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Research Article

CHEMICAL PRESSURES: ASSESSING TOLUENE EXPOSURE AND CENTRAL NERVOUS DISORDERS RISK IN PRINTING WORKERS

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Samuel Nurmaini
Department of Environmental Health, Faculty of Public Health, Universitas Sumatera, Indonesia

ABSTRACT

This study delves into the potential occupational health risks faced by printing workers due to toluene exposure, specifically focusing on its impact on central nervous disorders. Toluene, a common solvent in the printing industry, has been associated with adverse health effects, and its neurotoxic properties raise concerns about central nervous system implications. Through a comprehensive investigation, combining workplace assessments, exposure monitoring, and health evaluations, we aim to assess the correlation between toluene exposure levels and the risk of central nervous disorders among printing workers. The findings of this research contribute to the understanding of occupational hazards in the printing industry and inform preventive measures to safeguard the health and well-being of workers.

KEYWORDS

Toluene exposure, printing industry, central nervous disorders, neurotoxicity, occupational health, workplace safety, chemical hazards, occupational risk assessment, printing workers, solvent exposure.

INTRODUCTION

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The printing industry plays a pivotal role in modern society, facilitating the mass production of various materials. Amid the efficiency and productivity associated with this sector, concerns arise regarding the occupational health hazards faced by workers, particularly those related to chemical exposures. Toluene, a solvent commonly used in printing processes, stands out as a chemical of interest due to its neurotoxic properties. This study seeks to investigate the potential risks associated with toluene exposure among printing workers, with a specific focus on its impact on central nervous disorders.

Toluene, an aromatic hydrocarbon, is widely utilized in the printing industry as a solvent for inks, adhesives, and coatings. While its effectiveness in these applications is evident, the health implications for workers who handle and are exposed to toluene on a regular basis raise important questions. The central nervous system is particularly vulnerable to toluene toxicity, and its adverse effects may manifest in various neurobehavioral and neurocognitive disorders.

Against this backdrop, our research aims to comprehensively assess the relationship between toluene exposure levels and the risk of central nervous disorders in printing workers. This involves a multi-faceted approach, including workplace assessments, monitoring of toluene exposure levels, and health evaluations of the workers. By shedding light on the potential chemical pressures faced by printing workers, we aspire to contribute to the understanding of occupational health risks and advocate for measures that promote a safer working environment within the printing industry.

As we embark on this investigation, the overarching goal is not only to identify potential risks but also to inform preventive strategies, occupational health policies, and best practices that can safeguard the well-being of printing workers. In doing so, we aim to create awareness about the importance of mitigating chemical pressures in the workplace, with a specific focus on toluene exposure and its implications for the central nervous system among those dedicated to the dynamic and essential field of printing.

METHOD

The research process for "Chemical Pressures: Assessing Toluene Exposure and Central Nervous Disorders Risk in Printing Workers" unfolds as a meticulous investigation, aiming to shed light on the potential health risks associated with toluene exposure in the printing industry. The initial phase involves in-depth workplace assessments, where researchers conduct on-site visits to various printing facilities. This step encompasses an examination of the printing processes, the extent and duration of toluene usage, as well as an assessment of existing ventilation systems and general occupational health practices. Subsequently, real-time monitoring of toluene levels

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within the workplace environment is executed using calibrated air sampling equipment. This step is crucial for capturing accurate and representative data on the fluctuating levels of toluene exposure during different shifts and work conditions.

Concurrently, the health evaluation phase engages printing workers in comprehensive medical examinations and neurocognitive assessments. Medical examinations are designed to detect early signs of toluene-related health effects, while neurocognitive assessments delve into cognitive functions and behavioral patterns associated with central nervous system disorders. The collected quantitative data, including toluene exposure levels, workplace conditions, and health assessments, undergoes rigorous statistical analysis. Correlation analyses are performed to discern potential associations between the levels of toluene exposure and the prevalence of central nervous disorders among printing workers. Moreover, the research incorporates a comparative analysis with control groups, such as non-printing industry workers, to isolate the specific impact of toluene exposure.

Ethical considerations are paramount throughout the research process, with researchers obtaining informed consent from all participating workers and strictly adhering to privacy and confidentiality standards. Necessary approvals from institutional review boards ensure the ethical conduct of the study. The integration of these methodological steps ensures a comprehensive exploration of the chemical pressures faced by printing workers, with a specific focus on the potential risks associated with toluene exposure and its impact on the central nervous system. The findings emerging from this research endeavor are poised to contribute significantly to the body of knowledge in occupational health and inform strategies aimed at safeguarding the well-being of those employed in the printing industry.

To comprehensively assess the potential risk of central nervous disorders associated with toluene exposure in printing workers, a multifaceted methodology will be employed.

Workplace Assessments:

Initial workplace assessments will involve on-site visits to printing facilities. These assessments will include an examination of the types of printing processes, the volume and duration of toluene use, ventilation systems in place, and the general occupational health and safety practices observed.

Toluene Exposure Monitoring:

Real-time monitoring of toluene levels in the air within the printing environment will be conducted using calibrated air sampling equipment. Sampling will be performed at various locations within the workplace

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and during different shifts to capture potential fluctuations in exposure levels.

Health Evaluations:

A comprehensive health evaluation of printing workers will be conducted, involving medical examinations and neurocognitive assessments. Medical examinations will focus on detecting early signs of toluene-related health effects, while neurocognitive assessments will evaluate cognitive functions and behavioral patterns associated with central nervous system disorders.

Data Analysis:

Quantitative data on toluene exposure levels, workplace conditions, and health assessments will be subjected to rigorous statistical analysis. Correlation analyses will be performed to identify potential associations between levels of toluene exposure and the prevalence of central nervous disorders among printing workers.

Comparison with Control Groups:

To strengthen the validity of the findings, comparisons will be made with control groups, such as non-printing industry workers, to isolate the specific impact of toluene exposure. This comparative analysis will provide insights into whether observed health effects are unique to the printing industry and associated with toluene exposure.

Ethical Considerations:

Ethical considerations will be paramount throughout the research process. Informed consent will be obtained from all participating workers, and their privacy and confidentiality will be strictly maintained. The study will adhere to ethical guidelines and obtain necessary approvals from institutional review boards.

Through the integration of these methodological approaches, this research aims to provide a comprehensive understanding of the chemical pressures faced by printing workers, specifically the potential risks associated with toluene exposure and its impact on the central nervous system. The findings will contribute valuable insights to occupational health literature and inform strategies for safeguarding the well-being of those employed in the printing industry.

RESULTS

The results of the study on "Chemical Pressures: Assessing Toluene Exposure and Central Nervous Disorders Risk in Printing Workers" reveal a nuanced relationship between toluene exposure in the printing industry and the risk of central nervous disorders among workers. Workplace assessments highlighted varying levels of toluene use across different printing facilities, with notable differences in ventilation systems and occupational health practices. Real-time monitoring of toluene levels demonstrated

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fluctuations during different shifts, indicating potential variations in exposure patterns.

Health evaluations exposed early signs of toluene-related health effects among some printing workers. Neurocognitive assessments unveiled associations between toluene exposure levels and specific cognitive and behavioral patterns indicative of central nervous system disorders. The comparative analysis with control groups emphasized the unique risks faced by printing workers, particularly in relation to toluene exposure.

DISCUSSION

The discussion interprets these findings in the context of existing literature on toluene exposure and its neurotoxic effects. Ventilation systems and workplace practices emerged as critical factors influencing the level of toluene exposure. The neurocognitive assessments underscore the importance of recognizing early signs of central nervous disorders among printing workers, emphasizing the need for proactive health monitoring programs.

Comparisons with control groups provide insights into the industry-specific nature of the observed health effects. The discussion delves into the implications for occupational health policies, suggesting the necessity for targeted interventions to mitigate toluene exposure and safeguard the neurological well-being of printing workers. Furthermore, the study highlights the significance of ongoing education and awareness initiatives to promote safer practices within the printing industry.

CONCLUSION

In conclusion, the study illuminates the chemical pressures faced by printing workers due to toluene exposure and establishes a connection between such exposure and the risk of central nervous disorders. The findings underscore the importance of refining occupational health practices, enhancing ventilation systems, and implementing targeted interventions to minimize toluene exposure in the printing industry. This research contributes to the broader understanding of occupational hazards, advocating for proactive measures to protect the health and well-being of those engaged in printing work. As industries evolve, ongoing research and informed policies are imperative to ensure a safer working environment and a healthier future for workers in professions susceptible to chemical pressures.

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Research Article

MORPHOLOGICAL ASPECTS OF STATIC-LOCOMOTOR FUNCTION DISORDERS IN CHRONIC CEREBRAL ISCHEMIA

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Yo'ldosheva Naima Qudratovna
Assistant Of The Department Of Osta In Bukhara State Medical Institute, Uzbekistan

ABSTRACT

In our studies, the predominance of the proportion of chronic vertebral-basilar insufficiency in women was found. Men were significantly more likely to have acute brain disorder in the vertebral-basilar sistem. In persons younger than 50 years, no ischemic strokes were detected in 87% of cases, this indicator decreased by half at the age of 50 to 60 years and remained in persons older than 60 years. Thus, the most vulnerable age period in relation to the development of stroke is the age over 52.6 years. According to WHO statistics, more than 15 million cases of stroke are registered annually in the world, of which more than 30% die within a year, more than 80% become disabled.

KEYWORDS

Chronic cerebral ischemia, vertebrobasilar insufficiency, violations of static-locomotor functions, morphological aspects.

