов, что указывает на опасность серьезного загрязнения водной среды. В результате проводятся интенсивные исследования по созданию экологически чистых деэмульгаторов [3]. Кроме того, изучается возможность использования химических реагентов в сочетании с другими методами разделения с целью достижения устойчивого и высокоэффективного процесса разделения.

Еще одним эффективным методом разделения эмульсииявляетсяразрушение эмульсий с использованием электрического тока с использованием осадителей эффективно применяется при подготовке нефти. Аппарат, используемый для разрушения эмульсий под действием электрического поля, называется электродегидратором.

В настоящее время он широко используется для разделения капель воды в нефти в различных дисперсных системах. Это связано с тем, что он обеспечивает низкие эксплуатационные расходы и затраты на оборудование, поскольку его можно адаптировать к большой производительности, и за прошедшие годы было создано несколько эффективных и надежных конструкций. В большинстве традиционных применений элеродегидраторов при отделении водной от нефтяной фазы применяется электрическое поле переменного тока высокого напряжения [4]. Многие производители используют поля переменного тока из-за их неэлектролитической природы и устойчивости к высокому содержанию воды.

Дегидраторы переменного тока состоят из генератора электростатического поля, использующего трансформатор, стимулирующий одиночный горизонтальный электрод под заземленным электродом, (рисунок 1). Между находящимся под напряжением электродом и границей раздела нефти и воды создается слабый градиент потенциала, и обнаруживается сильный градиент потенциала. между электродом под напряжением и заземляющим электродом. Более низкое электрическое поле способствует быстрому слиянию капель нефти, которая попадает в отсек над поверхностью раздела воды, а затем более сильное электрическое поле вызывает дальнейшее слияние и обезвоживание. Как только нефть оказывается над заземляющим электродом, дальнейшая электростатическая деэмульгация не может происходить, поскольку над ним не может существовать электростатическое поле.

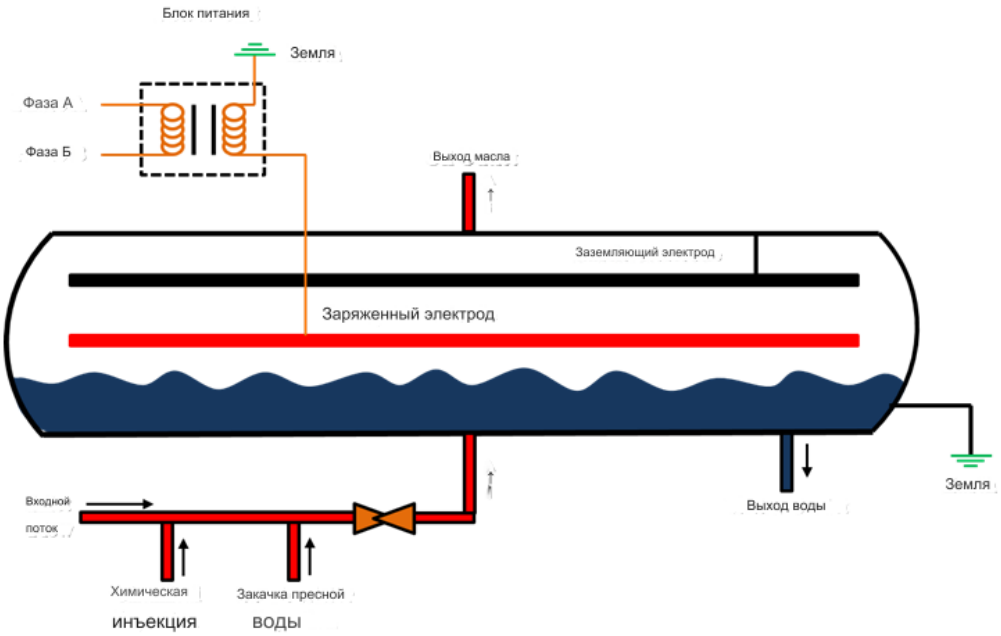

Рисунок 1: Принципиальная схема элетродегидратора переменного тока

Применение электростатического разделения эмульсий «вода в нефти» имеет множество отличительных преимуществ: в частности, малое энергопотребление, обусловленное низкими параметрами электрического тока, проходящего через дисперсию. Аналогичным образом, процедура не предполагает использование движущихся частей, а это означает, что в ней не произойдет механического разрушения. Электродегидраторы, обычно используемые в нефтяной промышленности, имеют большие размеры и занимают много места из-за больших зон схватывания и длительного времени пребывания, необходимого для отделения капель воды от нефти. Поэтому для разработки более компактного, надежного, транспортабельного и эффективного оборудования необходимо интенсифицировать процесс разделения.

В результате усовершенствований современных технологий исследователи получили лучшее понимание эмульгирующих свойств нефти [5]. В связи с этим предпринимаются попытки создать более надежное оборудование с целью быстрого разделения эмульсии.

Сочетание данных методов и технологий электрического разделения с применением верно подобранных диэмульгаторовулучшают процесс электрокоалесценции капель воды в нефтии следовательно разделения водонефтяной эмульсии. Были идентифицированы дополнительные методы, такие как мембранная фильтрация, смешивание и использование высокого давления и температуры, также были объединены с данными методами разделения для повышения эффективности работы.

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ПРИМЕНЕНИЕ НАНОТЕХНОЛОГИЙ БУДУЩЕЕ НЕФТЕГАЗОВОГО СЕКТОРА

Аннотация: *в последние годы нанотехнологии начинают кардинально менять подходы к разработке и эксплуатации нефтегазовых ресурсов. Эта статья рассматривает инновационные методы, основанные на использовании наноматериалов, которые обеспечивают повышение эффективности добычи, улучшение качества переработки углеводородов и снижение воздействия на окружающую среду.*

Ключевые слова: *нанотехнологии, нефтедобыча, наножидкости, наноматериалы, модернизация.*

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THE USE OF NANOTECHNOLOGY IS THE FUTURE OF THE OIL AND GAS SECTOR

Abstract: *In recent years, nanotechnology has begun to radically change approaches to the development and exploitation of oil and gas resources. This article examines innovative methods based on the use of nanomaterials that provide increased production efficiency, improved quality of hydrocarbon processing and reduced environmental impact.*

Keywords: *nanotechnology, oil production, nanofluids, nanomaterials, modernization.*

Нанотехнологии – это проектирование, описание, производство и использование структур, средств и систем с помощью управления формой и размерами объектов на наноуровне (в наномасштабе).

Нанотехнология вошла в нефтегазовую промышленность не так давно, но многие ее приложения уже стали неотъемлемой частью многих, казалось бы, традиционных технологических процессов. Например, использование наноструктурированных цеолитов позволило на 40% повысить выход бензиновых фракций по сравнению с применением обычных катализаторов.

В области разработки месторождений и бурения известны лишь исключительные примеры использования нанотехнологий, например, использование оборудования, изготовленного из нового поколения наноматериалов. Буровые долота, трубы нефтяного сортамента, элементы оборудования промыслов должны противостоять колоссальным нагрузкам, поэтому потребность нефтегазовой промышленности в прочных и долговечных материалах крайне высока. Применение материалов с заданной наноструктурой позволяет делать более легкое, долговечное и прочное оборудование. Нанотехнология может также помочь в разработке новых методов измерений. Крошечные по размерам датчики можно разместить на любом оборудовании, в том числе и подземном. Тем самым, можно резко повысить количество и качество информации о продуктивном пласте.

Наиболее известная область применения нанотехнологии в нефтегазовой промышленности – это создание так называемых «умных» технологических жидкостей, или жидкостей с запрограммированными свойствами. Они находят применение в процессах интенсификации добычи, повышения нефтеотдачи пласта и при бурении скважин. К таким жидкостям относятся растворы ПАВ и полимеров, микроэмульсии, гели, а также бижидкостные пены (афроны).

Еще одна развивающаяся область промышленности занимается исследованием и применением «наножидкостей». Наножидкости – это технологические растворы с добавлением небольшого количества нанофракции твердых частиц для улучшения тех или иных свойств.

Наножидкости можно создавать таким образом, чтобы они были совместимы с флюидами и горными породами продуктивного пласта и в то же время не представляли опасности для окружающей среды. Некоторые из них уже находят применение и в скором времени они позволят решить ряд острых проблем, возникающих при бурении, заканчивании и эксплуатации скважин. Среди них снижение трения труб о стенки скважины, укрепление слабых песчаных пластов, борьба с гелеобразованием, изменение смачиваемости горных пород и борьба с коррозией. В настоящее время термин «наножидкость», главным образом, используют для описания суспензий (коллоидных систем с твердой дисперсной фазой), однако намечается тенденция к расширению понятия, то есть дисперсной фазой в наножидкостях могут быть наночастицы любой природы.

