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ESTIMATION OF HEALTH IN CHERNOBYL NPP ACCIDENT CONSEQUENCES CLEANING-UP PARTICIPANTS

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Abstract. Over 11 years period of health observation of Chernobyl Accident's victims permites to make some conclusions. Quantitative changes of peripheral blood and bone marrow cells, changes in ultrastructural organization of hemopoietic cells, disturbance of proliferative activity of hemopoietic and stromal progenitor cells in clean-up workers testify to alterations of functional properties of hemopoiesis. There are high level of T- helpers, early appearance regenerated T-cells, which simultaneously express surface antigens of helpers and supressors, synchronization of proliferative cycle of immunocompetentive cells in these patients. Oppressing of antioxidant protection, stable changes of hormonal maintenance of adoptation and reproduction processes, disturbance of feedback mechanizm between effector glands and hypophysis, significant rise of polyamines were determined. Cardiovascular diseases are the principal cause of health disruptions at victims. Neural and psychological diseases, suicidal cases, trauma, death in automobil accidents are rank second and third in structure of morbidity. In structure of chronic nonspecific pulmonary diseases dominated chronic obstructive bronchitis.The adrenergic tonus of vegetative nervous system was seen. The peculiarity of rehabilitation measures is complexness and continuity in-patients, out-patients service and providing facilities in health resorts.

Over 11 years period of health observation of persons who took part in elimination of consequences of Chernobyl Accident permites to make some conclusions. Ionizing radiation as known alterates various organs. Hemopoietic system is one of the most radiosensitive. As a result of long-term observation we discovered some changes in blood system of victims. No significant differences in indices of peripheral blood and bone marrow of clean-workers, who were irradiated in doses from 0,25 to 1 Zv, in comparison with control in the majority of cases were seen. However, hypercellularity was determined more often than in patients with acute radiation sickness. Blood circulation change and affection of vascular system in majority of trepanobiopsy cases are typical. Quantitative changes of peripheral blood and bone marrow cells, changes in ultrastructural organization of hemopoietic cells, disturbance of proliferative activity of hemopoietic and stromal progenitor cells in clean-up workers 1986-1987 years testify to alterations of functional properties of hemopoiesis. Cultural investigations have shown that no significant differences in colonyformation in the majority of cases in clean-up workers. However, the predominance of eosinophilic and eosinophilic-neutrophilic colonies in culture of 40% of the examined patients was observed as well.

Among clean-up workers disturbance in immune system is more significant than in nonirradiated patients with same pathology or in healthy people with same doses of irradiation. Signs of radioresistance were determined. There are high level of T- helpers, early appearance regenerated T-cells in blood cannel, which simultaneously express surface antigens of helpers and supressors (CD 4+, CD 8+),

synchronization of proliferative cycle of immunocompetentive cells and also presence of main complex of histocompatibility in phenotype in these patients.

Oppressing of antioxidant protection and intesification of processes of lipid peroxidation was determined. Conceptual scheme of metabolic affections of different system in irradiated organism was elaborated.

Stable changes of hormonal maintenance of adoptation and reproduction processes, disturbance of mechanizm of feedback between effector glands and hypophysis, significant rise of polyamines in blood like markers of probability of cancer, athe-rogenic changes of lipid exchange (in half of clean-up workers) were determined.

Long-term monitoring of different parameters of blood circulation system testify that during the whole period after the catastrophe cardiovascular diseases are the principal cause of health disruptions at victims. They are rank first in structure of morbility and mortality (in 30 % of victims) and prevailed over two times in comparison with diseases of organs of digestion and nervous system.

Neural and psychological diseases are rank second and third in structure of morbidity. Combined influence of factors: the radiation, the chronic psychological stress and sickness of population was established. Vegetative dystonia, disturbance of blood circulation in brain and spinal marrow resulting in discirculating encephalopathy and consiquences of small and large hearth insults, nevrological manifistation of bone-muscular paroxysms, neurosis and neurosis-like state were registrated 2-5 times more in patients with doses more than 0,25 Zv. Disturbance of all regulating compartments of vegetative nervous system with predominance of mix visceropathy was determined. In structure of chronic nonspecific pulmonary diseases dominated chronic obstructive bronchitis(80%). Atrophic and catarrhal-sclerotic changes of bronchi's mucous membrane, fibrous-sclerotic changes of lungs with development of obstructive bronchitis and breathing deficiency were observed in clean-up workers 1986-1987 years because of significant inhalation influence of radionuclides. Reliable rise of flat-cellular methaplasia of epithelium with cellular bronchi's atypical characteristics was noted. There is carcinoma in situ in some cases. Frequency of erosive-ulcerated and chronic inflammation of mucous membraneof gastrointestinal tract on the bases of atrophic and hyperplastic processes and significant changes of vegetative status of organism was grown. The adrenergic (sympathetic) tonus of vegetative nervous system instead of cholinergic which inherents in nonirradiated peptic ulcer patients was seen. Results of atropin's test testify to lowering of cholinergic link in pathogenesis of peptic ulcer in 27% clean-up workers with atropinresistant type of secretary reaction (sympaticotony).

We had analysed pathohystological samples of 441 clean-up workers who worked long time at the Chernobyl Nuclear Station and inhabitants of Slavutich.These patients died during 10 after catastrophe. Principal cause of death were diseases of cardiovascular system (35%), basically young persons (31-40 years). It is arouse alarm increase the frequency of suicidal cases (23,08%), trauma (10,66%), automobil accidents because of alcoholism (11,54%).

System of rehabilitation measures was established and improved during post-Chernobyl period of time. The peculiarity of this system is complexness and continuity in-patients, out-patients service and providing facilities in health resorts.

On the stage of hospital service, depending on health and specific diseases of clean-up workers, different combinations of medicines with radioprotective, disintoxicated, membranoprotected, immunomodulated, angioprotected, metabolic and other effects were used. Side by side with them methods of physical and psychoso-

matic rehabilitations, physical therapy aid and methods of nontraditional medicine were used as well.

On the stage of out-patient's service attention was concentrated on supporting therapy, including necessary medicines, physical-balneologic therapy, massage, therapeutic physical training.

Sanatoria's and health resort's stage provides for using of complex of natural climatic factors and nonmedicinal methods of treatment directed on rise of defence activity and nonspecific resistance of organism. Special programmes for improvement and recovery of state in patients with cardiovascular, bronchopulmonal, gastrointestinal, hematoimmune, nervous and for correction of psychoneurological status were proposed side by side with common programme of rehabilitation of victims.