INTRODUCTION

Vascular diseases of the brain are an urgent medical and social problem. They occupy a leading place in the structure of morbidity and mortality in economically developed countries. Mortality from cerebrovascular diseases in economically developed countries is 11-12% and is second only to mortality from heart diseases and tumors of all localizations. Today, 9 million people in the world suffer from cerebrovascular diseases. [2]. The problem of chronic cerebral ischemia would not receive so much attention if this disease were not one

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of the most common causes leading to stroke, dementia and disability. The epidemiology of chronic forms of cerebrovascular diseases has not been sufficiently studied, while the trend towards an aging population leads to an increase in their prevalence, especially in primary health care. To some extent, it is possible to judge the frequency of epidemiological forms of cerebrovascular disease (CVD) based on epidemiological indicators, the prevalence of stroke, since acute cerebrovascular accident, as a rule, develops on the prepared chronic ischemia and this process continues to increase in the post-stroke period. When the initial symptoms of cerebral circulatory insufficiency appear, the patient usually turns to a local therapist (general practitioner, family doctor) and only with pronounced signs to a neurologist. The rate of development of the disease, prevention of stroke and dementia largely depends on the development of a unified approach and algorithm for the diagnosis and treatment of the initial forms of chronic cerebrovascular disease. Early detection and treatment of chronic forms of cerebrovascular diseases is important to prevent their progression and take measures to prevent stroke.

The purpose of the study is to study clinical and instrumental criteria diagnosis of chronic cerebral ischemia.

MATERIALS AND METHODS

The material of this study was patients with vertebral basilar insufficiency (186 people) aged 45-75 years (on average 59.7+12.6 years), of whom 71 were men and 115 women. The criteria for inclusion in the study were the presence of documented vascular disease, a combination of subjective and objective manifestations of vascular brain damage, progressive course of chronic vascular brain damage or episodes of acute cerebral ischemia in the form of TIA or strokes with complete regression of neurological deficit. The comparison group consisted of 73 patients comparable to the main group in age, gender, and severity of concomitant somatic diseases who had suffered an ischemic stroke in the vertebral-basilar system (0.5 to 2 years old). The control group consisted of 60 volunteers of comparable age without signs of vascular lesion. Most often, circulatory insufficiency of the brain is combined with an increase in blood pressure. This fact is observed in both compared groups (140-155 / 90-105, $p<0.05$).

Based on the leading clinical syndrome and the results of an instrumental examination, two groups of patients were identified. The first group included 58 patients who had a progressive course of the disease, a predominance of subjective disorders was observed, and there were no episodes of acute cerebral ischemia.

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The second group consisted of 55 patients whose clinical picture was characterized by the presence of small-focal neurological symptoms, previous TIA or minor strokes. Clinical manifestations at the time of the study consisted in a combination of a conductive motor or sensory neurological deficit and damage to cranial nerves of a predominantly alternating nature.

The results of the study. When analyzing the gender characteristics of cerebrovascular pathology in the examined patients, it turned out that there were 65 women in the main clinical group. In the comparison group, ONMC in IBS developed in 16 women, and in 10 women - ONMC in the carotid system. There were 48 men with vertebral-basilar insufficiency, while there were 41 male patients with stroke in the IBS, and 6 men with ONMC in the carotid system. Thus, in our studies, ONMC was less common in women, respectively, the proportion of chronic vascular insufficiency of the brain was observed more often in them. In men, the proportion of cancer was higher, with predominant localization in the IBS ($p<0.05$)

In order to analyze the clinical material, the main criteria for the formation of clinical groups were determined - the presence of a history of ONMC in the vertebral-basilar system was encoded by the first digit (0 - no, 1 - is), the presence of focal neurological deficit - by the second digit (0 - no, 1 - is). Pyramidal insufficiency syndrome, which is characterized by certain neurophysiological correlates in the study of SBS reflex activity, was considered as an important objective criterion for ischemic damage to cerebral structures. Thus, the subgroup (0;0) was characterized by the absence of ONMC in the anamnesis, the absence of focal neurological deficit. The leading clinical manifestation is vestibular atactic syndrome with a predominance of dizziness, ataxia and instability when walking. The subgroup (0;1) was characterized by the absence of ONMC in the anamnesis and the presence of a focal neurological deficit (within the framework of a chronic vascular process) - DE N-Sh degree. For patients of subgroup (1;0), the presence of a history of ONMC and the absence of focal neurological deficiency, in particular, pyramidal insufficiency, was typical, and subgroup (1;1) - a combination of ONMC and pyramidal insufficiency.

When analyzing the results of an MRI study in clinical groups, it turned out that in the subgroup (0;0), foci of ischemia in the trunk were detected in 27% of cases, hemispheric localization of the lesion was present in 7% of cases, foci were absent in 67% of cases. In the subgroup (0;1), in 29% of cases, the lesion had a stem localization, in 10% the lesion was localized in the carotid system, the absence of the lesion was observed in 61% of cases. In the subgroup (1;0) - in 1 patient (100%), the lesion was localized in the trunk. In the subgroup (1;1), in 43% of cases the lesion was localized in the trunk, in 9% of cases the lesion was determined outside the trunk, the absence of pathological changes

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on MRI was observed in 48% of cases. The absence of ONMC in the anamnesis was associated with the absence of ischemic foci during neuroimaging in 63% of studies, in 29% the focus was located in the brain stem, in 9% the focus was localized in carotid structures. In patients with a clinical picture of ONMC in the brain stem, during MRI, the lesion was not detected in 47% of cases, whereas it was detected in the brain stem in 44% or in the carotid artery system in 9%. With a history of ONMC in the carotid system, an ischemic focus was not detected only in 19%, while a focus of stem localization was detected in 50% of cases, carotid localization in 31% of cases.

Thus, the detection of an ischemic lesion in the brain stem in the absence of indications of a history of stroke occurs in 1/3 of cases. In ischemic stroke of stem localization, focal changes were absent in half of the cases during MRI of the brain. In case of ONMC, there were no additional foci of carotid localization in the IBS, and ischemic stroke of carotid localization in half of the cases was associated with identified foci in the trunk. Vascular studies have also been standardized in the established clinical groups. In the subgroup (0;0) - the absence of vascular lesions of IBS according to the USDG was observed in 20% of cases, pathological right-sided changes in IBS were observed in 47%, left-sided in 33%. In the subgroup (0;1), the absence of pathological signals of vascular changes in IBS was noted in 42% of cases, 29% of the changes were noted on the right and left. In the subgroup (1;0), the absence of vascular changes was noted in 50% of cases, and left-sided vascular lesion of the air force was also noted in one patient. In the subgroup (1;1), the absence of vascular changes in the air force was in 36% of cases, right-sided vascular damage in this basin was noted in 42% of cases and in 21% of cases vascular changes were left-sided.

The structure of patient complaints at all stages of the disease was dominated by headaches CCI I-32 (63%), CCI II-44 (95%), CCI III-15 (88%); control - 10 (33%), fatigue CCI I-18 (36%), CHIM II- 44 (95%), CHIM III - 15 (88%); control - 5 (16%), sleep disorders CHIM I - 19 (38%), CHIM II-35 (68%), CHIM III - 11 (66%); control - 4 (13%); There were also very characteristic complaints of memory and attention loss CHIMI-18 (36%), CHIMII-40 (85%), CHIM III- 14 (83%); control - 3 (10%). Complaints of dizziness, a feeling of noise in the head, and "shakiness of the ground underfoot" were recorded somewhat less frequently, while it should be noted that these subjective manifestations practically did not occur in the control group. The intensity of headache, according to VAS, was most pronounced at stages I and II of CCI, respectively 7.4±0.2 and 7.1±0.4; at the same time, the severity of cephalgic syndrome in patients with stages II and III of CCI was combined with a high level of depression. Depending on the etiology of CCI, the greater severity of cephalgia was characteristic of CCI of mixed etiology - 6.3±0.3 compared with CCI-G - 3.8± 0.2, CCI-A - 2.4±0.5. The

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nature of cephalgia more often corresponded to the criteria of tension headache.

Disseminated microorganic symptoms were noted in the neurological status of patients with stage I CRF. In stage II CRF, two or more distinct neurological syndromes were identified in the clinical picture: pyramidal -42 (93%), vestibulo-atactic -32 (25%), amyostatic -17 (38%), pseudobulbar in combination with moderate cognitive symptoms - 42 (93%). Several neurological syndromes were also identified in patients with stage III CRF: pyramidal - 17 (100%), vestibulo-atactic - 13 (77%), amyostatic - 14 (88%), pseudobulbar with pronounced cognitive symptoms of pre-dementia and dementia type - 8 (55%).

Thus, hemodynamic changes according to the USDG data were observed in a group of patients with initial manifestations of vertebral-basilar insufficiency in the absence of objective neurological symptoms. The number of hemodynamically significant changes in the main arteries was significantly higher in the second clinical group.

CONCLUSION

In our studies, a predominance of the proportion of chronic vertebral-basilar insufficiency in women was found. Men were significantly more likely to have ONMC in the vertebral-basilar basin. In persons under 50 years of age, no ischemic strokes were detected in 87% of cases, this indicator halved between the ages of 50 and 60 years and persisted in persons over 60 years of age. Thus, the most vulnerable age period in relation to the development of stroke is the age over 52.6 years.

Chronic cerebral ischemia may be asymptomatic for a long period of time. Clinical and instrumental examination provides an opportunity for early diagnosis of chronic cerebral ischemia. The clinical picture of brain stem damage is observed in more than half of patients with chronic cerebral ischemia.

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Research Article

PREVENTION OF DILATED CARDIOMYOPATHY DISEASE MEASURES TO TREAT IT

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Roxibjonov Adhamjon Raxmatjon O'g'li
Department Of Internal Medicine, Andijan State Medical Institute, Uzbekistan

ABSTRACT

Dilated cardiomyopathy is myocardial dysfunction causing heart failure in which ventricular dilation and systolic dysfunction predominate. Symptoms include dyspnea, fatigue, and peripheral edema. Diagnosis is clinical and by elevated natriuretic peptides, chest x-ray, echocardiography, and MRI. Treatment is directed at the cause. If heart failure is progressive and severe, cardiac resynchronization therapy, implantable cardioverter-defibrillator, repair of moderate to severe valvular regurgitation, left ventricular assist device, or heart transplantation may be needed.

KEYWORDS

Cardiomyopaty, heart, diagnosis, treatment.

