

AVERAGE AGE OF PATIENTS WHO DIDN'T RESPOND TO TUBERCULOSIS DRUGS IS 32 YEARS

GERMS GET RESISTANT

- Drug-resistant TB can be caused by: a) inconsistent or partial treatment; b) when patients do not take all medicines regularly for the required period because they start to feel better; c) because doctors and health workers prescribe the wrong treatment regimens; or d) because the drug supply is unreliable
- A particularly dangerous form of drug-resistant TB is Multi-Drug-Resistant TB (MDR-TB). It is caused by bacilli resistant to at least isoniazid and rifampicin, the two most powerful anti-TB drugs
- India reportedly has the highest burden of MDR-TB, with some estimates pegging it at 3 lakh. Barely 1% are covered by the govt's free drug plan
- Drug-resistant TB requires chemotherapy with second-line anti-TB drugs that are costlier than first-line drugs, and which produce reactions that are more severe, though manageable
- MDR-TB treatment continues for 24 to 27 months and could cost up to Rs 2 lakh
- The emergence of Extremely Drug-Resistant TB (XDR-TB), particularly in settings where many TB patients are also infected with HIV, poses a serious threat to TB control. The patient is resistant to one more drug
- Patients resistant to all 1st-line and 2nd-line drugs are classified as having Totally Drug-Resistant TB (TDR-TB)

Graphic:
Yamini Panchal

'Deadlier strain arose due to health system's failure'

Malathy Iyer | TNN

From the emergence of Multi-Drug-Resistant tuberculosis (MDR-TB) in 1992 to the arrival of Extremely Drug-Resistant TB (XDR-TB) a few years ago, the TB bacilli have now reached a totally resistant form. The new, deadlier form is Totally Drug-Resistant TB (TDR-TB).

"A hundred years ago, TB patients were sent to the sanatorium for treatment. With the emergence of these various drug-resistant strains, we have come full circle to the idea for sanatoria. We have little to offer these patients except for drastic surgery and medication for some relief," said Dr Zarir Udwadia, of Hinduja Hospital, Mahim. His team's observations have been published in the latest issue of the US-

based Clinical Infectious Diseases (CID) peer review journal.

Udwadia says the emergence of TDR-TB is the failure of the overall health system. "The public sector only provides second-line drugs to 1% of the patients who have drug-resistant TB. The private sector has many doctors who badly manage patients. These factors have obviously worsened drug resistance." An earlier study by the group showed that barely 5 of 106 doctors in Dharavi prescribed the right drugs for drug-resistant patients.

The CID report, written by Udwadia, Rohit Amale and Camilla Rodrigues of Hinduja Hospital says, "A careful audit of their (patients) prescriptions revealed that these patients had received erratic, unsupervised second-line drugs, added individually and often in incorrect doses, from multi-

ple private practitioners."

TDR-TB was reported three years ago in Teheran, the Iranian capital, when 15 patients were found to have bacilli resistant to all first- and second-line drugs. A worrisome aspect of the Hinduja Hospital findings is that the average age of the 12 patients – six men and six women – is just 32.3 years.

While the minimum period of suffering has been two years, one patient (who cannot be named due to confidentiality clauses) is the 35-year-old wife of a farmer from Deveria, UP. She has been ill for over five years. While the patient is very ill, her husband told TOI, "We began treatment in a local hospital for a year before moving to Lucknow and then Kanpur for treatment." She has been on an MDR-TB drug regimen for over two years. "I have sold major portions of my farm in this period and have taken up work in Mumbai," he added.

Hinduja Hospital doctors are awaiting a CT scan before deciding whether a lung surgery can provide some relief to the woman.

Drug Susceptibility Testing (DST) performed at Hinduja Hospital showed that each of the 12 patients was resistant to all first-line drugs (isoniazid, rifampicin, ethambutol, pyrazinamide and streptomycin) and second-line drugs (ofloxacin, moxifloxacin, kanamycin, amikacin, capreomycin, para-aminosalicylic acid and ethionamide) that were tested.

Type I Epithelial cell

Type II Epithelial cell

Alveolar macrophage

Alveolar space

T cell

Alveolar DC

M tuberculosis bacilli (red dots)

AN INFECTED ALVEOLUS (AIR SAC) OF THE LUNG

AIR THREAT

- Tuberculosis (TB) is a contagious disease. Like the common cold, it spreads through the air. It can affect any part of the body, but only people with TB in their lungs are infectious
- When infectious people cough, sneeze, talk or spit, they spread TB germs, known as bacilli, into the air. A person needs only to inhale a small number of these to be infected
- But people infected with TB bacilli will not necessarily become sick. The immune system 'walls off' TB bacilli, which, protected by a thick waxy coat, can lie dormant for years. When the immune system is weakened, the chances of becoming sick are greater
- Left untreated, a person with active TB can infect 10 to 15 people a year

INDIA A HOTSPOT

- Overall, a third of the world is infected with the TB bacillus, but not all are sick
- 5 to 10% of people infected with the TB bacilli (but who are not infected with HIV) become sick or infectious at some time in their life. People with HIV and TB infections are more likely to develop TB
- 1.7 million people died of TB in the world in 2009. About 3 to 4 lakh die each year in India

KILLER IN MUMBAI

- TB caused 15% (8,953) of the deaths in Mumbai in 2010
- BMC has 28,000-plus listed patients. Thousands more seek pvt sector treatment
- As of Dec 31, 2011, 298 patients were under treatment for MDR-TB. Three tested positive for XDR-TB. Results of 27 tests are awaited