CHERNOBYL EXCLUSION ZONE POPULATION AS THE MODEL FOR HEALTH CONSEQUENCES OF TECHNOGENIC AND NATURAL DISASTERS

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The population of Chernobyl Exclusion Zone (EZ) is unique plausible model for research and prediction of biopsychosocial and health consequences of technogenic accidents and natural disasters. Persons who violated the prohibition to live in the Chernobyl EZ (unsanctioned self-returners or those who never left) are nowhere else existed, unique cohort for this goal, exposed to combination of different extreme environmental stresses (psychological, social, external and internal (radionuclides – Sr, Cs, Pu, Am, etc - via inhalation, contaminated land, water, and natural food) irradiation, heavy metals (Pb, etc), chemicals, psychological response-disposition to alcohol and smoking, etc..

The main motivation to return to the native villages situated in the Chernobyl 30-km EZ, was a socially unsettled state in the places of evacuation as well as unsolved socio-economic problems (80%), nostalgia was less meaningful. In 1988–1989 ~4000 persons lived in the Chernobyl EZ, in 1993–1994 — 828, at present — ~500. Calculated thyroid doses were from 0,28 to 2,36 Sv, and effective doses – 0,06 – 0,82 Sv. Average percent of death cases among self-settlers (relatively to all habitants) is 12.8%, mainly among old persons. The main reasons of death were heart and vascular diseases and oncology pathology. In a specific psychoneurologic study 250 self-returned (70% — females; mainly 65–74 years old) were examined. Brain function disorders were characterized by organic injuries dominated by brainstem-diencephalic irritation related to age and ionizing

radiation. Endogenous organic mental disorders dominated by apathy-abulia changes were found with affective flattening and introversion. 68% of neuropsychiatric disorders, especially schizophrenia spectrum, were due to ionizing radiation.

In a specific prospective clinical, lab, instrumental and field studies for ~400 persons (men and women) from Chernobyl EZ on the base of integral analysis of the changes in all organism systems under extreme stresses exposure (that is a characteristic feature of technogenic or nature catastrophes and possible nuclear and chemical terrorist attack) the high prevalence of cerebro- and cardiovascular diseases, neuropsychiatric (were registered in 97%) and chronic fatigue syndrome spectrum disorders, weakening immune potential, and accelerated aging pathologies, especially for brain and central nervous system were revealed.