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Epidemiology and Prevention of Tuberculosis

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Abstract. The incidence of tuberculosis determines the level of socio-economic tension in society, regardless of the social composition of population groups. Negative environmental changes and socio-economic problems affect the usual way of life of the majority of the population, provoking changes in the immune status of almost all members of society. It is impossible to carry out measures to prevent tuberculosis without in-depth knowledge of the various factors that determine the development of this disease for each individual case in a social group. Anti-tuberculosis measures are also ineffective without assessing the medical and social characteristics of the formation of morbidity among certain groups.

Keywords: disease, primary tuberculosis, global level, infection, tuberculosis, morbidity, anti-tuberculosis drugs, chronic.

Tuberculosis (TB) is one of the major public health threats, competing with the human immunodeficiency virus (HIV) as the cause of death due to infectious diseases worldwide. Although a declining trend in TB incidence, prevalence and mortality has been observed over the last decade, elimination of the disease at global level is still out of reach, and massive resource investment is still required. TB is a poverty-related disease which disproportionately affects the poorest, the most vulnerable and marginalized population groups wherever it occurs. Improving access to diagnosis and care, the basic requirements in the fight against TB, are particularly challenging in these persons. Besides, TB control cannot be carried out without setting up an effective surveillance system in order to define the course of the epidemic and assess the impact of control measures on the disease. Hence, TB national programs must devote significant resources to the disease-specific recording and reporting system. Routine surveillance systems represent the best method for drug resistance assessment and monitoring, though high-quality data can be generated only by the allocation of significant resources. The increasing number of detected multidrug-resistant forms is among the current most frightening issues, requiring a strong and comprehensive commitment in terms of funds allocation, research promotion and field implementation of new tools and protocols.

Tuberculosis (TB) is one of the pressing problems of practical health care throughout the world. The causative agent of tuberculosis infection, M. tuberculosis, as an infectious agent, has killed more people than any other microbial pathogen (Daniel T.M., 2006). According to WHO, in 2012, 8.7 million new cases were registered in the world, the incidence rate was 125 per 100 thousand population (WHO, 2012). At the same time, the rise in incidence, characteristic of the last two decades, took place not only in economically backward countries, but also in developed countries of Western Europe, as well as in the USA (Onischenko G.G., 2008). This unfavorable trend is still observed today, despite the availability of effective treatment regimens and diagnostic methods (Ernst J. D. et al., 2007

These large numbers of cases and deaths notwithstanding, 20 years on from the 1993 World Health Organization (WHO) declaration of TB as a global public health emergency, major progress has been made. Globally, the TB mortality rate (deaths per 100 000 population per year) has fallen by 45% since 1990 and TB incidence rates (new cases per 100 000 population per year) are falling in most parts of the world. In the 18 years since the launch of a new international strategy for TB care and control by WHO in the mid-1990s (the DOTS strategy) and the subsequent global rollout of DOTS and its successor (the Stop TB Strategy, 2 Box 1.2), a cumulative total of 56 million people were successfully treated for TB between 1995 and 2012, saving approximately 22 million lives.

The purpose of the study is the scientific substantiation and development of effective measures to help reduce the prevalence of tuberculosis among the adult population of the Bukhara region.

Research objectives:

1. study of the characteristics of the spread of tuberculosis, analysis of the dynamics, main trends and patterns of incidence, prevalence and mortality from tuberculosis in the population of the Bukhara region for 2012-2022;

2. identifying and assessing the role of various factors, their complexes in the occurrence of tuberculosis and forecasting morbidity and mortality from tuberculosis in the population of the Bukhara region;

3. development, testing and implementation in healthcare practice of objective criteria and methods for identifying groups at increased risk of tuberculosis, determining the place of risk groups in the system of medical examination of the population;

4. justification of a set of measures for the prevention of tuberculosis in the Bukhara region with subsequent evaluation of effectiveness.

Scientific novelty of the work.

To develop proposals for improving the system of epidemiological control of pulmonary tuberculosis in Bukhara region and to give concrete recommendations for the prevention of this infection.

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