BioSpectrum the business of Bio & Health Sciences ASIA EDITION

How real is the threat of TDR-TB?

March 23, 2012 | News | By BioSpectrum Bureau



The latest concern to have plagued the field of TB is the emergence of total drug resistant TB (TDR-TB). Until 50 years ago, there were no medicines to cure TB. Now, strains that are resistant to a single drug have been documented in every country surveyed. Furthermore, strains of TB, such as multi-drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB) have been reported in several countries. While MDR-TB is defined as resistance to isoniazid and rifampicin, with or without resistance to other first-line drugs (FLD), XDR-TB is defined as resistance to isoniazid and rifampicin, any fluoroquinolone, and to any of the three second-line injectables (amikacin, capreomycin, and kanamycin).

As of last spring, according to the WHO, there were about 440,000 cases of multiple drug resistant (MDR-TB) per year, accounting for 150,000 deaths, and 25,000 cases of extensively drug-resistant tuberculosis (XDR-TB). One third of all these figures are attributed to the Asian region, and this reflects the criticality of the situation. The WHO said last spring that only two-thirds of countries with resistant TB epidemics have the lab capacity to detect the resistant strains. As a result, only one MDR patient out of every ten gets into treatment, and when they do, cure rates range from 82 percent to 25 percent. That's for MDR. None of the TDR patients have been recorded cured.

Tackling TDR-TB is posing to be a difficult task for private and public organizations across the world due to several reasons. TB researcher Dr Gyanu Lamichhane, assistant professor of medicine, Johns Hopkins University, says there are multiple issues associated with TB, which make it a difficult to work on. "It is an infectious disease that is airborne and, therefore, it is quite resource-intensive to establish a research lab to study the disease. Also, the bacterium grows very slowly in the lab making it both time and resource intensive to study it."

The warning list of the Program for Monitoring Emerging Diseases (ProMED) pointed out the first cases of TDR-TB long before that of the 12 known cases at the the P D Hinduja National Hospital and Medical Research Center in Mumbai during December 2011 or the 15 cases in Iran during 2009. ProMED, which is an internet-based reporting system from the the International Society for Infectious Diseases dedicated to rapid global dissemination of information on outbreaks of infectious diseases, reported that two women from Italy who died in 2003 were suffering from TDR-TB for several years. Although the WHO has now defined the cases in India as extensive drug resistant tuberculosis (XDR-TB), many health professionals in India feel that the reporting of the cases is only the tip of the iceberg. It is evident from these figures that the treat of TDR-TB is more real than it appears and that even developed nations would not be spared by the scourge of TB.

> **gyanu-lamichane "The lack of good and readily accessible in vitro and animal models of TB make it difficult to simulate TB in humans."**

- Dr Gyanu Lamichhane, assistant professor of medicine, Johns Hopkins University

Ã?Â

Ã?Â