Одна из областей нанотехнологии – это супрамолекулярная химия, основанная на фундаментальном принципе самоорганизации, то есть самопостроении систем без грубых силовых воздействий. При осуществлении самоорганизации конечная наноструктура вещества как бы запрограммирована формой и свойствами образующих структуру молекул. Таким образом, системы с необходимой наноструктурой можно сформировать за счет тонких воздействий на макроскопические параметры системы, например, изменив состав системы.

Фазовые изменения наноколлоидов могут обусловить значительные изменения макроскопических свойств системы. Молекулы, способные к самоорганизации, существуют в различных системах. В нефтях же большинство самоорганизующихся молекул входят в состав асфальтеновых фракций, которую выделяют по признаку растворимости.

Многие традиционные технологии разработки месторождений подлежат пересмотру и должны проектироваться с учетом комплексных фазовых диаграмм, находящихся в нефти наноколлоидов, формируемых, в основном, асфальтенами. Проектирование разработки месторождений с учетом фазовых превращений наноколлоидов позволит получить продукцию с лучшими свойствами, или, по крайней мере, не нарушить тонкую внутреннюю организацию природных нефтей.

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НАНОСМАЗКИ: БУДУЩЕЕ ЭФФЕКТИВНОЙ СМАЗКИ В ПРОМЫШЛЕННОСТИ

Аннотация: *в последние годы наблюдается растущий интерес к использованию наносмазок — инновационных веществ, основанных на нанотехнологиях, которые обещают значительно улучшить смазочные свойства и увеличить срок службы механических систем. В данной статье рассматриваются основные принципы работы наносмазок, их преимущества по сравнению с традиционными смазочными материалами.*

Ключевые слова*: наносмазка, трение, износ, материалы, производство.*

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ANOSLUBS: THE FUTURE OF EFFICIENT LUBRICATION IN INDUSTRY

Abstract: *In recent years, there has been a growing interest in the use of nanoslubs, innovative substances based on nanotechnology that promise to significantly improve the lubricating properties and increase the service life of mechanical systems. This article discusses the basic principles of nanoslubs, their advantages over traditional lubricants.*

Keywords: *nanoslubrication, friction, wear, materials, production.*

Наносмазка — это современный метод смазки, который используется в различных отраслях производства для уменьшения трения и износа деталей машин и механизмов. В отличие от традиционных смазочных материалов, наносмазки имеют наноразмерные частицы, которые проникают в мельчайшие поры поверхности, обеспечивая долговечную защиту и улучшая эксплуатационные характеристики.

Для уменьшения процесса изнашивания контактирующих поверхностей и снижения величины сил трения в трибосопряжениях применяются разные смазывающие материалы. Смазывание применяется в технологических процессах механической обработки, связанной с удалением части материала резанием, как лезвийной, так и абразивной. Поэтому смазки должны обладать свойствами, адаптированными к конкретному процессу трения: величинам удельной и полной нагрузки в зоне трения; максимальной, средней и объемной температуры; характеру трения в зоне контакта (трение качения, скольжения или смешанное трение); физико-химическими характеристикам материалов пары трения; технологическим и эксплуатационным показателям параметров качества; свойствам окружающей среды и др. Для улучшения работы трибосопряжения с использованием смазки применяются активные препараты. Оправдано разделение активных препаратов: по структуре входящих в их состав активных составляющих; свойствам и характеру действия, основным активным компонентам, оказывающим воздействие на поверхности трения деталей машины.

Наиболее перспективными наномодификаторами смазочных и антифрикционных материалов в настоящее время являются наномодификаторы карбонной группы - фуллероидные материалы. Что обусловлено набором физико-химических свойств присущих этой новой алотропной модификации углерода, в которой химическая связь углерода представлена смешанным характером гибритизации (Sp2 - Sp3).

Многофункциональное воздействие фуллереновых материалов в зоне трения обеспечивается эффектом, связанным со снижением температуры в зоне трения, поскольку ФН обладают высокой теплопроводностью и

способностью к формированию собственной сетки на поверхности. Следствием снижения температуры в зоне трения является сохранение физико-химических и физико-механических характеристик, как смазочной среды, так и поверхностей трения материалов. Из-за повышенной сорбционной способности ФН к углеводородам они способны удерживать оболочку из адсорбированных молекул компонентов смазки и доставлять их в зону трения, когда наступает истощение их в зоне трибоконтакта из-за десорбции с металлической поверхностью при повышении температуры. Таким образом, происходит предотвращение адгезионного изнашивания трущихся металлических поверхностей.

Наночастицы, являясь центрами возникновения кавитационных пузырей, воспринимают энергию кавитационного удара и, в силу своей термобароустойчивости и особенностей строения электронной оболочки, аккумулируют её в виде возбужденных состояний электронов. В последующем диссипация этой энергии происходит за счет испускания низкоэнергитичных фононов, не способных вызвать разрушение материала трущихся поверхностей или молекул смазки.

Таким образом, наносмазка является перспективным направлением в области смазочных технологий, способствующим повышению эффективности и надежности производственных процессов.

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БОЛЬШИЕ ДАННЫЕ В НЕФТЕГАЗОВОЙ ОТРАСЛИ: ТЕХНОЛОГИИ, ТРЕНДЫ И ПЕРСПЕКТИВЫ

Аннотация: *в последние годы подходы, основанные на больших данных, становятся ключевыми для трансформации нефтегазовой отрасли. В данной статье мы исследуем, как современные технологии сбора, хранения и обработки больших объемов данных влияют на эффективное управление ресурсами, оптимизацию производственных процессов и повышение безопасности. Рассматриваются примеры успешного внедрения аналитических инструментов, таких как машинное обучение и искусственный интеллект, которые позволяют предсказывать спрос, минимизировать расходы на бурение и улучшать экологическую устойчивость.*

Ключевые слова: *большие данные, информация, аналитика, цифровые технологии, оптимизация.*

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BIG DATA IN THE OIL AND GAS INDUSTRY: TECHNOLOGIES, TRENDS AND PROSPECTS

Abstract: *In recent years, big data-based approaches have become key to the transformation of the oil and gas industry. In this article, we explore how modern technologies for collecting, storing and processing large amounts of data affect effective resource management, optimization of production processes and increased security. Examples of successful implementation of analytical tools such as machine learning and artificial intelligence, which can predict demand, minimize drilling costs and improve environmental sustainability, are considered.*

Keywords*: big data, information, analytics, digital technologies, optimization.*

В последние годы технологии больших данных (Big Data) стали неотъемлемой частью нефтегазовой отрасли, обеспечивая значительные улучшения в процессе добычи, переработки и распределения углеводородов. Сбор и анализ больших объемов данных, таких как геологическая информация, данные о скважинах, параметры добычи и рыночные условия, позволяют компаниям более точно прогнозировать запасы углеводородов и оптимизировать процессы.

Использование больших данных в нефтегазовой индустрии представляет собой стратегически важный аспект современного технологического прогресса. Это включает в себя сбор, анализ и применение огромных объемов данных для оптимизации процессов, улучшения безопасности и эффективности, а также принятия обоснованных решений. В данном контексте ключевые аспекты включают:

1. Аналитика и оптимизация: применение алгоритмов анализа данных для оптимизации бурения, процессов добычи и транспортировки нефти и газа с целью повышения производительности и снижения затрат.

2. Мониторинг и предотвращение аварий: использование больших данных для непрерывного мониторинга состояния оборудования и предсказания возможных технических сбоев с целью предотвращения аварий и минимизации простоев.

3. Прогнозирование резервов: анализ данных для точного прогнозирования запасов нефти и газа, что способствует более эффективному планированию добычи и инвестиционным решениям.

4. Технологии машинного обучения: внедрение алгоритмов машинного обучения для создания предиктивных моделей, способных адаптироваться к изменяющимся условиям и улучшать точность прогнозов.

5. Интеграция данных: создание единой информационной платформы, интегрирующей данные со всех этапов производственного цикла - от разведки до транспортировки.

6. Безопасность и управление рисками: анализ данных для выявления потенциальных угроз и управления рисками, что особенно актуально в условиях сложных геологических и климатических условий.

7. Энергоэффективность: применение данных для оптимизации энергопотребления и снижения экологического воздействия нефтегазовых операций.

Несколько примеров использования больших данных в нефтегазовой промышленности:

- Shell использует большие данные для оптимизации добычи нефти и газа. Компания использует датчики, чтобы собирать данные о состоянии скважин и оборудования. Эти данные используются для разработки моделей, которые помогают Shell предсказать, когда скважина будет истощена, и определить, когда необходимо провести ремонт или замену оборудования.

- BP использует большие данные для мониторинга своих трубопроводов. Компания использует датчики, чтобы собирать данные о давлении, температуре и других параметрах трубопроводов. Эти данные используются для выявления потенциальных проблем до того, как они станут серьезными.

