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THE CONCEPTUAL PRINCIPLES OF MEDICAL AND ECOLOGICAL RESEARCHES IN THE CONTEXT OF MEDICAL GEOGRAPHY

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Key words: medical geogrpahy, ecological research.

Abstract. Nowadays ecological situation and population morbidity is generated most of all by the high level of anthropogenic effect. That is why the conception of medico-ecological researches is studied in the system "environment – population health". The bases of conception are ecological researches, determination of the level of intensity of medico-ecological situation, integral index of ecological danger of landscape, cartographic modeling and geoecological monitoring.

Introduction

Nowadays ecological situation and morbidity of population is generated mainly by the high level of anthropogenic effect. Clear indications of ecological crisis are detected at all regions of Ukraine. They are favorable to steady increasing of oncologic, cardiovascular, infectious, respiratory, allergic and other diseases.

Medico-ecological researches of the regions of Ukraine are also stipulated by the necessity of implementation of international and state programs, including resolution of the Cabinet of Ministers of Ukraine N 182 from February 22, 2006 "Regarding Approval of the Order of Realization of the state socio-hygienic monitoring".

1. Outgoing precondition

Medico-ecological researches of the territory are carried out by different experts – biologists, geographers, ecologist and medicals. Questions of econosological cartographing and medico-ecological zoning are elucidated in

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works of Baranovskyy W. [1], Shevchenko W. [5]. Ecological aspects of the assessment of population health are discussed in works of Berdunuyk O [2], Serdyuk A. [4] and others. Chernivtsi National Y. Fedkovich University and Department of Medical and Ecological Problems, L.I. Medved's Institute of Ecohygiene and Toxicology developed and defended joint scientifically-dissertational project "Medico-ecological assessment of settling geosystems of Chernivtsi region" [3].

2. Goal and target of the research

Taking into consideration European tendencies of Ukraine and geoecological problems, which should be solved on the international level, it is necessary to create joint transboundary network on medico-ecological monitoring, which will function with due regard for conditions of constant development. The target of research is an interpretation of main preconditions of medico-ecological investigation taking into account geoecological peculiarities of regions of Ukraine.

3. Exposition of main research material

Problems of medico-ecological researches are examined in the system "environment – population health", built on the fundamental data of geoecology and medicine. The bases of the conception are ecological researches, determination of the intensity level of medico-ecological situation, integral index of ecological landscape danger, cartographical modeling and geoecological monitoring.

Ecological researches of the territories should be carried out on landscape base. Landscape complexes (natural and anthropogenic) are saturated with interacting effusion of materials, energy and information [3]. That is why the process of pollution of different territories should be studied against a background of landscape parts. It gives us the opportunity to use methodical receptions of data's interpolation and extrapolation in the process of model mapdrawing (that is relatively reliable and economically beneficial under the condition of project execution).

The determination of the level of intensity of medico-ecological situation of landscape parts should carry out on the base of multifactorial analysis of parameters of anthropogeoecological system, which consists of two subsystems – "living environment" and "population health". First subsystem deals with ecological indices and criterions of such natural components: 1 – atmospheric air; 2 – drinking water; 3 – soil; 4 – biota (vegetation). Mentioned components form geoecosystem in the result of interconnections and interconditionality. The geoecosystem may become an object of general scientific ecological assessment. The subsystem "population health" was examined using next medico-ecological indices: 1 – death rate, 2 – morbidity (main nosological forms), 3 – medico-genetic

indices (the rate of inborn malformations). The complex index of the intensity of medico-ecological situation (taking into account the effect of harmful factors on the environment of existence) is determined as the sum of pointed indices. The definitive conclusion on the real intensity of medico-ecological situation is made with taking into consideration relationship of cause and effect of any changes of population health [4].

The integral index of ecological landscape safety may be used for the assessment of the level of intensity of medico-ecological situation connected with the environment pollution, taking into account translocal significance of landscape components and synergism effect of the peculiar elements. The integral index records migration of harmful chemical substances in the natural chain (soil - water-individual, soil - atmosphere - individual, soil – agricultural products - individual).

Cartographic modeling is an important stage of the assessment of medico-ecological situation, especially as to branch and complex maps of medico-geographical division into districts. Medico-ecological complexes – nosotops are used in the process of parting and ranging of medico-geographical units.

Geoecological monitoring is based on direct observations over natural and anthropogenic variations of all ecological indices of geosystem for a definite period. Created geoinformational computer system of geoecological monitoring may consist of 4 blocks:

1) assessment of modern ecostate of natural and anthropogenic geosystems (component and according to natural complex). Cartographical modeling of geoecological situations of the target territories;

2) formation of the network of medico-ecological monitoring of the environment and realization of systematized control on the base of created ecopoints and stations with material and technical provision and skilled staff (Stations should be located first of all in effected zones of technogenic objects);

3) prognosis of the development of medico-ecological situations in the target region, depending on different technogenic effects (according to monitoring results);

4) ecological management aimed on improvement of the environment and prevention of negative health effects.

Conclusions

Medico-ecological research is based on the analysis of components of the system “environment – population health”. Main methodological approaches are: landscape-ecological (geoecological) and sanitry-hygienic approaches. Objective base of the assessment of medico-ecological conditions of territorial units is the basic landscape map and its partial variants (landscape-geochemical, landscape-functional). Usage of such maps allows us to study each nosological form at the

background of landscape complexes taking into account natural environment factors (the level of technogenic pollution and self-purification, contents of macroelements and microelements, alkaline-acid and oxidizing- estoration conditions etc.). The assessment of the level of ecological danger (intensity) should be carried out on the base of complex analysis of ecological and medico-demographic dependency of factors. Medico-ecological analysis of the target territory affirms that the level of population health may serve as the integral index (indicator) of the environmental quality.

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