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ФІЗІОЛОГІЯ МЕДИЦИНІ, ФАРМАЦІЇ ТА ПЕДАГОГІЦІ: «АКТУАЛЬНІ ПРОБЛЕМИ ТА СУЧАСНІ ДОСЯГНЕННЯ»

Тези доповідей
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ОГЛАВЛЕНИЕ

Considerable amount of theoretical material which medical students have to learn during first 3 years of studying already at the second year becomes an informational stress factor for a human organism. Strain of extero- and interoceptive sensor systems integration process occurs, influencing the effectiveness of decisions made by the brain and increasing the "adaptation price" in response to stimulus.

Thereby, the aim of the research was to study the dynamics of medical students' motor perception during the formation of adjustments and adaptive reactions in conditions of prolonged exposure to informational stress stimulus.

48 second year students of medical university, who had signed their voluntary agreement, took part in the research. Differential motor perception was measured using a protractor and by comparing time and fidelity of motions production. The adequate afferent synthesis ability was evaluated by sensomotor reaction (SMR) to sound. In order to specify the physical ability and to determine the vegetative reactivity and autonomic supply of organism's activity Kérdo`s and Hildebrand`s indexes were calculated.

In the beginning of research, the students were split into 3 groups according to their physical ability: non-sportsmen with low physical ability (1st group) - 17.4% of the students; non-sportsmen with medium physical ability (2nd group) - 69.3%; and 3rd group consisted of sportsmen with a moderate training schedule - 13.3%. During the academic year they had to undergo 3 cycles of research of motor perception, SMR to sound and vegetative reactivity with functional clino- and orthostatic tests. The results have shown that students in the 2nd group had the most accurate evaluation of spatial displacement, with estimated percentage error of kinesthetic perception task performing ±18.9% and of proprioceptive perception ±7.4%. Students of the 1st group showed an increase of error percentage by 21.3% in kinesthetic and by 11.8% in proprioceptive perception. 3rd group students also demonstrated a more accurate perception and self-evaluation of reproduced parameters of motor perception. In this group the results of SMR to sound were significantly higher then in the other groups.

The research has shown that human's ability to differentiate efforts and directions of motions can be improved by moderate physical exercise, which thus helps to reduce the "adaptation price" in response to informational stressor.

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CARDIOPULMONARY RESUSCITATION

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Aim: The cardiopulmonary resuscitation **(**CPR) emergency procedure functions is to firstly manually try to pump the patient's blood into their heart, and secondly to pass oxygen into the patient's lungs and blood and to keep blood circulation going and to keep the brain and heart supplied with oxygenated blood. By doing this the patient is saved from permanent brain damage.

Summary: Cardiopulmonary resuscitation (CPR) is a lifesaving technique useful in many emergencies, including heart attack or near drowning, in which someone's breathing or heartbeat has stopped. A heart attack occurs when part of the heart is starved of oxygen. A heart attack can 'stun' the heart and interrupt its rhythm and ability to pump. This is because the heart does not receive enough oxygen and cannot pump blood around the body. There is no heartbeat (pulse) because the heart is not working. When the blood stops circulating, the brain is starved of oxygen and the person quickly becomes unconscious and stops breathing. Without treatment, Permanent brain damage or death can happen quickly. If you know how to perform cardiopulmonary resuscitation (CPR), you could save a life. CPR can maintain circulation and breathing until emergency medical help arrives. Even if you haven't had training, you can do "hands-only" CPR for a teen or adult whose heart has stopped beating ("hands-only" CPR isn't recommended for children). If you've had training, you can use chest compressions, clear the airway, and do rescue breathing. Rescue breathing helps get oxygen to the lungs for a person who has stopped breathing. According to American Heart Association (AHA) CPR done within five minutes of a person's collapse combined with professional care can increase survival rates by as much as 50 percent. It can also "buy time" while waiting for paramedics to arrive.

There are different methods of CPR: 1. Standard: universal compression to ventilation ratio of 30:2 is recommended by the AHA. With children, if at least 2 trained rescuers are present a ratio of 15:2 is preferred. In newborns a rate of 3:1 is recommended unless a cardiac cause is known in which case a 15:2 ratio is reasonable; 2. Compression only: compression-only (hands-only or cardiocerebral resuscitation) CPR is a technique that involves chest compressions without artificial respiration; 3. prone CPR: prone CPR is performed on a person lying on their chest, by turning the head to the side and compressing the back. Due to the head's being turned, the risk of vomiting and complications caused by aspiration pneumonia may be reduced.

Conclusion: In CPR the time is very important. Each minute that passes before CPR is started lowers the chance of survival by about ten percent. If CPR starts within the first three to five minutes, and a defibrillator is available, the chance of survival can be as high as 50%, or even 75%. Attempting to perform CPR is better than doing nothing at all, even if the provider is unsure if he or she is doing it correctly. This especially applies to many people's aversion to providing mouth-to-

mouth ventilations. If one does not feel comfortable giving ventilations, chest compressions alone are still better than doing nothing.

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IMMUNE RESPONSE AND MALARIA

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Introduction: Malaria, the disease as old as humanity itself, and often called as the 'King of Diseases', continues to haunt and taunt mankind. Known since millennia, malaria has played a major role in the history of mankind and it is often said that but for malaria, the history and geographical demarcations of our planet would have been different from what we have today. More than a century after identification of the causative parasites, and more than half a century after finding effective drugs and insecticides, it continues to wreak havoc on millions, particularly in the poorest parts of our world. Malaria is the fifth cause of death from infectious diseases worldwide (after respiratory infections, HIV/AIDS, diarrhoeal diseases, and tuberculosis) and the second in Africa, after HIV/AIDS. The dreaded disease is difficult to eradicate and its control is possible only with coordinated efforts of the general public, healthcare personnel and government agencies. With global warming threatening to increase the mosquito density and the spread of other mosquito borne infections like Dengue and Chikungunya, time has come for all of us to wake up.

Aim: to bring awareness among people about the deadly malaria and its complications with other parasites and its lapses in immunity.

Study: Malaria is an infectious disease caused by the parasites called Plasmodia. There are five identified species of this parasite causing human malaria, namely, *Plasmodium vivax, P. falciparum, P. ovale, P. malariae* and *P. knowlesi*. At the completion of the schizogony within the red cells, each cycle lasting 24-72 hours depending on the species of the infecting parasite, newly developed merozoites are released by the lysis of infected erythrocytes and along with them, numerous known and unknown waste substances, such as red cell membrane products, hemozoin pigment, and other toxic factors such as glycosylphosphatidylinositol (GPI) are also released into the blood. These products, particularly the GPI, activate macrophages and endothelial cells to secrete cytokines and inflammatory mediators such as tumor necrosis factor, interferon-γ, interleukin-1, IL-6, IL-8, macrophage colony-stimulating factor, and lymphotoxin, as well as superoxide and nitric oxide (NO).Many studies have implicated the GPI tail, common to several merozoite surface proteins such as MSP-1, MSP-2, and MSP-4, as a key parasite toxin. The systemic manifestations of malaria such as headache, fever and rigors, nausea and vomiting,