

Extensively Drug- Resistant Tuberculosis in India: Prevalence, Incidence and Burden

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Introduction: Extensively Drug-Resistant Tuberculosis (XDR-TB) is a recent challenge for tuberculosis control program. The absence of the functional drugs and high rate of the failure in treatment and mortality rate also high jeopardize for epidemiology. Its prevalence is unknown in India as there was no nationwide counselling. Globally, there were an estimated 55,100 new extensively drug resistant tuberculosis cases in the year of 2015 in 117 countries. However, only 30 cases extensively drug-resistant tuberculosis was reported. Drug susceptibility test (DST) is the cornerstone to diagnose extensively drug resistant tuberculosis, but the lack of laboratory facilities in the resource-limited endemic countries limits its uses. A few new drugs including bedaquiline and delamanid have the potential to improve the efficiency of extensively drug-resistant tuberculosis treatment, but those drugs are used in 39 countries only. The costs of extensively drug resistant tuberculosis treatment (XDR-TB) are several folds higher than then multi drug- resistant tuberculosis (MDR-TB).

Objectives: Approximately one in four population in global is affected with the tuberculosis bacteria. When the bacteria grow actively people become an inadequate upon tuberculosis. Bacteria develop active as a consequence of anything that can decrease the person's immunity, such as human immunodeficiency virus and some medical conditions [6]. Extensively drug resistant tuberculosis can develop when these second line drugs are also mismanaged and therefore also become inadequate. Extensively drug resistant tuberculosis increases concerns of a subsequently TB outbreak with confined medication choice, and threatens the major acquires made in tuberculosis resistor and the progress on decreasing tuberculosis bereavements between the people livelihood with (HIV/AIDS). It is consequently essential for the tuberculosis to manage properly, and new tools must be developed to prevention, treatment, and diagnosis of the disease [7]

Results: Were 7250 extensively drug- resistant tuberculosis (XDR-TB) patients was enrolled on treatment in 58 countries and territories globally in the year of 2015. Most cases were from India (2130), South Africa (719), the Russian Federation (1205), and Ukraine (1206) [5]. The treatment outcomes of extensively drug-resistant tuberculosis (XDR-

TB) vary widely depending on the drug regimens, duration of treatment, and the prevalence of tuberculosis and HIV, and even on geographical location. Usually, the outcome correlates with the spectrum of drug resistance. About 250,000 deaths were reported from multi drug resistant or rifampicin resistant tuberculosis in 2015 [22]. The latest data from cohort studies show a treatment success rate of 83%, 52%, and 28% for tuberculosis, multi drug resistant tuberculosis (MDR-TB) and extensively drug resistant tuberculosis (XDR-TB) respectively [23]. Previously, a detailed analysis of some observational studies found an overall 44% success rate for extensively drug-resistant tuberculosis (XDR-TB) treatment. In high burden countries, this rate may be even less [24]. In South Africa, less than 20% extensively drug-resistant tuberculosis patients became culture-negative after the treatment, and it was not dependent on the HIV status [25]. There are a few new drugs under development, and they have the potential to improve our capacity to treat extensively drug-resistant tuberculosis. For example, bedaquiline (diarylquinoline compound), and delamanid (nitro imidazole), have shown rapid culture conversion [26].

Conclusions: All the reference laboratories in each country should perform high quality conventional drug susceptibility test for all the second line drugs to diagnose extensively drug-resistant tuberculosis effectively. According to the previous study reports from across the India document the presence of extensively drug-resistant tuberculosis (XDR-TB) in India. There is a pressing need for country wise survey of extensively drug- resistant tuberculosis (XDR-TB). Huge enlargement of quality assured mycobacteriology laboratories should be providing a stern guidelines and etiquettes are essential for diagnosis and treatment of extensively drug-resistant tuberculosis. Practical and effective infection containment measures and facilities for intensive counselling of tuberculosis patients need to establish.