



ATMOSPHERIC AIR POLLUTION AND HEALTH STATUS OF THE POPULATION OF THE CHISINAU - CITY

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Introduction. According to the WHO the burden of diseases, conditioned by air pollution, is the cause of more than two million cases of premature death annually.

Material and methods. There were analyzed the data of the State Hydrometeorological Service, the results of laboratory analyze of NAPH regarding the atmospheric air pollution and were estimated morbidity of the population of Chisinau-city.

Results. Data on air quality in the Chisinau-city over the years reveals that the maximum value of the average annual concentration of solid suspensions (fibrous pollutants) was recorded in 2007 and amounted to 0.11 mg/m³, i.e. 0.73 MPC (maximum permissible concentration), this being - 0.15 mg/m³. In the last 8 years (a. 2008-2015) the value of the average annual concentration of solid suspensions remains at the level of 0.1 mg/m³ and does not exceed the MPC. Focusing on the level of air pollution with SO₂ (MPC - 0.05 mg/m³) in the Chisinau-city, we can mention that during the years 2005-2008 the content of this substance was maintained at the level of 0.01 mg/m³, and during the years 2014-2015, the level of SO₂ concentration in the Chisinau-city remains at 0.005 mg/m³. The NO₂ concentration was evaluated using the MPC in the Republic of Moldova equal to 0.04 mg/m³. The average annual NO₂ concentrations had an extremely alarming value in 2009 - 0.09 mg/m³, which was about 2.3 MPC, followed by a content of 0.06 mg/m³ in 2014-2015. Formic aldehyde exceeded the MPC (0.003 mg/m³), being from 0.004 in 2005 to 0.018 mg/m³ (6 MPC) in 2012 and 0.011 mg/m³ in 2015. According to the data of NAPH in 2020 the concentration of dust in 26.5% of cases exceeded the MPC (in 2019 - 30.7%, 2018 - 55.4%), sulfur dioxide - 17.6% (in 2019 - 7.8%, 2018 - 17.7%). Non-compliant samples regarding the content of formic aldehyde were in the year 2020 - 0.47% (in 2019 - 9.2%, 2018 - 2.12%) and of nitrogen dioxide - 7.12% (in 2019 - 11.5%, 2018 - 19.7%). Depending on the inhabited area, the study quantified a high level of morbidity due to respiratory and circulatory diseases at the population exposed to pollution in polluted area (PA), compared to the non-exposed population from conventionally clean area. In the structure of respiratory diseases, tonsillitis, rhinitis, pharyngitis, laryngitis, sinusitis, acute tracheitis predominated. This indicator was higher in the population from PA, being equal to 605.0 compared to 496.7 cases per 1000 inhabitants. Pneumonia in the population from PA was 3.4 times more often and acute bronchitis - 1.8 times. Lung cancer was 1.3 times (p<0.05) more common in PA.

Conclusions. It was quantified the existence of the dependence of the health status of the urban population on the atmospheric air quality and also the need for the elaboration and implementation of prophylactic measures.