- ExxonMobil использует большие данные для разработки новых методов добычи нефти и газа. Компания использует компьютерное моделирование для изучения различных сценариев добычи. Это помогает ExxonMobil выбрать наиболее эффективный и безопасный метод добычи.

Большие данные имеют потенциал для преобразования нефтегазовой промышленности. Они могут помочь сделать отрасль более эффективной, устойчивой и безопасной. В настоящее время нефтегазовые компании активно внедряют большие данные в свои операции. По мере того, как

технологии больших данных продолжают развиваться, мы, вероятно, увидим еще больше инноваций в этой области.

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ПРИМЕНЕНИЕ КОМПОЗИЦИОННЫХ МАТЕРИАЛОВ ПРИ ДОБЫЧЕ НЕФТИ И ГАЗА

Аннотация: *в статье рассматриваются перспективы применения композитных материалов в производстве оборудования для нефтегазовой отрасли. Подробно анализируются преимущества композитов, такие как высокая прочность при низком весе, коррозионная стойкость и долговечность, а также их влияние на снижение эксплуатационных затрат и повышение эффективности работы. Рассмотрены примеры успешных внедрений композитных технологий в различных областях, таких как бурение, транспортировка и переработка углеводородов.*

Ключевые слова: *композиционные материалы, углеводороды, морские комплексы, фторполимеры, агрессивные среды.*

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THE USE OF COMPOSITE MATERIALS IN OIL AND GAS PRODUCTION

Abstract: *the article discusses the prospects for the use of composite materials in the production of equipment for the oil and gas industry. The advantages of composites, such as high strength at low weight, corrosion*

resistance and durability, as well as their impact on reducing operating costs and improving work efficiency, are analyzed in detail. Examples of successful implementations of composite technologies in various fields such as drilling, transportation and processing of hydrocarbons are considered.

Keywords: *composite materials, hydrocarbons, marine complexes, fluoropolymers, aggressive media.*

Нефтегазовая отрасль является источником повышенных требований к применяемым в ней материалам: высокие давления и температуры рабочих сред, создаваемые как естественными источниками - пластовой энергией, так и промысловым оборудованием - насосами, компрессорами и прочими рабочими агрегатами, а так же вибрации, высокие нагрузки на оборудование, зачастую в сочетании с наличием агрессивных и коррозионноактивных к традиционным материалам компонентов - сероводорода, водорода, хлористых солей. Применение композиционных материалов позволяет выдерживать эти высокие требования, что особенно важно с учетом роста доли труднодоступных морских месторождений, а также месторождений с «кислыми» газами.

Композиционные материалы применяются практически на всех этапах пути следования углеводородного сырья, начиная от промыслов и заканчивая потребителями. К областям использования композиционных материалов в нефтегазовой промышленности относят:

- системы сбора нефти и газа;
- системы поддержания пластового давления;
- системы магистрального транспорта нефти и газа, морского транспорта углеводородов, в том числе и сжиженного природного газа;
- системы распределения сырья и продуктов до конечного потребителя.

В продукции скважин содержатся: сероводород, углекислый газ, углеводородный и водный конденсат, вызывающие значительное коррозионное разрушение промыслового оборудования. Химические методы защиты (ингибиторы и т.п.) не дают общего положительного эффекта, лишь сокращают скорость коррозии. Для решения указанной проблемы наиболее эффективным является создание оборудования в коррозионностойком исполнении и дополнительное проведение технологических мероприятий на определенной стадии эксплуатации. Это, в первую очередь, касается магистральных и промысловых нефте- и газопроводов, а также технологических аппаратов для первичной подготовки и переработки нефти и газа, скважинного оборудования, различных видов насосов и запорной арматуры.

Вторая проблема - удаление солевых отложений в призабойной зоне скважины, в лифтах скважин, шлейфах и на стенках оборудования. В процессе эксплуатации промысла по мере увеличения выноса

минерализованной пластовой жидкости появляется дополнительное выпадение солей (преимущественно карбонатов и сульфатов кальция) и образование плотного осадка по всему тракту движения газо-жидкостного потока от скважин, соединительных трубопроводов до технологического оборудования. Имеющиеся способы введения реагентов, растворяющих неорганические отлагающиеся соли нетехнологичны, и имеют другие недостатки, в частности загрязнение нефтихимикатами.

Для решения этих проблем отечественные специалисты предложили использовать фторполимеры. Главным направлением применения фторполимеров является защита металла фторполимерными покрытиями. В результате, оборудование и трубопроводы приобретают ценные свойства без существенного изменения конструкции. Правильно подобранные покрытия позволяют не только обеспечить защиту от коррозионного разрушения в агрессивных средах, но и предотвратить образование отложений парафинов и солей, снизить гидравлическое сопротивление трубопроводов и насосного оборудования за счет уменьшения шероховатости и налипания, защитить оборудование от эрозионного и механического износа, обеспечить чистоту перекачиваемого продукта, повысить герметичность разъемных неподвижных соединений, уменьшить металлоемкость конструкций.

Работу на шельфе зачастую сравнивают со сложностью и требованиями к работе в космической отрасли, что и предопределяет использование передовых технологий, позволяющих снизить вес и металлоемкость оборудования, что особенно важно в условиях ограниченного пространства платформ.

Использование композитов позволило улучшить характеристики прибрежных сооружений, где придают конструкциям специфические свойства, особенно в комбинации с другими материалами. Составные шланги, фалы, намоточная труба, палубная труба, ограждение, «умные» системы мониторинга и новые концепции для транспорта натурального газа являются лишь малой частью из успешных применений композитов. Сторонники композитных материалов в крупных нефтяных компаниях говорят, что хотя это может занять некоторое время, несколько последних неудач в областях подъемников и сборочной трубы могут быть быстро преодолены

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ЭКОНОМИЧЕСКИЕ НАУКИ

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ИЗМЕНЕНИЯ КРАНИОМЕТРИЧЕСКИХ ПОКАЗАТЕЛЕЙ У СОБОЛЕЙ В ПРОЦЕССЕ ПРОМЫШЛЕННОГО РАЗВЕДЕНИЯ

Аннотация. *В статье представлены результаты изучения изменений краниометрических показателей соболей в процессе их промышленного разведения. Установлено, что в современных условиях разведения череп самцов и самок соболя стал длиннее. Исследования показали, что длина лицевой части черепа уменьшилась, длина мозговой части черепа и ширина слуховых барабанов увеличилась, а длина слуховых барабанов не претерпела изменений.*

Ключевые слова: *соболь, соболеводство, доместикация, череп, краниометрия.*

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CHANGES IN CRANIOMETRIC INDICATORS IN SABLES DURING INDUSTRIAL BREEDING

Abstract. *The article presents the results of studying changes in the craniometric parameters of sables in the process of their industrial breeding. It was found that under modern breeding conditions the skull of male and female sables has become longer. Studies have shown that the length of the facial part of the skull has decreased, the length of the brain part of the skull and the width of the auditory drums have increased, and the length of the auditory drums has not changed.*

Keywords*: sable, sable breeding, domestication, skull, craniometry.*

Введение. Клеточное пушное звероводство – это отрасль животноводства, производящая ценную и нужную продукцию для населения страны, особенно для людей, проживающих в холодном климате.

В настоящее время ведущими объектами звероводства являются такие биологические виды, как норка американская (*Mustela vison*), соболь (*Martes zibellina*), лисица (*Vulpes vulpes*). Одним из наиболее динамично развивающихся и рентабельных направлений звероводства является соболеводство [1, 2, 3].

Промышленное разведение соболей было начато в нашей стране в 1931 г. в зверосовхозе «Пушкинский». Для этого в хозяйство были завезены звери, отловленные в природе. Селекционная работа долгое время была направлена на получение соболей с наиболее тёмной окраской, лучшим качеством опушения, более крупного размера по сравнению с особями природных популяций. За годы разведения соболей на специализированных фермах были достигнуты значительные успехи – разработана технология клеточного разведения, улучшились продуктивные качества зверей, получено три породы и один породный тип [3, 4, 5].

В связи с этим большой практический и научный интерес представляет анализ доместикационных преобразований, возникших у фермерских соболей за период их клеточного разведения. Цель работы – изучить изменения краниометрических показателей соболей в процессе их промышленного разведения.

Материал и методы. Исследования проводили в ООО «Звероплемзавод «Савватьево» Тверской области. Объектом исследования были самцы и самки соболя породы Салтыковская 1. Возраст зверей был старше одного года. Материалом для исследований были черепа соболей, полученные во время планового убоя в хозяйстве.

