

DATA ANALYSIS OF TUBERCULOSIS INFECTION IN UNITED REPUBLIC OF TANZANIA AND UKRAINE DURING 2001-2011

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Tuberculosis is a leading infectious cause of morbidity and mortality in adult worldwide, killing about 1.5 million people every year. HIV/AIDS is an increasingly prominent factor predisposing to tuberculosis infection and mortality in parts of the world where both infections are prevalent.

The aim of this report is to analyse, compare statistically and suggest the reason for the difference in the rate of tuberculosis infection between two countries Tanzania and Ukraine. These countries were taken because of approximate quantity of population in them.

The trend of tuberculosis incidence from 2001-2011 has decreased in Tanzania by 25%, and in Ukraine it has decreased by 20% (all values rounded into 1 significant figure). In Ukraine in 2011 the incidence was 67,2 per 100000 population, in Tanzania it was 177,1. The prevalence of tuberculosis including HIV is higher in Tanzania in comparison to Ukraine, in Ukraine it was 155,1 per 100000 population in 2011, in Tanzania – 183,2. This can be explained by the increase of rate of HIV/AIDS infection in Tanzania, and tuberculosis as secondary to HIV/AIDS rises (prevalence of HIV in adults aged 15 to 49 (%) by WHO 2011 report is 1.1 for Ukraine and 5.6 for Tanzania). Death due to tuberculosis in HIV negative people over last 10 years is lower in Tanzania than in Ukraine. In Ukraine death rate was 15,3 per 100000 population in 2011, in Tanzania it was 13,2 per 100000 population. Among other causes such multidrug resistance the factor determining this variation is the lower level of tuberculosis and HIV patients in Ukraine, while in Tanzania patients with HIV and tuberculosis is higher.

The duration of disease is very difficult to measure directly. It is assumed to vary according to whether the individual receives treatment in a DOTS-strategy or not; and whether the individual is infected with HIV. Further, durations are assumed to follow distributions with a large variance to account for differences between countries.

WHO pilot programme of DOTS-strategy was introduced in Ukraine in 2001. In Tanzania this strategy was implemented much later. Its realization is complicated because of the lack of medical workers.