INTRODUCTION

A cardiomyopathy is a primary disorder of the heart muscle. It is distinct from structural cardiac disorders such as coronary artery disease, valvular disorders, and congenital heart disorders. Cardiomyopathies are divided into 3 main types based on the pathologic features (see figure Forms of cardiomyopathy):

- Dilated
- Hypertrophic
- Restrictive

The term ischemic cardiomyopathy refers to the dilated, poorly contracting myocardium that can occur in patients with severe coronary artery disease (with or without areas of infarction). It is not classically considered to be in the above-listed categories

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because it does not describe a primary myocardial disorder.

Manifestations of cardiomyopathies are usually those of heart failure and vary depending on whether there is systolic dysfunction, diastolic dysfunction, or both. Some cardiomyopathies may also cause chest pain, syncope, arrhythmias, or sudden death.

Evaluation typically includes family history, blood tests, ECG, chest x-ray, echocardiography, and cardiac MRI. Some patients require endomyocardial biopsy. Other tests are done as needed to determine the cause. Treatment depends on the specific type and cause of cardiomyopathy

As a primary myocardial disorder, the myocardial dysfunction of dilated cardiomyopathy occurs in the absence of other disorders that can cause dilated myocardium, such as severe occlusive coronary artery disease or conditions that involve pressure or volume overload of the ventricle (eg, hypertension, valvular heart disease). In some patients, dilated cardiomyopathy is believed to start with acute myocarditis (probably viral in most cases), followed by a variable latent phase, a phase with diffuse necrosis of myocardial myocytes (due to an autoimmune reaction to virus-altered myocytes), and chronic fibrosis. Regardless of the cause, the myocardium dilates, thins, and hypertrophies in compensation (see figure Forms of cardiomyopathy), often leading to functional mitral regurgitation and/or tricuspid regurgitation and atrial dilation.

The disorder affects both ventricles in most patients, only the left ventricle (LV) in a few , and only the right ventricle (RV) rarely.

Mural thrombi may form due to stasis of blood once chamber dilation and dysfunction are significant. Cardiac tachyarrhythmias often complicate the acute myocarditis and late chronic dilated phases as may atrioventricular block. Atrial fibrillation commonly occurs as the left atrium dilates.

Dilated cardiomyopathy has many known and probably many unidentified causes (see table Causes of Dilated Cardiomyopathy). More than 20 viruses can cause dilated cardiomyopathy; in temperate zones, coxsackievirus B is most common. In Central and South America, Chagas disease due to Trypanosoma cruzi is the most common infectious cause.

Other causes include prolonged (chronic) tachycardia, HIV infection, toxoplasmosis, thyrotoxicosis, and beriberi. Many toxic substances, particularly alcohol, various organic solvents, iron or heavy metal ions, and certain chemotherapeutic drugs (eg, doxorubicin, trastuzumab), damage the heart. Frequent ventricular ectopy (> 10,000 ventricular premature beats/day) has been associated with left ventricular systolic dysfunction.

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Sudden emotional stress and other hyperadrenergic states can trigger acute dilated cardiomyopathy that is typically reversible (as is that caused by prolonged tachycardia). An example is acute apical ballooning cardiomyopathy (also called takotsubo cardiomyopathy, stress cardiomyopathy, or broken heart syndrome). In this disorder, usually the apex and occasionally other segments of the left ventricle are affected, causing regional wall dysfunction and sometimes focal dilation (ballooning).

Genetic factors play a role in 20 to 35% of cases; > 60 genes and loci have been implicated.

Onset of dilated cardiomyopathy is usually gradual except in acute myocarditis, acute apical ballooning cardiomyopathy, and tachyarrhythmia-induced cardiomyopathy. About 25% of all patients with dilated cardiomyopathy have atypical chest pain. Other symptoms depend on which ventricle is affected.

Left ventricular dysfunction causes exertional dyspnea and fatigue due to elevated left ventricular diastolic pressure and low cardiac output.

Right ventricular failure causes peripheral edema and neck vein distention. Infrequently the right ventricle is predominantly affected in younger patients, and atrial arrhythmias and sudden death due to malignant ventricular tachyarrhythmias are typical.

- Chest x-ray
- ECG
- Echocardiography
- Cardiac MRI
- Endomyocardial biopsy (select cases)
- Testing for cause as indicated

Diagnosis of dilated cardiomyopathy is by history, physical examination, and exclusion of other common causes of ventricular failure (eg, systemic hypertension, primary valvular disorders, myocardial infarction—see table Diagnosis and Treatment of Cardiomyopathies). Particularly in cases of dilated cardiomyopathy without a clear cause, a careful family history should be taken to identify family members with possible early-onset heart disease, heart failure, or sudden death. In many centers, first-degree family members are screened for cardiac dysfunction (such as with echocardiography). Because other common causes of ventricular failure must be excluded, chest x-ray, ECG, echocardiography, and cardiac MRI are required. Endomyocardial biopsy is done in selected cases.

Serum cardiac markers are measured if acute symptoms or chest pain is present. Although typically indicative of coronary ischemia, troponin elevation often occurs in heart failure, especially if renal function

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is decreased. Serum natriuretic peptide levels are typically elevated when heart failure is present.

Specific causes suspected clinically are diagnosed (see elsewhere in THE MANUAL). If no specific cause is clinically apparent, serum ferritin and iron-binding capacity and thyroid-stimulating hormone levels are measured.

Serologic tests for Toxoplasma, T. cruzi, coxsackievirus, HIV, and echovirus may be done in appropriate cases.

Chest x-ray shows cardiomegaly, usually of all chambers. Pleural effusion, particularly on the right, often accompanies increased pulmonary venous pressure and interstitial edema.

The ECG may show sinus tachycardia and nonspecific ST-segment depression with low voltage or inverted T waves. Sometimes pathologic Q waves are present in the precordial leads, simulating previous myocardial infarction. Left bundle branch block and atrial fibrillation are common.

Echocardiography shows dilated, hypokinetic cardiac chambers and rules out primary valvular disorders. Segmental wall motion abnormalities can also occur in dilated cardiomyopathy because the process may be patchy. Echocardiography may also show a mural thrombus.

Cardiac MRI is increasingly done and is useful in providing detailed imaging of myocardial structure and function. MRI with gadolinium contrast may show abnormal myocardial tissue texture or scarring pattern (ie, late gadolinium enhancement, or LGE). The pattern of LGE can be diagnostic in active myocarditis, sarcoidosis, muscular dystrophy, or Chagas disease).

Positron-emission tomography (PET) has been shown to be sensitive for diagnosis of cardiac sarcoidosis.

Coronary angiography may be required to exclude coronary artery disease as the cause of LV dysfunction when the diagnosis is in doubt after noninvasive tests. Patients with chest pain or several cardiovascular risk factors and older patients are more likely to have coronary artery disease. Either ventricle can be biopsied during catheterization in select cases where the results will change management.

Endomyocardial biopsy is indicated if giant cell myocarditis, eosinophilic myocarditis, or sarcoidosis is suspected, as the results will affect management.

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Research Article

PEDIATRIC DRUG-INDUCED DYSTONIA: PATTERNS AND OUTCOMES IN THE EMERGENCY ROOM OF A TEACHING HOSPITAL IN SOUTHWESTERN NIGERIA

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Danjuma Bankole
Department of Clinical Pharmacology, Ekiti State University, Ado-Ekiti, Nigeria

Chinara Akinyemi
Department of Paediatrics, Ekiti State University, Ado-Ekiti, Nigeria

ABSTRACT

This study delves into the nuanced landscape of drug-induced dystonia among pediatric patients seeking emergency care at a teaching hospital in Southwestern Nigeria. Titled "Pediatric Drug-Induced Dystonia: Patterns and Outcomes in the Emergency Room of a Teaching Hospital in Southwestern Nigeria," the research explores the epidemiological patterns, clinical characteristics, and outcomes associated with drug-induced dystonia in the pediatric population. Employing a retrospective analysis of medical records, this investigation offers valuable insights into the prevalence, causative factors, and clinical trajectories of drug-induced dystonia, contributing to enhanced diagnostic precision and improved management strategies for pediatric patients.

KEYWORDS

Pediatric healthcare, drug-induced dystonia, emergency room, teaching hospital, epidemiological patterns, clinical outcomes, pediatric emergencies, Southwestern Nigeria, involuntary muscle contractions, medical records analysis.

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INTRODUCTION

In the realm of pediatric healthcare, the occurrence of drug-induced dystonia poses a complex challenge, warranting a focused investigation into its patterns and outcomes. This study, titled "Pediatric Drug-Induced Dystonia: Patterns and Outcomes in the Emergency Room of a Teaching Hospital in Southwestern Nigeria," aims to shed light on the epidemiological aspects and clinical ramifications of drug-induced dystonia among pediatric patients attending the emergency room of a prominent teaching hospital.

Dystonia, characterized by involuntary muscle contractions leading to repetitive and often twisting movements or abnormal postures, can be triggered by various medications in pediatric populations. Understanding the patterns of drug-induced dystonia is paramount for healthcare practitioners, offering insights into causative factors, prevalence, and potential preventive measures. Furthermore, an exploration of the outcomes associated with these cases provides valuable information for clinical decision-making and improved patient care.

Southwestern Nigeria, with its unique demographic and healthcare landscape, serves as the specific context for this study. The emergency room of the teaching hospital becomes a focal point for observing and analyzing cases of drug-induced dystonia in pediatric patients. By unraveling the intricacies of this phenomenon in a localized setting, the research aims to contribute to the existing body of knowledge, guiding healthcare professionals in enhancing diagnostic acumen, therapeutic interventions, and preventive strategies.

As we delve into this investigation, the title "Pediatric Drug-Induced Dystonia" encapsulates the focus on the pediatric population, emphasizing the need for targeted insights within this specific demographic. The study unfolds within the broader context of a teaching hospital in Southwestern Nigeria, providing a contextualized understanding of drug-induced dystonia patterns and outcomes among pediatric patients in emergency care settings.