Снятие промеров проводили при помощи штангенциркуля с точностью 0,1 мм. Во время исследования определяли базилярную длину, кондилобазальную длину, длину лицевой части черепа, длину и ширину мозговой части черепа, длину и ширину слуховых барабанов.

Полученные данные обрабатывали при помощи метода вариационной статистики в программе Excel (2017). Для проведения анализа доместикационных преобразований краниометрических показателей, возникших у фермерских соболей в период их клеточного разведения, были использованы данные литературы [6].

Результаты исследований. Полецким В.А. при исследовании промысловой (забайкальской) и совхозной (зверосовхоз «Салтыковский») популяций соболей в 1957 г. было установлено, что череп клеточных соболей стал длиннее и уже. Ширина и длина слуховых барабанов была больше у диких. Монахов В.Г. при изучении краниометрических показателей у диких (добытых в Предбайкалье, верховье Лены) и клеточных соболей (зверосовхоз «Салтыковский») в 1967 г. пришёл к аналогичному выводу [6].

Таблица 1. Промеры черепа соболей

Промеры черепа	Самцы		Самки	
	Собственные исследования, 2024	Данные Монахова Г.И., 1967	Собственные исследования, 2024	Данные Монахова Г.И., 1967
	n=4	n=24	n=17	n=25
базилярная длина	85,25±0,99	75,40±0,27***	79,11±0,52	69,01±0,26***
кондилобазальная длина	84,35±0,22	82,74±0,25***	77,62±0,37	75,43±0,28***
длина лицевой части	31,53±3,16	35,86±0,17	25,89±0,42***	32,38±0,17
длина мозговой части	57,05±1,24	54,98±0,24	54,71±0,94	50,28±0,21***
ширина мозговой части	34,55±0,30	35,12±0,18	33,32±0,28	32,85±0,15
ширина слуховых барабанов	13,65±0,65	11,34±0,14**	13,29±0,15	10,41±0,08***
длина слуховых барабанов	19,18±0,77	19,02±0,12	17,66±0,45	17,80±0,10

Примечание: **P≥0,99; *** P≥0,999

Данные таблицы 1 свидетельствуют о том, что в процессе промышленного разведения у самцов соболя достоверно увеличились следующие краниометрические показатели: базилярная длина черепа (P≥0,999), кондилобазальная длина черепа (P≥0,999) и ширина слуховых барабанов (P≥0,99). У самцов наблюдается тенденция к увеличению длины мозговой части черепа. Кроме того, отмечается тенденция к уменьшению ширины мозговой части черепа и длины лицевой его части. По длине слуховых барабанов разница не установлена.

При анализе доместикационных преобразований краниометрических показателей у самок была установлена достоверно большая базилярная длина черепа (P≥0,999), кондилобазальная длина черепа (P≥0,999), длина мозговой части черепа (P≥0,999) и ширина слуховых барабанов (P≥0,999) у современных соболей. При этом длина лицевой части у самок в 2024 г. достоверно меньше чем у самок в 1967 г. (P≥0,999). Установлена тенденция к увеличению ширины мозговой части черепа у современных самок по сравнению с самками 1967 г. По длине слуховых барабанов у самок, как и у самцов, разница не установлена.

Заключение. В результате проведённых исследований было установлено, что общая конфигурация черепа у соболя изменилась в процессе его промышленного разведения. В современных условиях разведения череп самцов и самок соболя стал длиннее. При этом длина лицевой части черепа уменьшилась, а длина мозговой части - наоборот увеличилась. Ширина мозговой части черепа у соболей практически не

изменилась. В процессе доместикации ширина слуховых барабанов у самцов и самок соболя увеличилась, а длина не претерпела изменений.

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ДИНАМИКА ПРОДАЖИ ПРОМЫСЛОВЫХ И ФЕРМЕРСКИХ ШКУРОК СОБОЛЕЙ НА МЕЖДУНАРОДНЫХ ПУШНЫХ АУКЦИОНАХ «СОЮЗПУШНИНА», ПРОВОДИМЫХ В ПЕРИОД С 2016 ПО 2024 ГГ. В САНКТ-ПЕТЕРБУРГЕ

Аннотация. *Работа посвящена сравнительному анализу результатов торгов шкурками промысловых и фермерских соболей на международных пушных аукционах «Союзпушнины» в период с 2016 по 2024 гг., которые проводятся 4 раза в год в г. Санкт-Петербурге. Информация получена из официальных открытых источников Аукционной компании «Союзпушнина». В ходе анализа были отмечены минимумы и максимумы процента реализации шкурок соболей и средней цены в различные года за рассматриваемые 8 лет. Установлено, что шкурки промысловых соболей превосходят шкурки фермерских соболей по количеству выставляемых на аукцион, по проценту реализованных и, в большинстве случаев, по средней цене за шкурку.*

Ключевые слова: *шкурки, соболь, аукцион, продажи, цена, промысловый, фермерский*

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DYNAMICS OF SALE OF COMMERCIAL AND FARM SABLE SKINS AT THE INTERNATIONAL FUR AUCTIONS "SOYUZPUSHNINA", HELD IN THE PERIOD FROM 2016 TO 2024. IN ST. PETERSBURG

Abstract. *The work is devoted to a comparative analysis of the results of trading in the skins of commercial and farm sables at the international fur auctions "Soyuzpushniny" in the period from 2016 to 2024, which are held 4 times a year in St. Petersburg. The information was obtained from official open sources of the Soyuzpushnina Auction Company. During the analysis, the minima and maxima of the percentage of sales of sable skins and the average price in different years for the 8 years under consideration were noted. It has been established that the skins of commercial sables surpass the skins of farm sables in terms of the number of auctioned, the percentage of sold and, in most cases, the average price per skin.*

Keywords*: skins, sable, auction, sales, price, commercial, farming*

Введение. Соболь — это один из самых ценных пушных зверей, который привлекает внимание человека на протяжении многих веков своим красивым и густым мехом.

Соболь (*Martes zibellina* Linnaeus, 1758) является национальным символом России. Промысел этого зверя имеет очень богатую историю и большое значение для нашей страны. Шкурки соболя использовались в качестве валюты, играли важную роль в торговле с другими странами, а освоение Сибири во многом было стимулировано активной добычей пушнины. Известно, что в те времена заготовки соболя превышали уровень в 200 тыс. шкурок. Это привело к тому, что из-за неконтролируемой добычи к началу XX века соболь стал вымирающим видом. Уже к концу XVII века его численность значительно сократилась. Среднегодовая добыча соболя в середине XVII столетия составляла 145 тыс. шкурок. В первое десятилетие XX века ежегодная добыча в Сибири составляла 20 тыс. шкурок, а на момент Октябрьской революции - только 8 тыс. Правительством СССР был введен полный запрет на добычу и продажу шкурок соболя, который вступил в силу с 1 января 1935 г. Эффективность его обеспечивалась монополией государства на скупку пушнины. В 1940-х гг. были созданы органы Государственной охотничьей инспекции и начались планомерные реакклиматизационные работы. В этот период начался естественный процесс восстановления ареала соболя и его численности, который был подкреплен активными работами по акклиматизации, контролем промысла и биотехническими мероприятиями. В комплексе принятые меры давали положительные результаты. Численность соболя за пятилетний запрет промысла возросла, границы ареала расширились. Следует отметить и благоприятные природные условия, которые обеспечили обильную и

устойчивую кормовую базу соболя. Но до окончательного восстановления промысловой численности было еще далеко. Поэтому в 1940 г. была введена лицензионная система, ограничивающая добычу соболя.

Все силы, направленные на восстановление соболя в природе, благоприятно на его численность. В 1960 г. популяция соболя составила 701 тыс. особей, в 1978 г. – 723 тыс. особей, к 1988 г. увеличилась до 1180 тыс. особей. В 80-х годах возобновилась его активная добыча. Сегодня роль ресурсов соболя не только экономическая, но и социальная. Охотничий промысел – это распространенная форма зимней занятости населения, а ареал дикого соболя охватывает 25 субъектов РФ. В настоящее время почти 95% популяции соболя находится именно на территории России [1,2].

Россия – первая и единственная страна, в которой была разработана и успешно внедрена в производство промышленная технология клеточного разведения соболя [3]. Начало создания технологии содержания соболя относится к началу 30-х годов прошлого века, когда в зверосовхозе «Пушкинский» ныне «Русский соболь», были предприняты попытки разведения отловленного в природе соболя. В то время также существовала острая необходимость сокращения объемов добычи для сохранения популяции диких соболей на территории России.

В последнее время попытки разведения соболей в клеточных условиях предпринимаются и в других странах - Китае, Дании и Финляндии. В связи с этим в ближайшее время возможно возникновение конкуренции в данной отрасли, поэтому необходимо повышение эффективности производства шкурок соболей в Российской Федерации. На меховом рынке шкурки соболя всегда пользовались повышенным спросом. В настоящее время прослеживается тенденция к увеличению интереса к шкуркам промыслового соболя в сравнении со шкурками соболя клеточного разведения [2].

