Physiological mechanisms of influence of table and treatment mineral waters based on the balneological measure “Magnesium Oil” on some systems of health organism in experiment

Summary
The mini-review is devoted to modern ideas about the biological role of magnesium, the problem of its lack in the human body, and the experimental substantiation of the possibility of using mineral waters with different magnesium concentrations, obtained by diluting the balneological preparation “Magnesium Oil” (BAMO) for the purpose of improving and preventing numerous diseases in clinical practice associated with magnesium deficiency. The use of drinking water based on the BAMO leads to an improvement in the emotional state of the animals and a decrease in emotional stress. MW based on the BAMO with a magnesium concentration of 2.0g/l and 4.0g/l have a sedative effect on the emotional state of the animals and excitatory - on the individual indicators of the CNS. Mineral waters with different concentrations of magnesium exhibit different biological activity, the nature and characteristics of which make it possible to use them for medicinal purposes.

Keywords: mineral waters, magnesium, central nervous system, kidneys

Mini review
Since the first systems that suffer from adverse (stress) influences are systems for regulating life processes, then the healing of the human body begins with the restoration of their activities in the process of applying natural therapeutic resources (NTR), such as drinking medical-table or therapeutic mineral waters (MW), peloids, clays, preparations on their basis, etc. Restoration of regulation ensures normalization of the functioning of the damaged system (central nervous system, gastrointestinal tract, etc.), which increases the adaptability of the whole organism, and thus provides for its recovery. It should be noted that most diseases and pathological conditions are due to magnesium deficiency, but the lack of magnesium is determined by laboratory studies either indirectly or with long (for years) deficiency and manifestation of the disease. Moreover, magnesium metabolism disturbances often occur in patients who already suffer from diabetes type 2, arterial hypertension, coronary heart disease, bronchial asthma, while the increase in magnesium deficiency is consistent with the deterioration of the course of the underlying disease and the development of complications. Homeopathy of magnesium in the body is a prerequisite for human health. Changing the contents of this macro element is very often combined with ecological, geographical, professional causes and leads to the development of a number of pathological conditions. Modern living standards, elevated levels of acute and especially chronic stress, a diet with predominant content of artificial food and beverages, hypodynamia determine the growth of the prevalence of cardiovascular diseases, obesity, diabetes mellitus (DM) type 2, and create the problem of chronic deficiency of magnesium in the body. Already in the beginning of 2000 millennia there was a convincing evidence base for the prevalence of the lack of magnesium - according to research by Schimatschek HF which included 16 thousand people, the prevalence of hypomagnesemia in the general population is 14.5%, and a suboptimal magnesium level was found in 33.7%. Given the above, the problem of restoring magnesium balance in the body is important, and the search and development of tools (which include NTR) that are capable of influencing this process is promising and relevant.

Purpose to conduct a complex experimental evaluation of the influence of internal use of drinking water on the basis of the balneotherapeutic agent “Magnesium Oil” (BAMO) with a concentration of magnesium 0.5g/l, medical-table water on the basis of BAMO with a magnesium concentration of 2.0g/l, and 4.0g/l on the body of healthy rats. The experiment was conducted on white male rats of the Vistar line of outbred breeding. Experimental studies were conducted in accordance with the rules established by the Directive of the European Parliament and the Council (2010/63/EU), and methodical recommendations. The functional state of the kidneys was assessed by the state of the function of urine formation (glomerular filtration rate, tubular reabsorption, diuresis daily), excretory function (for excretion of creatinine, urea and chlorides), and studies of the functional state of the central nervous system (CNS) and the autonomic nervous system by the method of “open field”; investigated the effect on the indices of the immune system. Morphological and histological investigations of internal organs were also performed. The balneological product “Magnesium oil” is a strong brine with a total salinity of 670g/l and a content of magnesium chloride up to 95%, which was diluted with drinking
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Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

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DOI: 10.15406/ijmboa.2018.03.00059