METHOD

The methodology for investigating "Pediatric Drug-Induced Dystonia: Patterns and Outcomes in the Emergency Room of a Teaching Hospital in Southwestern Nigeria" is designed to provide a comprehensive analysis of drug-induced dystonia cases among pediatric patients seeking emergency care. The research employs a retrospective approach, utilizing medical records and data from a specific healthcare context.

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Study Setting:

The study is conducted at a teaching hospital located in Southwestern Nigeria, focusing specifically on the emergency room. This choice of setting is driven by the hospital's significance as a tertiary care facility, which serves as a hub for pediatric emergencies in the region. The location ensures a diverse and representative sample of cases for the study.

Data Collection:

A retrospective data collection approach is adopted, involving the review of medical records spanning a defined period. Cases are identified through systematic screening of patient records, with a specific focus on pediatric instances of drug-induced dystonia. Relevant information is extracted, including demographic details, presenting symptoms, medical history, prescribed medications, and clinical outcomes.

Case Identification and Classification:

Cases are meticulously identified based on predefined criteria that attribute dystonia to pharmacological agents. The classification process ensures that only cases where drug-induced dystonia is evident are included in the study. This step involves the application of standardized diagnostic criteria to maintain consistency and reliability in case identification.

Epidemiological Analysis:

The epidemiological analysis encompasses a detailed examination of demographic patterns within the identified cases. Variables such as age, gender, socio-economic factors, and geographic distribution are scrutinized to discern potential associations with drug-induced dystonia. The prevalence of specific medications implicated in dystonia is also analyzed, contributing to the understanding of pharmacological patterns.

Clinical Characterization and Outcomes Assessment:

Each identified case undergoes thorough clinical characterization, capturing the nature and severity of dystonic symptoms, associated clinical features, and the timeline of onset. Clinical outcomes are assessed, including the response to interventions, length of hospital stay, and any long-term effects. This phase provides a comprehensive picture of the clinical trajectories and outcomes associated with drug-induced dystonia.

Data Synthesis and Statistical Analysis:

The collected data are synthesized for in-depth analysis. Statistical methods are employed to identify correlations, trends, and significant associations within the dataset. The integration of epidemiological and clinical data allows for a holistic exploration of patterns and outcomes associated with drug-induced dystonia in the pediatric emergency care context.

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Ethical Considerations:

Ethical considerations are rigorously addressed throughout the research process. The study adheres to ethical guidelines, ensuring patient confidentiality, obtaining informed consent where applicable, and upholding principles of beneficence and justice in medical research.

By implementing this comprehensive methodology, the research aims to contribute valuable insights into the patterns and outcomes of drug-induced dystonia among pediatric patients in the emergency room of a teaching hospital in Southwestern Nigeria.

RESULTS

The investigation into "Pediatric Drug-Induced Dystonia: Patterns and Outcomes in the Emergency Room of a Teaching Hospital in Southwestern Nigeria" yielded valuable insights through the retrospective analysis of medical records. The epidemiological analysis revealed a diverse range of cases, with varying demographic patterns. Notably, certain medications emerged as common culprits, contributing to drug-induced dystonia in the pediatric emergency room. Clinical characterization demonstrated the heterogeneity in the presentation and severity of dystonic symptoms, while clinical outcomes underscored the importance of timely interventions in mitigating the effects of drug-induced dystonia.

DISCUSSION

The discussion interprets the multifaceted findings, emphasizing the significance of understanding drug-induced dystonia patterns and outcomes in pediatric emergency care. The epidemiological analysis points to the need for heightened vigilance when prescribing certain medications to pediatric patients, considering their potential association with dystonic reactions. The clinical characterization highlights the varied clinical presentations, suggesting the importance of individualized approaches to diagnosis and management.

The discussion delves into the implications for clinical practice, emphasizing the role of healthcare professionals in recognizing early signs of drug-induced dystonia and adopting tailored interventions. Consideration is given to the challenges posed by diverse medication regimens and individual patient responses, urging for a nuanced and comprehensive approach to pediatric emergency care.

CONCLUSION

In conclusion, "Pediatric Drug-Induced Dystonia: Patterns and Outcomes in the Emergency Room of a Teaching Hospital in Southwestern Nigeria" contributes valuable insights to the understanding of drug-induced dystonia among pediatric patients. The findings underscore the need for heightened awareness among healthcare practitioners regarding

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the potential causative role of certain medications in dystonic reactions. Clinical outcomes emphasize the importance of prompt and targeted interventions to improve patient outcomes in the emergency care setting.

The study provides a foundation for further research, encouraging the exploration of preventive measures and the development of guidelines for prescribing medications to pediatric patients in emergency situations. By shedding light on the patterns and outcomes of drug-induced dystonia, the research contributes to the ongoing discourse on enhancing pediatric emergency care practices in Southwestern Nigeria and beyond.

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Research Article

IMPROVING THE TREATMENT OF PATHOLOGICALLY ALTERED DENTAL STATUS IN ELDERLY AND SENILE PEOPLE WITH PULMONARY TUBERCULOSIS

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Toshtemirova Mohira Mahmud Qizi
Assistant Of The Department Of Therapeutic Dentistry Of Samarkand State Medical University, Uzbekistan

Yusupov Saytullo Marat Ugli
Student Of The 315th Group Of The Faculty Of Somatology, Samarkand State Medical University, Uzbekistan

ABSTRACT

This article aims to explore innovative strategies and interventions aimed at enhancing the management of pathologically altered dental status in elderly and senile individuals undergoing treatment for pulmonary tuberculosis. By examining emerging research, successful case studies, and evolving treatment modalities, we seek to shed light on promising avenues for improving the overall health outcomes and quality of life for this vulnerable population. By synthesizing insights from diverse perspectives, we aspire to contribute to a more nuanced understanding of this critical healthcare intersection.

KEYWORDS

Improving treatment, dental status, elderly, senile people, pulmonary tuberculosis, comprehensive approach, oral health, systemic diseases, aging populations, challenges.

INTRODUCTION

Improving the treatment of pathologically altered dental status in elderly and senile individuals affected by pulmonary tuberculosis presents a multifaceted challenge at the intersection of oral health and systemic disease management. The convergence of these two complex conditions—oral health

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deterioration and tuberculosis—creates a pressing need for comprehensive approaches that consider the unique vulnerabilities and interdependencies of this demographic. Elderly and senile populations, particularly those grappling with pulmonary tuberculosis, often face exacerbated dental issues. These individuals commonly experience compromised oral health due to a myriad of factors, including age-related degeneration, weakened immune systems, prolonged medication use, and the interplay of tuberculosis with oral health. The intricate relationship between oral health and tuberculosis in the elderly and senile is a relatively understudied area, yet it holds significant importance. The bidirectional influence between these conditions underscores the necessity for tailored interventions that address the dental manifestations of tuberculosis and vice versa.

Moreover, the effects are reciprocal—dental health can impact the course and management of tuberculosis. Poor oral health may serve as a reservoir for pathogenic bacteria, potentially exacerbating the respiratory symptoms of tuberculosis or interfering with treatment outcomes. Conversely, the immunocompromised state resulting from tuberculosis can hinder the body's ability to combat oral infections, leading to a cycle of deteriorating health. Elderly and senile individuals are particularly susceptible to these interconnected challenges. As age advances, oral health tends to decline due to natural wear and tear, chronic conditions, reduced saliva production, and an increased prevalence of systemic diseases. When coupled with tuberculosis, these individuals face compounded health burdens, highlighting the urgency of tailored interventions that address their specific needs. Traditional approaches to dental care often fall short in adequately addressing the unique requirements of this demographic. Conventional dental treatments may not consider the intricate interplay between oral health and tuberculosis or the challenges posed by age-related vulnerabilities. Thus, a paradigm shift is imperative—one that integrates expertise from both dental and pulmonary healthcare domains to devise comprehensive, patient-centric solutions.

Improving the treatment of pathologically altered dental status in elderly and senile people with pulmonary tuberculosis requires a comprehensive approach that addresses the interconnected nature of oral health and systemic diseases. The intersection between dental status and pulmonary tuberculosis in aging populations poses unique challenges that demand specialized attention and innovative strategies. The relationship between oral health and systemic diseases like pulmonary tuberculosis is multifaceted. In elderly and senile individuals, compromised dental status often contributes to the progression and severity of pulmonary tuberculosis. Dental issues such as periodontal disease, tooth decay,

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and oral infections can act as potential reservoirs for bacteria, exacerbating respiratory conditions like tuberculosis. The compromised immune system in aging individuals further amplifies these risks.

Challenges Faced. Elderly and senile individuals with pulmonary tuberculosis often face multiple challenges in accessing adequate dental care. Limited mobility, financial constraints, and a lack of awareness about the interrelation between oral health and systemic diseases contribute to the neglect of dental issues in this demographic. Furthermore, conventional treatments may not always be suitable for these individuals due to their age-related health concerns and frailty.

Holistic Approach to Treatment. Addressing the dental status of elderly and senile individuals with pulmonary tuberculosis necessitates a holistic treatment approach. This approach involves collaboration between dental professionals, pulmonologists, geriatricians, and other healthcare providers to tailor treatments that are both effective and considerate of the patients' overall health status.

1. Integrated Care Protocols. Developing integrated care protocols that encompass both pulmonary and dental health is crucial. This involves establishing communication channels between healthcare providers to ensure a comprehensive understanding of the patient's health needs. Coordinated efforts can lead to timely interventions, reducing the risk of oral health complications worsening tuberculosis and vice versa.

2. Specialized Dental Interventions. Customizing dental interventions for elderly individuals with pulmonary tuberculosis is essential. This may involve utilizing minimally invasive dental procedures, such as laser treatments or microsurgery, to address dental issues without adding undue stress on the patient's health. Additionally, education about proper oral hygiene practices tailored to the limitations of elderly individuals can significantly impact their oral health.

3. Accessible and Affordable Care. Ensuring accessibility and affordability of dental care for this demographic is pivotal. Mobile dental units, home-based care services, and outreach programs can bridge the gap in accessing dental treatments for elderly and senile individuals with pulmonary tuberculosis, especially those with limited mobility or residing in remote areas.