Цель работы – проанализировать спрос на шкурки промысловых и фермерских соболей на Международном пушном аукционе «Союзпушнина», проводимых в период с 2016 по 2024 гг. в Санкт-Петербурге.

Материалы и методы. Для анализа были использованы данные из официальных открытых источников Аукционной компании «Союзпушнина» о результатах продаж шкурок промыслового соболя и шкурок соболей клеточного разведения на Международных пушных аукционах «Союзпушнина», проводимых в период с 2016 по 2024 гг. в Санкт-Петербурге. На их основании был смоделирован график продаж шкурок промысловых и фермерских соболей и колебаний их средней цены. Все результаты были обработаны при помощи программы Excel (2017).

Результаты исследований. На декабрьских Международных аукционах «Союзпушнина» традиционно выставляются шкурки клеточного соболя, на январских и апрельских – в основном большие коллекции шкурок

промыслового соболя, на сентябрьских – допродается апрельский товар [4]. В таблице приведены сводные годовые результаты продаж шкурок соболя и цены на них на аукционах «Союзпушнина» с 2016 по 2024 г.г. [5].

Таблица – Сводные данные результатов Международных пушных аукционов «Союзпушнина» по продаже шкурок промысловых и клеточных соболей (2016-2024 г.г., Санкт-Петербург)

Год	Соболь	Выставлено	Продано	%	Цены за 1 шкурку, ам. долл.		
					Мин.	Средн.	Макс.
2016	Промысловый	453464	453464	100,0	1,00	90,44	1600,00
	Фермерский	108984	56528	51,87	3,00	73,52	180,00
2017	Промысловый	540771	527432	97,53	20,00	115,76	1900,00
	Фермерский	80376	22735	28,29	30,00	81,32	135,00
2018	Промысловый	574502	482092	83,91	10,00	89,04	2000,00
	Фермерский	137131	29386	21,43	12,00	94,01	150,00
2019	Промысловый	470302	410969	87,38	8,00	74,75	1800,00
	Фермерский	134100	40 842	30,46	15,00	47,89	500,00
2020	Промысловый	376828	145174	38,53	5,00	55,71	800,00
	Фермерский	109028	24050	22,06	4,50	48,12	500,00
2021	Промысловый	252702	222786	88,16	8,00	61,54	2300,00
	Фермерский	120774	38567	31,93	5,00	47,73	1200,00
2022	Промысловый	526251	263373	50,05	14,00	79,53	1500,00
	Фермерский	80692	54154	67,11	10,00	49,84	390,00
2023	Промысловый	305708	213222	69,75	8,00	89,37	900,00
	Фермерский	71011	67263	94,72	5,75	103,52	1200,00
2024	Промысловый	370175	322736	87,18	15,00	92,24	1400,00
	Фермерский	14597	12162	83,32	10,00	134,94	500,00

2016 год. Все выставленные на продажу шкурки промыслового соболя (453 464 шт.) проданы в среднем по 90,44 $ за 1 шкурку. Выручка составила 41 млн. американских долларов. Шкурки фермерского соболя дали выручку 4,2 млн. $ - было продано 56528 шкурок в среднем по 73,5 $.

2017 год. За шкурки промыслового соболя выручено 61,1 млн. $ (продано 527432 шкурки по цене 115,76 $). Максимальная цена по отдельным лотам шкурок промыслового соболя составила 1900 $ за 1 шкурку, минимальная 20 $. Шкурки фермерского соболя реализованы в этом

году на 1,8 млн. американских долларов - было продано всего 28,3 % шкурок от 80376 выставленных на торги.

2018 год. Было выставлено на продажу 574502 шкурки промыслового соболя, продано 83,9 %, что дало выручку 42,9 млн. $. Шкурок фермерского соболя продано 21 % от выставленных. Средняя цена за шкурку была 94 $, выручка – 2,3 млн. $.

2019 год. Было реализовано шкурок промысловых соболей 410969 (87,38 % от выставленных) по средней цене 74,75 $. Полученная выручка 35,9 млн. $. Максимальная цена за шкурку 1800, минимальная 8 $.

Шкурок фермерского соболя продано 40897 шкурок (30,7 % от выставленных), выручено 2 млн. $. Максимальная цена за шкурку 500, минимальная 15 $.

В **2020 году** продажи шкурок промыслового соболя были минимальными за анализируемый период. Из выставленных 376828 шкурок было реализовано 38,53 %, что дало выручку 8,1 млн. $. Не лучшее положение и по продажам фермерского соболя – из 109028 выставленных на продажу шкурок, было реализовано только 22,06 %, что составило около 2 млн. $ выручки.

2021 год. Шкурок промыслового соболя продано 88,16 % от выставленных, шкурок фермерских соболей – 31,93 %, выручка составила 13,7 и 1,8 млн. $, соответственно.

В 2022 году реализовано 263373 шкурки промыслового и 54154 шкурки фермерского соболя, что составило 50,05 и 67,11 %, соответственно.

Удачным для продажи шкурок фермерского соболя оказался **2023 год** – из выставленных 71011 шкурок, было продано 94,72 %, по средней цене 103,52 $. Максимальная цена за шкурку составила 1200 $, выручено 6,4 млн. $. Шкурок промышленного соболя реализовано в этот год 69,75 % от 305708 выставленных на торги. Выручка составила 19 млн. $.

В 2024 году по итогам февральского, майского и сентябрьского аукционов получены следующие результаты: продано 322736 шкурок промыслового и 12162 шкурки фермерского соболя. Средние цены 92,24 и 134,94 $ шкурку, соответственно. Максимальная цена за шкурку промыслового соболя 1400 $, фермерского – 500 $.

Следующий аукцион в 2024 году состоится в декабре.

Максимальное количество шкурок промыслового соболя было выставлено на продажу в 2018 г. – 574502 штук, максимум шкурок фермерского соболя был в 2019 г. – 134100 штук.

Сравнительный анализ показал, что за рассматриваемый период минимальное количество выставленных шкурок промыслового соболя на аукционах было продано в 2020 г. (38,53%), а максимальное – в 2016 г. (100,0%); по шкуркам фермерских соболей минимум реализации приходиться на 2018 г. (21,43%), а максимум на 2023 г. (94,72%).

Наибольшая предложенная средняя цена на шкурки промыслового соболя была в 2017 г. (115,76$), а наименьшая - в 2020 г. (55,71 $). Максимальная средняя цена на шкурки фермерского соболя отмечена в 2024 г. 134,94 $, минимальная – в 2021 г. (47,73 $).

Заключение. Шкурки промысловых соболей превосходят шкурки фермерских соболей по количеству выставляемых на аукцион, по проценту реализованных и, в большинстве случаев, по средней цене за шкурку. Это связано с большей изменчивостью по окраске соболей природных популяций. В промышленном соболеводстве необходимо вести селекционную работу по улучшению качества и окраски волосяного покрова.

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ВЫСОТА ВОЛОСЯНОГО ПОКРОВА У НОРОК ДВУХ СЕЛЕКЦИОНИРУЕМЫХ ТИПОВ ПОРОДЫ САПФИР

Аннотация. *В статье представлены результаты сравнительного анализа метрических параметров волосяного покрова двух селекционируемых типов американских норок породы сапфир: средневолосой и коротковолосой. Было установлено, что у норок обоих селекционируемых типов остевые и пуховые волосы у самцов статистически достоверно длиннее, чем у самок. Остевые волосы у зверей средневолосого типа породы сапфир статистически достоверно длиннее, чем у норок коротковолосых (не зависимо от пола). В среднем длина пуха у норок средневолосого типа больше, чем у норок сапфир коротковолосых (P>0,999). Коэффициенты вариабельности длины остевых волос у норок сапфир селекционируемого типа коротковолосые, ниже, чем у норок средневолосые, что говорит о большей уравненности волос этого типа.*

Ключевые слова: *норка, порода, сапфир, селекционируемый тип, длина волос, ость, пух*

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THE HEIGHT OF THE HAIR COVER IN MINKS OF TWO SELECTED TYPES OF THE SAPPHIRE BREED

Abstract. *The article presents the results of a comparative analysis of the metric parameters of the hairline of two selected types of American mink of the sapphire breed: medium-haired and short-haired. It was found that in minks of*

both selected types, the guard and down hairs of males are statistically significantly longer than those of females. The guard hairs of medium-haired sapphire type animals are statistically significantly longer than those of short-haired minks (regardless of gender). On average, the down length of medium-haired minks is longer than that of short-haired sapphire minks (P>0.999). The coefficients of variability of the length of the guard hairs in sapphire minks of the selected type are short-haired, lower than in medium-haired minks, which indicates a greater equalization of this type of hair.

