

The new, deadly TB strain may be more widespread

*Six total drug resistant cases found among 100 random patients:
Bangalore Researchers*

The occurrence of a new, deadly variant of the TB causing bacteria, *Mycobacterium tuberculosis*, that is resistant to all currently available lines of treatment - researchers at the P D Hinduja National Hospital and Medical Research Centre at Mumbai say they have detected 12 such cases recently in India - could be more widespread.

According to a yet-to-be published paper by a research group in Bangalore's St John's Research Institute, among 100 TB patients they had randomly selected for drug susceptibility studies, six were found having the 'total' drug resistant (TDR) strain of the disease. Besides, 30 among the 100 patients were found to be first line multi-drug resistant (MDR) cases and 13 second-line extensive drug resistant (XDR) cases.

"Our data is pending publication. We have stored the drug resistant varieties in our bio-repository to show that they exist," says Dr John Kenneth, Professor and Head, Infectious Diseases, St John's Research Institute.

The emergence of the TDR-type strain means that TB could be more dangerous than HIV because the spread of HIV can be controlled with the control of risky behavior and life can be prolonged with treatment.

On the other hand, "TB is transmitted through aerosols and drug resistance is considered a virtual death sentence," says Dr Kenneth.

"Although there are some international reports that it can be cured if you do individual treatments, it is too far-fetched in a country like India where most patients are poor," he adds.

Since the findings were derived from drug susceptibility studies carried on 100 patients being treated at St John's Hospital, to which the institute is attached, Dr Kenneth admits: "These figures have a certain degree of selection bias, as the isolates were not obtained by strict serial sampling but were selected randomly."



WHO'S 2009 TB REPORT

19.6 lakh annual incidence of TB in India

Around 3.5-4 lakh die of TB each year in India

At 1.31 lakh cases yearly, India has the largest burden of first line multi-drug resistant TB

The incidence of extensively drug resistant and total drug resistant TB not been scientifically reported yet

Researchers Zarir F Udawadia and others from the P D Hinduja National Hospital and Medical Research Centre, during drug susceptibility tests on TB patients at the Hinduja Hospital, reported they had found four patients with TDR-TB.

“Each of the 4 patients was resistant to all first-line (isoniazid, rifampicin, ethambutol, pyrazinamide, and streptomycin) and second-line (ofloxacin, moxifloxacin, kanamycin, amikacin, capreomycin, para-aminosalicylic acid, and ethionamide) drugs tested,” states their paper published in the international Clinical Infectious Diseases journal in December 2011.

The Hinduja research centre paper follows the first findings of TDR-TB cases in 2009 in Iran.

Published in Chest, the official publication of the American College of Chest Physicians, the Iranian researchers had warned that the “isolation of TDR strains from MDR-TB patients from different regional countries is alarming and underlines the possible dissemination of such strains in Asian countries”.

According to SJRI’s Dr Kenneth, one of the biggest problems in tracking TDR-TB in India is the lack of adequately equipped centres to determine drug susceptibility among patients.

“The diagnosis of a clinically ill person suspected to have TB, is limited to the microscopic examination of a stained film of his/her sputum. The specimen requires in-vitro culture and the need to identify drug resistance. The method involved in this is skill-intensive, expensive and simply not available to the vast majority of patients here,” he said.

“Centres determining drug susceptibility in patients, who can afford it or those who clinically fail therapy, are few and far between. Estimating ‘total drug resistance’ parameters is possible only at a handful of centres in India, which would hardly be sufficient to estimate the actual rate,” he added.

According to the P D Hinduja researchers’ paper, though India’s “Revised National TB Control program (RNTCP) might have been a success but only a very small percentage of MDR patients actually have access to Directly Observed Treatment Short-course (DOTS, the globally standardized short-course chemotherapy cure for TB).”

“We would urge that patients with MDR-TB be treated within the confines of government sanctioned DOTS-Plus programs to prevent the spread of this untreatable form of tuberculosis,” Udawadia and others have reported.

THE STRAIN IN THE AIR

- ✓ TDR (Total Drug Resistant)-TB is the result of the latest mutation of Myobacterium tuberculosis after the emergence of Multi-Drug Resistant TB (MDR-TB) in 1992, and the arrival of Extremely Drug Resistant TB (XDR TB) a few years ago.
- ✓ TDR-TB patients are resistant to all first line and second line drugs.
- ✓ Except for drastic Surgery and medication for some relief, there is currently no cure for TDR-TB
- ✓ TDR-TB was reported three years ago in Iran in 15 patients
- ✓ India’s first TDR-TB patients 12 over the past two months were detected recently by Researchers at the P D Hinduja National Hospital and Medical Research.