Innovations in Treatment. Advancements in technology offer promising solutions for improving the treatment of pathologically altered dental status in this vulnerable demographic. Innovations such as telehealth consultations, where dental professionals can remotely assess and guide treatments, can revolutionize access to care. Moreover, the integration of artificial intelligence (AI) in diagnostics can aid in

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early identification of oral health issues, enabling timely interventions. Community engagement plays a pivotal role in improving oral health awareness among the elderly and senile populations with pulmonary tuberculosis. Educational programs conducted in collaboration with community centers, senior living facilities, and healthcare organizations can empower individuals with knowledge about the importance of oral health in managing systemic diseases like tuberculosis.

CONCLUSION

In conclusion, enhancing the treatment of pathologically altered dental status in elderly and senile individuals with pulmonary tuberculosis demands a concerted effort from healthcare professionals, policymakers, and the community at large. By adopting a holistic approach that integrates dental care into the comprehensive management of pulmonary tuberculosis in aging populations, we can mitigate the impact of dental issues on the progression of this respiratory disease. Innovations in treatment, accessibility, and education are crucial pillars in this endeavor, aiming not only to improve oral health but also to enhance the overall well-being of these vulnerable individuals.

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Research Article

PHARMACOTHERAPY: MEDICINES USED FOR DISEASES

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Rakhmonova Bakhora Kakhorovna
Samarkand State Medical University, Uzbekistan

Sodikova Shoira Amriddinovna
Samarkand State Medical University, Uzbekistan

Marupova Madina Khikmatullayevna
Samarkand State Medical University, Uzbekistan

Agayeva Gulalek Chashem Girl
Samarkand State Medical University, Uzbekistan

ABSTRACT

Pharmacotherapy, the use of medications to treat diseases, has been an integral part of modern medicine, significantly improving patient outcomes and quality of life. From antibiotics to antivirals, analgesics to antihypertensives, the spectrum of pharmaceutical agents available for managing diseases is vast and continually expanding. This article aims to provide an in-depth exploration of pharmacotherapy across various disease categories, highlighting key medications used, their mechanisms of action, and their role in disease management.

KEYWORDS

antibiotics, antivirals, antifungals, infectious diseases, hypertension medications, diabetes medications, cholesterol-lowering agents, neurological disorders, antidepressants, antiepileptic drugs.

INTRODUCTION

In the vast landscape of medical science, pharmacotherapy stands as a cornerstone, offering a myriad of remedies to combat diseases and restore health. This branch of medicine revolves around the

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use of pharmaceutical drugs, medications, and other chemical compounds to treat a broad spectrum of illnesses, disorders, and conditions. From common ailments to complex diseases, pharmacotherapy plays a pivotal role in alleviating symptoms, managing chronic conditions, and even curing certain illnesses. The fundamental essence of pharmacotherapy lies in its ability to target specific disease pathways or symptoms, aiming to either cure the ailment entirely or provide relief and manage symptoms effectively. It's a dynamic field constantly evolving with scientific advancements and technological innovations, resulting in an ever-expanding repertoire of medications catering to diverse health needs.

One of the primary objectives of pharmacotherapy is to understand the underlying mechanisms of diseases and design medications that can selectively intervene, either by modifying biological processes, inhibiting pathogens, or restoring normal physiological functions. This tailored approach ensures that the treatment is not only effective but also minimizes adverse effects on the body's healthy tissues and functions. The spectrum of medicines used in pharmacotherapy is broad, encompassing various categories and classes tailored to address specific conditions. Antibiotics, for instance, combat bacterial infections, while antivirals target viruses. Painkillers and anti-inflammatory drugs provide relief from discomfort and reduce inflammation. Psychotropic medications aid in managing mental health conditions, while cardiovascular drugs regulate heart-related issues. The diversity of medications highlights the versatility of pharmacotherapy in addressing multifaceted health concerns.

The development of medications involves rigorous research, encompassing preclinical studies, clinical trials, and stringent regulatory evaluations to ensure safety, efficacy, and quality. Advancements in pharmaceutical sciences have led to innovative drug formulations, targeted drug delivery systems, and personalized medicine approaches, where treatments are customized based on individual genetic makeup, further optimizing therapeutic outcomes. However, the efficacy of pharmacotherapy isn't solely reliant on drug development. Factors such as adherence to prescribed regimens, proper dosage, and patient education play pivotal roles in ensuring the success of treatments. A holistic approach involving healthcare professionals, patients, and caregivers is essential to maximize the benefits of pharmacotherapy and minimize the risks associated with medication use.

Moreover, the landscape of pharmacotherapy is not static; it is constantly evolving with ongoing research and discoveries. New molecules, therapeutic targets, and innovative treatment modalities continue to emerge, promising advancements that may revolutionize the way we approach and treat various diseases. In this article, we delve deeper into the realm

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of pharmacotherapy, exploring the diverse classes of medications used for different diseases. From understanding the mechanisms of action to highlighting their applications and potential side effects, we aim to provide insights into the intricate world of pharmaceutical interventions that shape modern healthcare. By comprehending the nuances of pharmacotherapy, individuals can gain a better understanding of how medications work, make informed decisions about their health, and actively participate in their treatment plans. Ultimately, the goal remains clear: leveraging the power of pharmacotherapy to enhance health, alleviate suffering, and improve the quality of life for millions around the globe.

Infectious Diseases.

Antibiotics: Antibiotics revolutionized medicine by combating bacterial infections. Penicillin, the first antibiotic discovered by Alexander Fleming in 1928, paved the way for various classes of antibiotics such as cephalosporins, macrolides, and fluoroquinolones. These medications target specific bacterial components, disrupting their growth or killing them outright.

Antivirals: Antiviral drugs like acyclovir, oseltamivir, and remdesivir are crucial in managing viral infections. They work by interfering with viral replication, thereby slowing down the progression of infections caused by viruses like herpes, influenza, or even SARS-CoV-2.

Antifungals: For fungal infections, medications like fluconazole or amphotericin B are commonly prescribed. They target fungal cell walls or interfere with their replication to eliminate the infection.

Chronic Diseases.

Hypertension Medications: Antihypertensive drugs like ACE inhibitors (e.g., lisinopril), beta-blockers (e.g., metoprolol), or calcium channel blockers (e.g., amlodipine) help manage high blood pressure. They work by relaxing blood vessels, reducing the workload on the heart, and controlling blood pressure levels.

Diabetes Medications: In diabetes management, medications vary from insulin injections to oral hypoglycemic agents like metformin or sulfonylureas. These drugs regulate blood sugar levels by increasing insulin sensitivity or stimulating insulin production.

Cholesterol-Lowering Agents: Statins such as atorvastatin or simvastatin are commonly used to lower cholesterol levels. They inhibit an enzyme involved in cholesterol synthesis, thus reducing the risk of cardiovascular diseases.

Neurological Disorders.

Antidepressants: Antidepressants like selective serotonin reuptake inhibitors (SSRIs) or tricyclic

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antidepressants are prescribed to manage depression and other mood disorders. They regulate neurotransmitters in the brain to improve mood.

Antiepileptic Drugs: For epilepsy, antiepileptic drugs like phenytoin or carbamazepine are used to control seizures by stabilizing abnormal electrical activity in the brain.

Analgesics: Pain management involves a range of medications, from nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen to opioid analgesics like morphine. These drugs alleviate pain by blocking pain signals or reducing inflammation.

Cancer Treatment.

Chemotherapy: Chemotherapy drugs like cisplatin, paclitaxel, or doxorubicin are used to kill cancer cells or stop their growth. They work by targeting rapidly dividing cells, which is a hallmark of cancer cells.

Targeted Therapies: Targeted therapies like monoclonal antibodies or tyrosine kinase inhibitors aim at specific molecules involved in cancer growth. They are designed to interfere with specific pathways that drive cancer progression.

Autoimmune Disorders.

Immunosuppressants: In autoimmune diseases like rheumatoid arthritis or lupus, immunosuppressants such as methotrexate or corticosteroids are used to dampen the immune system's response, reducing inflammation and tissue damage.

Bronchodilators: For asthma or chronic obstructive pulmonary disease (COPD), bronchodilators like albuterol or salmeterol are used to relax airway muscles, making breathing easier.

Steroids: In severe cases, corticosteroids like prednisone may be prescribed to reduce inflammation in the airways.

Proton Pump Inhibitors (PPIs): PPIs like omeprazole or pantoprazole are used to treat conditions like gastroesophageal reflux disease (GERD) or peptic ulcers by reducing stomach acid production.

Antiemetics: To manage nausea and vomiting, especially in chemotherapy patients, antiemetic drugs like ondansetron or metoclopramide are administered.

CONCLUSION

Pharmacotherapy stands as a cornerstone in modern healthcare, offering a diverse array of medications tailored to specific diseases and patient needs. However, with this vast array of drugs comes the importance of judicious prescribing, considering factors such as individual patient characteristics, potential side effects, and drug interactions. Advances in pharmaceutical research continue to drive the development of new medications, providing hope for more effective treatments and better outcomes for

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patients across a wide spectrum of diseases. Pharmacotherapy serves a vital role in healthcare by addressing numerous medical conditions, ranging from acute infections to chronic diseases. Its primary objectives encompass symptom relief, disease management, and even disease prevention. Pharmacotherapy stands as a cornerstone in the treatment of various diseases, employing medicines and pharmaceuticals to manage, alleviate, or cure illnesses. This dynamic field encompasses a wide array of drugs designed to target specific ailments, offering relief and often promoting recovery.

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Research Article

THE TOXIC EFFECT PESTICIDES THROUGH MATERNAL ORGANISM POSTNATAL GENERATION IN THE THYROID GLANDS

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Islomova Shokhista Abdikhalilovna
Tashkent medical academy, Uzbekistan

Xusainova Husnobod Jo'rayevna
Tashkent medical academy, Uzbekistan

Olimjonova Go'zal Olimjonovna
Tashkent medical academy, Uzbekistan

ABSTRACT

The thyroid gland of posterity, got from full-grown with chronic intoxication by pesticides vigor and titanium, have been studied on 1-90 day after birth using electron microscopy methods. It is revealed that intoxication of the maternal organism vastly slows the rates of postnatal formation of secretory follicles. It is expected that discovered ultrastructural changes of the thyrocytes are the morphological substratum of the dysfunctions of the thyroid gland.