Keywords: *mink, breed, sapphire, selected type, hair length, awn, down*

Введение. За короткий период существования, в звероводстве достигнуты большие успехи в селекции. В отечественной и мировой практике для разведения используется большое количество мутантных и комбинативных типов пушных зверей. Эффективность использования генетического разнообразия находится в прямой зависимости от знания изменчивости и наследования основных хозяйственно-полезных признаков пушных зверей.

Основной продукцией звероводческих хозяйств является пушнина – выделанные шкурки пушных зверей, используемые для производства меховых изделий. Норка американская как объект звероводства оказалась уникальным явлением мирового масштаба. В XIX веке канадские фермеры показали пример искусственного увеличения численности этого ценного пушного зверька. В настоящее время на фермах норок значительно больше, чем в естественных условиях обитания по всему современному ареалу.

В процессе доместикации у норок появилось много новых мутантных типов окраски, отличающихся от окраски дикого типа. Некоторые окрасочные мутации встречаются в природе, например, альбиносы, но, будучи менее приспособленными к условиям обитания, они, как правило, элиминируются. Другие мутантные типы появились под воздействием жесткой селекции, направленной на улучшение хозяйственных признаков.

В настоящее время цветные норки широко распространены. На сегодняшний день в мире известно свыше 200 цветовых вариаций окраски волосяного покрова у американских норок. Большинство цветных шкурок в нашей стране получают от норок рецессивных мутаций серебристо-голубой, пастель, паломино, хедлунд, соклотпастель, ампалосеребристая, сапфир и др. Все цветовые типы норок по преобладающему цвету в окраске волосяного покрова можно разделить на группы: коричневых, голубых, белых, черных и пятнистых. Норка сапфир относится к группе голубых норок. В связи с современной модой на коротковолосую пушнину, в хозяйствах РФ ведется селекция на укорочение волос норок всех имеющихся пород. В з/х ООО «Меха» сохраняется стадо средневолосых норок породы сапфир и параллельно ведется селекция на укорочение волосяного покрова у норок этой породы [2].

Цель работы - изучить морфологические особенности волосяного покрова двух селекционируемых типов (коротковолосые и средневолосые) норки породы сапфир.

Материал и методы. Морфологические особенности волосяного покрова изучали на примере двух селекционируемых типов породы сапфир американских норок в ООО «Меха».

С этой целью были взяты образцы волос в период бонитировки от 10 самцов и 10 самок каждого селекционируемого типа. Пробы брали в точке пересечения двух условных линий: линии, ограничивающей заднюю треть туловища, и линии, проходящей между боком и хребтом. Для определения длины в каждой пробе были измерены 25 остевых волос I категории и 25 волос пуховых. В остевом волосе измеряли длину граны и стержня. Данные измерений статистически обработали.

Результаты и обсуждения исследований

Волосяной покров пушных зверей состоит из волос различных категорий – кроющих и пуховых. К первым относятся остевые, они ланцетовидной формы: верхняя часть их уплощена и расширена. У основания пластинки (в так называемой «шейке» волоса) они слегка изогнуты. Остевые волосы у норки полностью прикрывают подпушь. Пуховые волосы, образовывающие подпушь, составляют основную массу волосяного покрова (95-97%). Это относительно короткие волосы цилиндрической формы, более или менее развитые. Основная роль пуха – создание теплоизолирующего слоя благодаря воздушным прослойкам между отдельными волосками. Кроющие волосы предотвращают или снижают сваленность пуха [1].

Таблица - Длина остевых и пуховых волос сапфировых норок разных селекционируемых типов, мм (n=250)

Тип норок	Пол	Длина волос, мм					
		Остевых				Пуховых	
		Всего волоса		граны			
		$\bar{X} \pm S_x$	Cv, %	$\bar{X} \pm S_x$	Cv, %	$\bar{X} \pm S_x$	Cv, %
Сапфир коротковолосая	♂	22,5±0,14	7,0	9,4±0,10	12,0	15,5±0,06	4,1
	♀	21,5±0,15	7,7	9,3±0,10	11,8	14,5±0,08	6,6
Сапфир средневолосая	♂	28,9±0,22	8,6	13,5±0,14	11,6	17,8±0,07	4,3
	♀	27,1±0,21	8,7	12,9±0,16	13,5	16,5±0,06	3,0

Как видно из таблицы, длина остевых волос больше у норок породы сапфир, которая относится к средневолосому селекционному типу. У самцов средняя длина остевых волос составляет 28,9 мм, при длине граны 13,5 мм.

Длина пуха у самцов указанной породы составляет 17,8 мм. Разница между средней длиной ости и средней длинной пуха составляет 11,1 мм и ость в 1,6 раза длиннее подпуши. У самок сапфир средневолосого селекционного типа средняя длина остевых волос составляет 27,1 мм, при длине граны 12,9 мм. Коэффициент изменчивости длины остевых волос составляет 8,7%, длины граны 13,5%. Взаимосвязь длины остевого волоса с длиной его граны у самок сапфир средневолосая составляет r = 0,76. Средняя длина пуховых волос у самок указанной породы составляет 16,5 мм. Разница в длине остевых и пуховых волос составляет 10,6 мм, ость превышает пух в 1,6.

У самцов коротковолосой норки сапфир средняя длина остевых волос составляет 22,5 мм, что на 6,4 мм меньше, чем у средневолосой, соответственно и грана на 2,6 мм короче (в обоих случаях разница достоверна, P>0,999). У остевых волос самок наблюдается такая же тенденция – длина всего волоса и его граны достоверно меньше у коротковолосых самок в сравнении с средневолосыми (P>0,999).

Очень важным показателем структуры волосяного покрова норок является соотношение длины остевых и пуховых волос. Чем оно меньше, тем более уравненным и пышным выглядит опушение зверей. При селекции на укорочение волос остевые волосы укорачиваются быстрее, чем пуховые. Разница в длине оси и пуха у самок и самцов коротковолосых норок составляет 7 мм.

Коэффициенты вариабельности длины остевых волос у норок сапфир селекционируемого типа коротковолосые, ниже, чем у норок средневолосые, что говорит о большей уравненности волос этого типа.

Предложение производству. В силу того, что селекционная работа в звероводстве напрямую зависит от тенденций моды и спроса на продукцию на пушном рынке, рекомендуется вести селекцию на укорачивание и уравнивание длины кроющих волос у норок породы сапфир, путем тщательного отбора и подбора.

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ОПЫТ ЗАРУБЕЖНЫХ СТРАН В СФЕРЕ РЕГУЛИРОВАНИЯ ДЕЯТЕЛЬНОСТИ ИНСТИТУТОВ ТЕЛЕВИДЕНИЯ

Аннотация: *В данной статье изучается история опыта регулирования деятельности телевизионных институтов в зарубежных странах. Основное внимание уделено механизмам государственного контроля и регулирования телевизионных институтов в рамках законодательства различных стран. В частности, рассматриваются методы, направленные на обеспечение соответствия отрасли, информационную безопасность и сохранение культурных ценностей. Данная статья будет полезна для изучения опыта, способствующего развитию телевизионной сферы в Узбекистане, и может послужить для оптимизации процессов координации и управления.*

Ключевые слова: *телевизионные институты, регулирование, зарубежный опыт, государственный контроль, информационная безопасность, культурные ценности.*

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THE EXPERIENCE OF FOREIGN COUNTRIES IN THE FIELD OF REGULATING THE ACTIVITIES OF TELEVISION INSTITUTIONS

Abstract: *This article examines the history of the experience of regulating the activities of television institutions in foreign countries. The main attention is paid to the mechanisms of state control and regulation of television institutions within the framework of the legislation of various countries. In particular, the methods aimed at ensuring compliance with the industry, information security and preservation of cultural values are considered. This article will be useful for studying the experience that contributes to the development of the television industry in Uzbekistan, and can serve to optimize coordination and management processes.*

Keywords: *television institutions, regulation, foreign experience, state control, information security, cultural values.*

В начале 1980-х гг. в Европе из 40 общественных каналов существовало только четыре коммерческих: в Люксембурге, Финляндии и Великобритании. К концу двадцатого века чаши весов уравновесились. В настоящее время в семнадцати европейских странах существуют почти 60 общественных и более 70 частных национальных телеканалов (покрывающих более 50% домашних хозяйств). Кроме того, существуют сотни частных кабельных и спутниковых каналов, работающих на небольшие аудитории и специализирующихся на спорте, музыке, новостях и т.н. Таким образом, возникает «общее общественное пространство», поскольку «информационное пространство одной социальной системы всегда шире ее географических границ и потому может взаимодействовать с информационными пространствами и полями других систем, а потому все социальные системы на уровне информационных полей взаимосвязаны». Только Австрия, Ирландия и Швейцария позиционируют себя как столпы «чистого общественного вещания», но на деле в последних двух странах уже существуют несколько небольших частных каналов, а в Австрии вещают 19 местных телестанций. «Это лишь вопрос времени, все идет к тому, что в Европе не останется ни одной страны без федеральных частных каналов»[1]. Телевизионная аудитория поделена сегодня между гораздо большим количеством телеканалов. Если, к примеру, доля аудитории BBC сегодня равна 44%, то в 1989 г. эта цифра была равна 50%.