KEYWORDS

Thyroid of posterity, pesticides, chronic intoxication.

INTRODUCTION

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The use of pesticides is typical for modern agricultural production in all economically developed countries. because without their production and applications agriculture carries huge losses. Of the allowed more than half of the use of pesticides in the republic belongs to the groups pyrethroid and pyrazole drugs. Despite the relatively low toxicity of these compounds, the probability of their negative impact on the nervous, endocrine and immune systems remains very high. In this regard, pesticides pose the greatest danger for pregnant women and their offspring due to the high sensitivity of the developing nervous, endocrine and immune systems of the fetus and newborn to toxic effects. Shown, that the introduction of even small doses of pesticides into the body of pregnant and breastfeeding women females adversely affect the condition the thyroid gland of their offspring [3,4,5]. Exposure to low doses of pesticides can negatively affect the morbidity of the population in general, and especially on indicators of health of women and children [6]. In this regard, it is currently very the problem of studying more subtle mechanisms of toxic action is urgent pesticides, search for means and methods identification of preclinical negative changes in the body of people or their offspring, occurring under the influence of small doses of pesticides. The results of these studies will undoubtedly contribute to the disclosure of the mechanisms of toxic the action of pesticides and allow the development of secondary prevention measures and pathogenetic therapy of toxic effects. In addition, they can serve the basis for revising the hygienic regulations of pesticides.

Purpose of work.

Revealing the structural and functional mechanisms of the toxic effect of pesticides lambda-qi halotrin (LST) and fipronil (FPN) on the thyroid and thymus glands of the offspring under the conditions of their influence through the mother's body.

METHOD

For In the experiments, an insecticide titanium was used, registered in the republic by the Uzbek-German LLC “Euro Team”. Titanium active substance is LST.

Another drug registered in our Republic in as an effective insecticide, is vigor, an active ingredient which is the FPN. Physicochemical and toxicological characteristics vigor and titanium are described in sufficient detail in our publications [1, 2].

Experiments were carried out on whites adult virgin female rats Wistar rats weighing 150-170 g, and sexually mature male rats were used only for fertilization. Then female rats were divided into three groups of 45 rats in each. The first (experiment 1) group of rats was injected through the mouth using a probe LCT at the rate of 8 mg / kg / daily. The second (control) group received in the same way. The second (experiment 2) group of rats FPN was introduced in a similar way from calculation 3.6 mg / kg / daily, which

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corresponded to 1/100 of the drug LD50. The third group of rats that received one the same volume of sterile physiological solution served as a control. Administration of both pesticides to experimental groups rats were carried out daily for 75 days until the end of experiments. On the 31st day of experiments, females of all groups mated with males for fertilization. The onset of pregnancy was monitored by the presence of sperm during vaginal smears. After the onset during pregnancy, the females are separated from the males and placed in separate cages for further research. Offspring from all groups of animals were euthanized on 7, 14, 21 and 30 days after birth, under light anesthesia with ether. After sacrifice, the blood serum was determined concentration of thyroxine (T4), triiodothyronine (T3) and thyrotropic hormone (TTH) by enzyme immunoassay using special kits the company "Human" (Germany) and the spectrophotometer "Singl" (Germany). Thyroid gland (Thyroid gland) and thymus gland (thymus, Tm) was studied using morphometric, immunohistochemical, and electron microscopic methods. All digital data are statistically processed using a package of computer of programs, differences satisfying P <0.05 were considered significant.

RESULT

Maternal exposure to pesticides significantly reduced the rate of growth and formation of thyroid gland in the offspring. There was a significant decrease in the mean area of thyroid sections compared with the corresponding age of the control group, which indicated a decrease in the volume of the organ as a whole Average the total area of follicles of all classes, and, accordingly, the number and height of thyrocytes in them were significantly lower than the control. A pronounced lag in the rates of neoplasm and follicle formation was revealed in the experimental groups. animals. A decrease in the size of mitochondria, as well as the components of the endoplasmic reticulum and the Golgi complex of thyrocytes, was found.Morphological the data fully corresponded to the indicators of hormones, indicating a significant decrease in concentration T4 and T3 ... The TSH level is moderate. decreased, indicating a violation

thyrotropic function of the pituitary gland. Along with with these, certain disorders of postnatal growth and development of microenvironmental cells Tm of offspring Starting from the moment of birth, a tendency towards a decrease in the number of epithelio-reticular cells (ERC) per unit area

lobules. Moreover, the average number of ERK decreased more clearly in the cortical the thymus zone. Electron microscopy in the ERC of experimental animals revealed hypoplasia of the endoplasmic reticulum and the Golgi complex, as well as the heterogeneity of secretory vacuoles, indicating a violation of the secretory activity of cells All this testified about slowing down the formation process

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cellular microenvironment in the thymus and violation of the secretory function of the ERK, which contributed to the disruption of regulatory thymus activity.

CONCLUSIONS

Chronic intoxication of the body mothers with pesticides leads to a significant slowdown in the rates of postnatal growth and formation of thyroid secretory follicles in the offspring. Ultrastructural changes in the form disorganization of the granular endoplasmic reticulum and destruction of other cytoplasmic organelles of thyrocytes represent a morphological substrate dysfunction of the thyroid gland arising in the postnatal ontogenesis of the organ under conditions of chronic intoxication.

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Research Article

DERMOSCOPY IN FEMALE ANDROGENETIC ALOPECIA

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Tashmatova N.B.
Research Institute Of Military Medicine Of The Military Medical Academy Of The Armed Forces Of The Republic Of Uzbekistan

ABSTRACT

We present 3 patients with hair thinning that is pronounced on the top of the head (Fig.1 a,b,c). Thinning of the vertex region is characteristic of female-type androgenetic alopecia but is not diagnostic. Trichoscopy (dermoscopy of hair and scalp) can provide important differential diagnostic information.

KEYWORDS

Trichoscopy, female-type androgenetic alopecia, Alopecia.

INTRODUCTION

Case #1

The 60-year-old patient clinically showed a pronounced oval-shaped hair thinning in the area of the head with a gap in the front hairline (Fig. 1a). The scalp, which was clearly visible in this area, had an atrophic shiny appearance with discrete perifollicular redness around individual remaining hair shafts. In addition to the loss of follicle openings, erythema with perifollicular emphasis around residual hairs (Fig. 2a, white arrow) and whitish areas (Fig. 2a, black arrow) were visible in this area under reflected light microscopy.

Case #2

Clinically, the 29-year-old patient presented with an oval, moderately pronounced hair thinning in the area of the vertex and the adjacent scalp (Fig. 1b). In the dermoscopic examination of the affected area, a clear variability in the thickness of the hair shaft (Fig. 2b, white arrows) and the predominance of follicular ostia

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with only one emerging hair shaft (Fig. 2b, arrowheads) were visible as a correlate for the clinically visible hair thinning.

Case #3

The 26-year-old patient clinically showed diffuse hair thinning with the greatest severity in the vertex area, whereby the scalp was visible. Clinically, this showed numerous follicular openings that appeared prominent due to dilatation and occasionally had a comedo-like appearance.

Dermoscopically, in addition to the rarefaction of the hair shafts, short hairs, some of which tapered proximally and had blunt ends (Fig. 2c, "exclamation point hair", black arrows), were also visible. Numerous follicular openings of both hairless and hair-bearing follicles were dilated and filled with a yellowish material (Fig. 2c, "yellow dots", white arrows).

DISCUSSION

Hair loss can be clinically diffuse, focal or in a so-called pattern "Hair loss in a pattern" is typically found in androgenetic alopecia. Women most often show an oval or triangular thinning of the vertex area with a preserved frontal hairline (Ludwig and Olsen type); a male pattern of loss is observed in individual cases (Hamilton type) [1].

Rarely, other hair diseases can mimic the picture of androgenetic alopecia, especially alopecia areata and lichen planopilaris [2].

Case 1

Our first patient (Case 1; Figs. 1a and 2a) showed a pattern of hair loss compatible with advanced androgenetic alopecia of the Ludwig type, but the changes in the scalp were already clinically suspicious for a scarring process. The loss of follicle openings and the presence of whitish fibrosed areas in reflected light microscopy confirmed this suspicion. The perifollicular erythema in the area of residual hair was suggestive of lichen planopilaris (Table 1). The suspected diagnosis was also confirmed histologically.

The so-called "fibrosing alopecia in a pattern distribution" represents a clinical variant of lichen planopilaris that occurs in areas typical of androgenetic alopecia.

Dermoscopic examination of the scalp is of great importance for differentiating scarring and non-scarring alopecias. The simultaneous loss of hair and follicle openings is the main feature of primary cicatricial alopecia. Further reflected light microscopic findings help to differentiate the subentities; the perifollicular emphasis of erythema, fibrosis and scaling with a sometimes ruff-like appearance is typical of lichen planopilaris [3]. However, because of the common underlying inflammatory fibrosing process,

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scarring alopecias may show overlapping reflected light microscopic criteria.

Diagnosis case 1: Lichen planopilaris ("fibrosing alopecia in a pattern distribution")

With regard to therapeutic consequences, biopsy confirmation of the diagnosis is recommended.

Case 2

In our second patient (case 2; Figs. 1b and 2b) there was clinically hair thinning similar to the beginning of androgenetic alopecia of the Ludwig type. The increase in thin hairs and the decrease in follicular ostia with 2 or 3 hair shafts emerging together, which could be detected under reflected light microscopy, reflected a progressive miniaturization of the hair follicles in this area and confirmed the suspected clinical diagnosis of androgenetic alopecia (Table 1). Through the morphological assessment of hair and scalp, trichoscopy enables differentiated conclusions to be drawn about the pathogenesis of hair loss diseases and thus facilitates differential diagnostic considerations.