Первой и наиболее известной общественной телекомпанией является английская Би-би-си. Исторически так сложилось, что вещание в Англии рассматривается как общественная сфера, ответственная перед народом посредством Парламента. Однако в последние десятилетия эта «общественная сфера» существовала в рыночных условиях. Британская Вещательная Компания, основанная в 1922 г., на сегодняшний день является самой крупной общественной телерадиокомпанией. Би-би-си финансируется за счет абонентной платы, которая собирается с каждого домашнего хозяйства. С 1955 г. конкуренцию Би-би-си составляет канал Ай-ти-ви. Правительственные лицензии и регулирование вещания осуществляются через Независимую Телевизионную Комиссию (ITC) и Радиокомитет. В Великобритании существует множество спутниковых и кабельных телеканалов, а также независимые радиокомпании. Просмотр телепрограмм — наиболее популярное времяпрепровождение в Британии. Средний англичанин проводит более трех с половиной часов перед телевизором. В 97% английских домов есть цветные телевизоры, 73% — обладают видеомагнитофонами. Фактически в каждом доме есть радио и примерно 70% англичан ежедневно слушают радио. Би-би-си-1 и Би-би-си-2 — крупнейшие национальные телевизионные сети, каждый канал обеспечивает полный диапазон программ, в то время как другие телекомпании преимущественно имеют специализацию. В эфире Би-би-си нет рекламы, образовательные программы транслируются на регулярной

основе. Кроме того, в состав Би-би-си входят пять радиоканалов, вещающих по всей Англии[2].

Опыт Великобритании в области общественно-правового вещания был перенят другими странами. А законодательная база стала отправной точкой для регулирования деятельности общественных телекомпаний. Современные исследователи Даниэль Халлин и Паоло Манчини выделяют три модели сосуществования политических систем и СМИ. В соответствии с географическим местонахождением и сопутствующими элементами политической жизни (прежде всего, отношения власти и журналистики) европейские медиасистемы делятся на следующие группы: средиземноморская, или многополярная плюралистическая модель; северо-центральная европейская, или демократически-корпоративная модель; североатлантическая, или либеральная модель.

Как видно, деление европейских стран произведено на основе многих показателей. Однако Д. Халлин и П. Манчини признают, что некоторые страны относятся к той или иной модели с определенными оговорками. Так, например, США и Великобритания, небезосновательно, оказались отнесены к либеральной системе, но — по разным показателям. Теория «англо-американской» модели журналистики не перенесла испытания временем. Великобритания, скорее, находится где-то между либеральной моделью и демократически-корпоративной, которая превалирует в северных странах континентальной Европы. Франция также находится в пограничном состоянии между многополярной плюралистической моделью и демократически-корпоративной. Взять хотя бы один пример: общий тираж французских газет выше, чем в других «средиземноморских» странах, но ниже, чем в остальной Европе. Бельгия также имеет некоторые признаки средиземноморской модели — например, допустимое влияние политических партий на деятельность общественного вещателя. Швецию можно по некоторым показателям причислить к либеральной модели: как один из них — многоступенчатая защита общественного вещания от контроля политических партий, но, в то же время, остальные параметры скандинавской страны очень отличают ее от североатлантической модели. Германия, в которой многополярная плюралистическая система окончательно рухнула в 1945 году (новые политические и медиа модели стоились на руинах нацизма), во многом не похожа на другие маленькие корпоративные демократии Северной Европы. Испания и Португалия схожи в том, что половину двадцатого века были диктатурами — этим они отличаются от Италии и Франции, с несравнимо более длительными историями демократической политики.

«По оценкам международных организаций, Россия занимает место в шестом десятке стран как по использованию информационных технологий, так и по развитию информационной инфраструктуры. Более 40 тысяч населенных пунктов в России не телефонизированы. Телерадиовещательная

сеть во многих регионах России выработала свой ресурс, устарела физически и морально» [3]. Можно сказать, что и в телевещании мы донашиваем технологическое наследие советских времен, не создав пока полноценной замены аналоговому вещанию. «По данным государственной статистики, около 1,5 млн. человек, проживающих примерно в 10 тысячах населённых пунктов Российской Федерации, вообще не охвачены телевизионным вещанием, а 3,7 млн. имеют возможность принимать лишь одну телевизионную программу» [4].

В постсоветской России, несмотря на процессы демократизации, проблема «открытости» политической власти остается актуальной и по сегодняшний день. Как представляется, именно в данной области лежат многие препятствия на пути формирования гражданского общества в современной России. Одно из главных оснований демократического общества – это установление единых и понятных «правил игры» для всех субъектов политики в информационной сфере. Эти правила должны выражаться не только в принципах, но и в механизмах, обеспечивающих прозрачность власти и доступ к ее информационным ресурсам[5]. Первые шаги к «открытости» власти были сделаны еще в годы «перестройки» обоснованием значимости и необходимости гласности в деятельности советских и партийных органов. После прихода к власти Б.Н. Ельцина отдельные аспекты информационно-коммуникационных взаимоотношений между властью и обществом были отражены в законе о СМИ 1991 г. РФ подписала Окинавскую хартию глобального информационного общества. Для практической реализации положений этой Хартии необходимо обеспечение прозрачности функционирования государства, его органов, связанное, в частности, с формированием открытых государственных информационных ресурсов и обеспечением свободного доступа к ним граждан. Кроме того, вступив в Совет Европы, Россия также приняла на себя ряд обязательств по информационной открытости[6]. В частности, это касается рекомендации № R (81) 19 Комитета министров государств-членов Совета «О Доступе к информации, находящейся в государственном веденье». Суть этих рекомендаций заключается в четырех принципах:

- каждый человек имеет право получения по запросу информации, находящейся в распоряжении государственных ведомств, за исключением законодательных органов и органов судебной власти;

- в доступе к информации не может быть отказано под предлогом, что обратившийся за информацией не имеет специальных интересов в данной области;

- государственное ведомство, отказывающее в предоставлении информации, должно объяснить причину отказа в соответствии с законом или практикой;

- каждый отказ в предоставлении информации может быть обжалован.

Невыполнение этих рекомендаций может сильно осложнить процессы интеграции РФ с Западом, в частности, затруднить вступление в ВТО, где одним из условий выступает информационная открытость. Как пишет Е. Колыванов, необходимо понимать, что радио и телевидение, находящиеся в собственности государства, не могут рассматриваться как служба общественного вещания. Существует довольно широко распространенное заблуждение, что СОВ и системы государственного радио- и телевещания являются синонимами. Эта ошибка обусловлена тем, что лишь в очень небольшом числе стран имеется настоящие СОВ, в большинстве государств функционируют системы государственного радио- и телевещания, частично выполняющие общественные функции (таким примером могло бы служить Гостелерадио СССР). На современном этапе в сравнении с коммерческим радио и телевидением государственное вещание воспринимается как в большой мере ориентированное на служение обществу, что ведет к столь распространенному смешению СОВ и систем государственного вещания.

Хотя находящиеся под государственным контролем системы радио и телевидения действительно выполняют некоторые функции общественного вещания, контроль над ними со стороны правительства, модели финансирования, недостаточные самостоятельность и беспристрастность в деле программирования и управления не позволяют квалифицировать их как службу общественного вещания[7].

Таким образом, хотя государственные организации радио- и телевещания решают определенные задачи общественного вещания, их нельзя считать настоящими организациями службы общественного вещания, так как они не соответствуют всем требованиям, предъявляемым к последним. Вместе с тем важно подчеркнуть, что коммунальное и муниципальное радио- и телевещание, хотя оно и может выполнять некоторые функции общественного вещания, не в состоянии заменить СОВ с его более широким взглядом на вещи и национальным уровнем охвата. Приступая к изучению института общественного телевидения, следует учитывать философские и политические концепции, оказавшие влияние на формирование задач телевидения. В чем состоит тот идеал, к которому стремится общество, и чем оно может пожертвовать для достижения этой цели? Какие ценности (духовные, материальные) и нормы (морали, поведения) обязательны для каждого индивидуума, и что делать с личностью, которая эти установки не приемлет (осознанно или бессознательно)? Наконец, кто должен определять общественные установки, оставаясь при этом в демократических рамках? В Западной Европе эта роль отчасти отводится общественному вещанию, которое призвано быть форумом, где обсуждаются вышеназванные вопросы. Служба общественного вещания как модель организации СМИ была разработана для преодоления внутренней слабости и недостатков двух господствующих

систем организации вещания — модели радио и телевещания под государственным контролем и коммерческой модели, ориентированной на извлечение прибыли. Модель службы общественного вещания, сложившаяся из видения некоторыми роли радио, основывалась на опасениях, что рыночные механизмы не смогут обеспечить выполнение определенных целей, а также на неверии в способность государства добиться тех же целей, достижения которых ждут от общественного вещания все еще и сегодня, то есть информировать, образовывать и развлекать. Такое видение роли и значения общественного вещания подразумевает создание публичной организации, служащей гражданам, культуре и демократии.