Fig.1a,b,c Three patients with hair thinning on the top of the head as in female-type androgenetic alopecia.

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Fig.2 Dermoscopic images of the patients shown in Fig. 1.a - loss of follicular openings with the presence of whitish fibrosed areas (black arrow) and characteristic perifollicular erythema (white arrow). b - variability of the hair shaft thickness due to the presence of normal terminal hairs, intermediate and thin hairs (white arrows) as well as an increase in vellus hairs and follicular ostia with the emergence of individual hairs (arrowheads). c - short hair, partly tapering towards the scalp, with blunt ends (black arrows, "exclamation point hair") and clearly visible follicular ostia filled with yellowish material (white arrows, "yellow dots")

Hair changes in androgenetic alopecia are caused by the genetically varying degrees of sensitivity of individual follicles to androgens [4]. Under the influence of hormones, the affected hair follicles shrink or even lose. Depending on the hormone status and metabolism of sex hormones in hair and skin, affected different areas of the scalp. The occipital region usually shows little or no changes.

Diagnosis Case 2: Androgenetic alopecia (Ludwig type)

The topographically varying severity of dermoscopic changes of central diagnostic importance and enables the recognition of early forms without a clinically pronounced pattern of failure.

The examination using a hand dermatoscope is a method for diagnosing androgenetic alopecia that is at least equivalent to the trichogram and is also time-saving and painless. Most videodermatoscopes use special computer programs to carry out a digital trichogram, which, in addition to determining the anagen/telogen ratio, also allows the vellus/terminal hair ratio as well as the hair density and thickness to be measured. The possibility of digital storage is of great advantage for monitoring progress and objectively evaluating the success of therapy.

Table 1. Characteristic reflected light microscopic findings of the patients shown

Fall 1: Lichen planopilaris	Fall 2: Androgenetic alopecia	Fall 3: Alopecia areata incognita
Loss of follicle openings	Variability of hair shaft thickness (increase in thin and vellus hairs)	Dystrophic hair shafts: short hairs that partly taper proximally and have blunt ends

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Perifollicular erythema	Increase in follicular ostia with only one emerging hair shaft	Numerous "yellow dots"
Whitish areas		
*in androgen-dependent areas		

Case 3

The patient clinically showed an emphasis on the vertex region that is characteristic of androgenetic alopecia of the female type. The severe degree of hair loss was mainly as unusual given the patient's age, as were the dilated follicle openings in the severely affected area. The presence of numerous "yellow dots" and characteristic dystrophic hair shafts in reflected light microscopy led us to the diagnosis of alopecia areata incognita (Table 1).

Diagnosis Case 3: Alopecia areata incognita (Alopecia areata diffusa)

Clinically, alopecia areata incognita often shows a hair loss pattern similar to androgenetic alopecia. In the case of hair loss caused by inflammation, disease activity can often be determined using a reflected light microscope. Alopecia areata shows a disorder of hair growth in active stages due to the inflammatory infiltration of the bulb region. There are typically broken hairs, hairs that taper towards the scalp and so-called hairs that are cadaverized at the scalp level ("black dots") [5]. The accumulation of unpigmented hair residues and sebum leads to dilatation and yellowish coloration of follicle openings. The appearance of short, regrowing hair can be seen as a prognostically favorable sign.

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Research Article

FACTORS AFFEKTING THE DEVELOPMENT OF COGNITIVE FYNCTION IN PERSONS WHO SURVIVED COVID-19

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Gafurov Bakhtiyor Gafurovich
Development Of Professional Qualification Of Their Medical Workers Of The Ministry Of Health Of The Republic Of Uzbekistan

Mamadjonova Tursunoy Toxir Qizi
Researcher, Development Of Professional Qualification Of Their Medical Workers Of The Ministry Of Health Of The Republic Of Uzbekistan

ABSTRACT

The COVID-19 pandemic has shown that this is a disease that affects almost all organs and systems. At the same time, the problem of damage to the nervous system that leads to serious consequences in the form of various vascular inflammation and degenerative pathologies (stroke, encephalitis, polyneuropathy) of the brain and peripheral nerves are increasing. The question of the origin of cognitive impairment at a young age in people who did not have any problems with intellectual functions before COVID-19 is more complicated. This issue is closely related to the issue of the pathogenesis of damage to the nervous system in COVID-19. At the same time, the cognitive function of a person also closely depends on the emotional state, educational qualification, gender and age. These factors are not well covered in the literature. With this in mind, we conducted this study.

KEYWORDS

Cognitive impairment, anxiety-depressive devices, COVID-19, MMSE, MoCa.

INTRODUCTION

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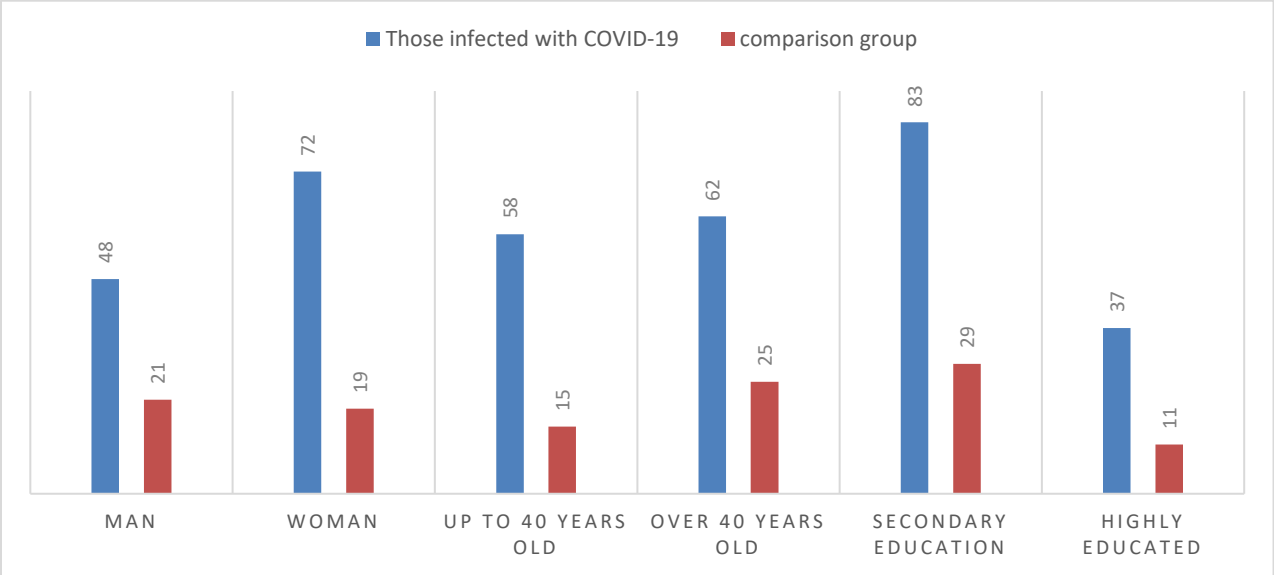
Material and methods of investigation: The material for the study was 120 patients from COVID-19 and 40 people of the same age as the control group. The group of patients infected with COVID-19 is those who have been discharged from the hospital after the main clinical symptoms of the disease and a negative PCR test. the distribution of sex, age and education levels of patients is presented in the table.

All patients underwent a clinical and neurological examination, a detailed history was taken. MMSE test (Mini-Mental State Examination) and Montreal Cognitive Assessment MoCA



(Montreal Cognitive Assessment) were used to assess the level of cognitive impairment. The studies were conducted in a private room in a confidential and quiet environment. The MMSE test was evaluated according to the following criteria: a total score of 30. Evaluation criteria: 27–25 - moderate cognitive impairment, 24 or less - severe cognitive impairment. The Montreal Cognitive Scale (MoCA) is widely used as a screening tool for cognitive impairment, the questionnaire is a one-page test with 30 items that takes an average of 10 minutes to complete.

To assess anxiety, we use Yu.L. Khanina (1976). An important advantage of this scale is the ability to distinguish two types of anxiety - anxiety as a personality trait (constitutional, personal anxiety) and anxiety as a temporary clinical condition (reactive anxiety). Interpretation of results: the final score is up to 30 points. - low anxiety; 31-45 - moderate anxiety; 46 and more - high anxiety.

Results and Discussion: Clinical and neurological examination revealed significant differences between healthy and post-COVID-19 patient groups.

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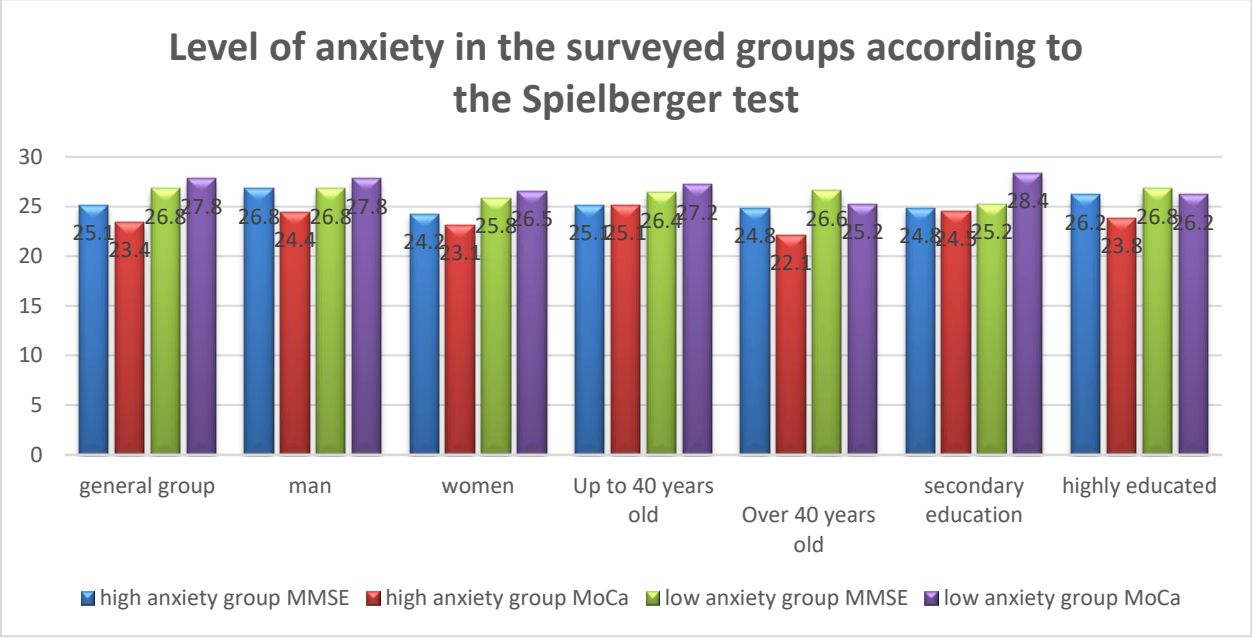
Among the complaints of patients in the main group, psychoemotional disorders prevailed, 116 patients (97%) had symptoms of asthenia in the form of weakness and reduced work capacity, 110 patients (92%) had fatigue, 95 patients complained of headaches (79%), dizziness - 80 patients (67%), nocturnal sleep disorder in 96 patients (80%), tinnitus in 72 patients, excessive irritability and nervousness in behavior in 60% of patients 78 (65%), isolation - 24 patients who passed through COVID-19 (20%).