Е. Колыванов предлагает определение понятия «общественное вещание», которое разработал, приступая к работе над исследованием[8]. Итак, общественное вещание есть форма организации электронных СМИ, призванная обслуживать потребности социума в информации и аудиовизуальных программах, существующая на деньги аудитории и действующая в рамках демократического законодательства, но не подконтрольная государственным органам власти. В структуру общественного вещания могут входить телекомпании и радиостанции, спутниковые каналы и Интернет сайты, а также любые другие электронные средства массовой информации и коммуникации, которые общественный вещатель сочтет полезными и необходимыми для исполнения свой прямой обязанности — служения обществу. Профессор Санкт-Петербургского университета С. Бодрунова характеризует общие принципы европейского телерегулирования[9]:

1. Обеспечение свободы выражения как одной из базовых свобод. Этот принцип прослеживается в основных законодательных документах ЕС об информационном пространстве в 1970-е и 1980-е гг. Во всех них свобода выражения на телевидении понимается как принцип фундаментальной важности для всего телесектора.

2. Обеспечение перехода телесектора на стандарты информационного общества. Переход к информационному обществу стал одной из целей ЕС; современное состояние медиасреды воспринимается, таким образом, как транзитивное. Политика ЕС в сфере регулирования ТВ строится в рамках концепции информационного общества.

3. Защита демократии средствами телевидения. Здесь (с опорой на первый принцип) телевидение мыслится как средство поддержки демократического процесса и политического разнообразия в ЕС, поскольку единая Европа строит и единое публичное пространство, а это пространство мыслится как демократическое на всех уровнях (от местного до общеевропейского).

4. Благоприятствование европейскому телеконтенту. Сразу же оговорим: европейский контент понимается в законодательстве как

созданный в Европе и/или как направленный на освещение европейских тем и проблем. В рамках, скажем, сетки передач какого-либо канала могут преследоваться одна или обе этих цели.

5. Обеспечение рыночного многообразия в телесекторе. В ст.10б Европейской конвенции о трансграничном телевидении говорится: «Стороны, в духе сотрудничества и взаимопомощи, который предполагается в данной Конвенции, будут стараться избегать программ, передающихся или репродуцирующихся поставщиком телеуслуг или другими юридическими или физическими лицами в их юрисдикциях… и создающих угрозу рыночному плюрализму» [10]. Речь в цитате идет о контенте. Но, например, ст.11 Хартии фундаментальных прав (второй части Лиссабонского договора) понимает рыночное многообразие не только как плюрализм медиаконтента, но и (в основном) как плюрализм на медиарынке.

6. Защита общественного вещания. § 2 ст.11 Хартии фундаментальных прав предполагает существование правил плюральности контента, которые в особенности касаются служб общественного вещания (СОВ, в общепринятой в ЕС английской версии — public service broadcasting, PSB). Эти правила выражаются, например, в неприменении некоторых норм общего свободного рынка к общественным вещателям.

7. Поддержание культурного многообразия в ЕС посредством телевидения. Здесь законодательные стратегии ЕС могут быть разделены на две главные части: защита разнообразия местных народов ЕС и политика в сфере СМИ по поводу мигрантов и иных меньшинств. Права меньшинств, включая национальные меньшинства, рассмотрены отдельно в AMFD 2007. Существует ряд резолюций ПАСЕ (и их число сильно возросло за последние годы), генеральная линия которых сосредоточена на культурном аспекте плюральности контента и ассимиляции и снижении напряжения в новых мигрантских группах, а также национальных и иных меньшинствах.

Китайский ученый Чжан Сяншэн в научной работе «Телевидение в общественно-политической жизни КНР: опыт, проблемы и тенденции развития» (Владивосток, 2010) пишет[11]: несмотря на определенные успехи в развитии телевидения, в условиях рыночных реформ китайское телевидение переживает сегодня сложный и противоречивый переходный период. В стране ведется трудный поиск оптимальной модели развития ТВ, ибо ни тотальный государственный контроль, ни невидимая рука рынка не могут в полной мере обеспечить становление современного телевещания, как нормального дееспособного, публичного, социокультурного института. Новый быстро развивающийся Китай, нуждается в более ограниченной, адаптированной к национальной специфике модели развития телевидения, основанной на традициях китайской политической культуры, замешанной, в том числе, и на идеях конфуцианства…Китайская национальная модель развития телевидения сегодня все больше учитывает запросы и интересы всех участников телевизионного информационного пространства:

(государства, общества, телезрителей, вещателей и собственников каналов). Оно все больше заимствует разнообразный положительный опыт, накопленный в телевещании других стран. Будущее китайского телевидения на наш взгляд, за смешанной системой телевидения, которая сочетает различные типы и принципы деятельности государственной, общественной и частной сферы. Происходящие на телевидении КНР процессы, имеют свою внутреннюю логику и специфику, однако они неотделимы от общемировых тенденций, связанных с изменениями принципов функционирования телевидения, с изменением его задач в эпоху глобализации. Глобализация диктует необходимость сделать страну более открытой и демократичной.

Телевидение в Соединѐнных Штатах - это прежде всего бизнес. США - единственная страна, где телевещание с самого начала возникло как чисто коммерческое предприятие. Его созданием и развитием занимались исключительно частные фирмы[12]. В Соединенных Штатах система телевидения децентрализована. В отличие от большинства других стран в США нет центральных национальных эфирных станций. Вместо них на локальных рынках медиа действует около полутора тысяч региональных телевизионных станций, абсолютное большинство которых является филиалами крупных телевизионных сетей. За соблюдением этих правил следит государственный орган Федеральная комиссия связи (Federal Communications Commission), иногда её именуют также Федеральная комиссия по коммуникациям. Это независимое правительственное агентство, которое занимается регулированием различных видов связи, как между американскими штатами, так и между США и зарубежными странами. Руководят её деятельностью пять управляющих, которые назначаются президентом США. Их кандидатуры должны быть также утверждены сенатом. Из числа управляющих президент США назначает председателя комиссии. Не более трёх управляющих должны представлять одну политическую партию. Управляющие утверждаются на пятилетний срок. Сейчас Си-Би-Эс может охватывать своим вещанием 97% американских домов. У неѐ 204 филиала. Она чаще других телесетей занимает первое место по телевизионному рейтингу в США. Только Фокс отобрала у неѐ это преимущество в 2008 году, да и то ненадолго. Логотип Си-Би-Эс - «око» считается самым популярным в Америке. Его называют американской иконой. По данным на июнь 2008 года передачи канала Си-Эн-Эн были доступны 93 миллионам американских домохозяйств и более, чем в 890 тысячах номерах гостиниц. А программы «Си-Эн-Эн Интернешнл» доступны полутора миллиардам людей в 212 странах мира. У компании более 900 станций-филиалов.

Они коммерческое телевидение, но в США существует и общественное. Его метод финансирования - спонсорские средства. Они поступают из трёх источников: от государства, от частных физических лиц

и в наибольшей степени от корпораций. Всего в Соединѐнных Штатах насчитывается около 350 станций общественного телевидения, созданных муниципалитетами, общественными организациями, университетами. Большинство из них объединяет телесеть «Общественная вещательная служба» (Public Broadcasting Service или, сокращѐнно, Пи-Би-Эс). Её штаб-квартира находится в предместье Вашингтона городке Александрия. Роль телевидения в жизни американцев трудно переоценить. Оно играет ведущую роль в формировании общественного мнения в стране. Особенно проявляется это в периоды избирательных кампаний[13]. Хотя Интернет завоевывает всё более прочные позиции в системе массовых коммуникаций, но и сегодня, пожалуй, ни один кандидат не имеет шансы быть избранным, как в Конгресс, так, тем более, и в Белый Дом без активного использования телевидения. С переходом на цифровое телевещание, ещё большим распространением кабельного и спутникового телевидения, постепенным срастанием с Интернетом значение этого средства массовой коммуникации и в политике, и в повседневной жизни людей будет сохраняться.

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