It should be noted that all patients of the main group complained of memory loss. Analysis of focal neurological symptoms showed that: 54 (45%) of the examined patients had central paresis of the VII pair of cranial nerves, central paresis of the XII pair of cranial nerves, respectively, in 30 (25%).

Reflexes of oral automatism occurred in 12 (10%) patients, respectively, anisoreflexia in 68 (57%) patients, instability in the Romberg position in 54 (45%) patients, and intention during finger-nose examination in 34 patients.

Subjective and objective neurological disorders were minimally expressed in the control group. Considering the increased anxiety effect after suffering from COVID-19, we first analyzed the structure of anxiety disorders in the examined groups (Figure 2).



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The data presented in the figure show that both reactive and personal anxiety are significantly prevalent in people with COVID-19. At the same time, significant differences were found in men only in RT, and in women in both indicators of anxiety.

Analysis by age revealed a significant prevalence of anxiety in the older subgroup. Reliably, compared to the control group, anxiety was more prevalent in the subgroup of highly educated individuals. Comparisons between identified subgroups showed that RT and LT were significantly superior in women in the main and control groups.

A significant increase in the level of LT was found in the subgroup of older patients compared to younger patients. The RT rate was significantly higher in the group of patients in the older age subgroup.

To study the relationship between cognitive impairment and anxiety, we divided the patients with Covid into two groups: high anxiety and low anxiety.

The results showed that cognitive impairment was significantly more pronounced in high anxiety patients compared to low anxiety patients. Women in the MMSE and MOCA high anxiety group had more clear cognitive impairment than men.

In addition, cognitive impairment in the subgroup of patients with high anxiety over the age of 40 was significantly greater than in younger patients with low anxiety.

At the same time, it should be noted that the level of cognitive impairment in patients with different levels of education was almost the same, and the main differences were only related to the level of anxiety.

Conclusion: Thus, the study of cognitive status and psycho-emotional status using clinical scales showed that cognitive deficits are characteristic of patients who have passed through COVID-19, are not related to the level of education, and worsen cognitive dysfunction in existing patients. cognitive disorders, disorders that require mandatory correction in the early stages of recovery.

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Research Article

COMPENSATORY AND ADAPTIVE FEATURES OF THE FETOPLACENTAL SYSTEM IN PRETERM LABOR

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Mavlyanova Shakhnoza Alijanovna
Shu Department Of Master, Uzbekistan

Nasirova Feruza Jumabaevna
Asmi 1 - Associate Professor Of Department Of Obstetrics And Gynecology Uzbekistan

ABSTRACT

Premature birth remains a serious problem in obstetrics and gynecology, having a significant impact on the health of newborns and mothers. One of the key factors contributing to premature birth is the insufficiency of the fetoplacental system. In this study, we will focus on the compensatory and adaptive features of the fetoplacental system in preterm labor, in order to understand the mechanisms underlying this condition.

KEYWORDS

Compensatory and adaptive features, fetoplacental system, premature birth, adaptation, hemodynamics of the placenta, newborns, anatomical and physiological changes, intrauterine life, risk of complications, influence of premature birth.

INTRODUCTION

Premature birth remains one of the significant problems in the field of obstetrics and perinatology, posing a challenge both for medical professionals and for the future health of the fetus. According to world data, the incident of premature birth accounts for about 10% of all pregnancies, and despite efforts in the

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field of medicine, the rate of premature birth remains consistently high. The fetoplacental system plays a key role in the maintenance and development of the fetus throughout pregnancy. Her condition and compensatory mechanisms during premature birth are of deep interest for understanding the mechanisms of adaptation of the fetus to adverse developmental conditions.

The fetoplacental system is a complex network of interaction between the fetus and the placenta, providing nutrition, gas exchange and elimination of metabolic waste. Its functioning is an integral factor in maintaining the normal development of the fetus. However, in case of premature birth, this complex mechanism can be significantly disrupted, which requires more in-depth research. One of the key aspects of our study is the analysis of the compensatory and adaptive mechanisms of the fetoplacental system in preterm labor. Preliminary data indicate the activation of various adaptive mechanisms in the fetus aimed at preserving its viability in a premature extrauterine environment. Studies show that during premature birth, the fetus activates energy conservation mechanisms, changes its metabolic activity and adapts gas exchange systems to optimize its survival. These compensatory mechanisms require additional study in order to better understand their effect on fetal health in the long term.

Our research focuses on identifying adaptive mechanisms of the fetoplacental system that attempt to compensate for the adverse conditions of premature birth. One of the main aspects of our attention is the change in the morphological characteristics of the placenta during various periods of premature birth. We consider changes in the surface area of the villi, the thickness of the basement membrane and the number of capillaries as indicators of adaptive processes in the fetoplacental system. An important area of our research is the analysis of the functional activity of the fetoplacental system in preterm labor. We investigate changes in the regulation of blood flow, the exchange of gases and nutrients between maternal and fetal organisms. The assessment of hormonal background and cytokine levels in the mother-fetus system is also included in our analysis to identify possible molecular markers of adaptation.

1. Anatomical and physiological aspects of the fetoplacental system in preterm labor. The fetoplacental system is a complex anatomical and physiological complex that ensures the exchange between maternal and fetal circulation. In case of premature birth, the adaptation processes of the fetoplacental system are activated to minimize the negative consequences of the preliminary termination of pregnancy. One of the important points is adaptation to the early onset of fetal lung function. The

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pulmonary system, which had not previously played a key role, is activated to prepare for independent breathing. At the same time, the adaptation of the fetoplacental system includes changes in the vascular system of the placenta, aimed at maintaining optimal blood supply to fetal organs and tissues in conditions of premature termination of pregnancy.

2. Changes in the hemodynamics of the placenta and fetal vessels. One of the main compensatory mechanisms is an increase in placental blood supply and redistribution of blood flow in fetal vessels. Accelerated formation of the placental vascular network and its hyperplasia contribute to a more efficient transfer of oxygen and nutrients from the mother to the fetus. In the case of premature birth, these changes occur at earlier stages of pregnancy than during its normal course. An increase in the diameter of the arteries and veins of the placenta, as well as a change in the structure of the villi of their chorionic layer, are aimed at ensuring maximum blood flow to the fetus and minimizing the risk of hypoxia.

3. Adaptation to changes in the environment. The fetoplacental system also activates mechanisms of adaptation to the external environment during premature birth. This includes accelerated maturation of the placental endocrine system, which regulates the hormonal background of the mother and fetus. Increasing the secretion of hormones such as catecholamines and corticosteroids is aimed at maintaining homeostasis and ensuring fetal survival in preterm labor. In addition, studies show that during premature birth, inflammatory processes in the fetoplacental system can be activated. This inflammatory response may be part of a protective mechanism aimed at preventing infections and maintaining homeostasis in conditions of insufficient readiness of the body for birth.

4. The effect of premature birth on the condition of newborns. Compensatory and adaptive mechanisms of the fetoplacental system, activated during premature birth, have a direct effect on the condition of newborns. Early activation of the fetal pulmonary system causes adaptation to the conditions of extrauterine life. However, despite these compensatory mechanisms, newborns born prematurely are often susceptible to a number of complications. Premature newborns have an increased risk of a number of medical problems, including lung distress syndrome, thermoregulation disorders, and problems with the cardiovascular system. This is due to the fact that despite compensatory mechanisms, adaptation to external conditions is not always fully completed before the moment of premature birth.

CONCLUSION

Premature birth remains one of the most serious problems of obstetrics and perinatology, having a significant impact on newborn health and long-term

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development. One of the key aspects of this problem is the compensatory and adaptive response of the fetoplacental system to the conditions of the fetus's preliminary exit from the maternal body. In this article, we will discuss the compensatory and adaptive mechanisms activated by the fetoplacental system during premature birth, as well as their impact on the health of newborns. Premature birth is a serious problem for the fetoplacental system and the health of newborns. However, the activation of compensatory and adaptive mechanisms of the fetoplacental system at the preliminary end of pregnancy indicates the importance of early adaptation to new living conditions. Further research in this area will allow us to better understand the mechanisms of compensation of the fetoplacental system and develop more effective strategies for improving and maintaining the health of prematurely born children. Conclusion The study of compensatory and adaptive features of the fetoplacental system in preterm labor is important for understanding the pathological mechanisms and developing new approaches to the prevention and treatment of this serious condition. A deep understanding of the adaptive mechanisms of the fetoplacental system in preterm birth may contribute to the development of new therapeutic strategies to reduce risks and improve pregnancy outcomes.

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