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How will Asia tackle total drug resistant TB?

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The latest concern to have plagued the field of tuberculosis (TB) is the emergence of total drug resistant TB (TDR-TB). Cases of TDR-TB have surfaced in several countries, including Italy during 2003 (two cases); Iran during 2009 (15 cases); and most recently in Mumbai during 2011 (12 cases). Although the WHO has now defined the TB 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 as one-fifth of all the world's TB patients are in India.

Until 50 years ago, there were no medicines to cure TB. Now, not only have we witnessed the emergence of strains that are resistant to a single drug in every country that has been surveyed but have also documented strains of TB, such asmulti-drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB), in several nations of the world (including developed countries). It is evident 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.

Healthcare has made great strides in the past four decades and has achieved the eradication of several fatal diseases such as small pox among others. However, medical science is yet to extrapolate these successes in the field of tuberculosis. The World Health Organization (WHO) estimates that the number of new TB cases arising every year, the prevalence of TB cases, and the number of people dying in the South East Asian region are 3.3 million; 4.9 million and 480,000, respectively. It is estimated that between 2000 and 2020, nearly one billion people will be newly infected, 200 million will get sick, and 35 million will die from TB, worldwide. In view of the grave concerns associated with TB, the WHO declared March 24 of every year as

the World TB Day.

TB can be eliminated from the world only when it is eradicated from Asia, as the majority of TB cases in the world arise from this region. Moreover, the probability of the emergence of a lethal phase of TDR-TB is very high in Asia due to its poor economy, inefficient healthcare systems and lack of government initiatives. Paying heed to this, a lot of global organizations such as Bill and Melinda Gates Foundation, Stop TB Partnership, Lilly MDR-TB Partnership, United States Agency for International Development (USAID), TB Alliance and The Global Fund, among others, have set up their operations in Asia in order to tackle the problem.

Furthermore, while the low monetary return on TB drug R&D has been low, several organizations have been brave enough to venture in the field, including research institutes such as National Tuberculosis Institute, Bangalore, India; Institut Pasteur Korea (IPK), South Korea; Infectious Disease Research Institute (IDRI), US; Novartis Institute for Tropical Diseases, Singapore; and private companies like GlaxoSmithKline's Tres Cantos Medicines Development Campus, Spain; AstraZeneca, India; Sandoz, Germany; Reliance Life Sciences, India; Takeda, Japan; Eisai, Japan; Sanofi-Aventis; Tibotec, Japan; Otsuka, Japan, Bill & Melinda Gates Foundation, and TB Alliance among others.

Obstacles

There has been significant progress in global TB control, but, further progress is hindered by the inability to quickly and accurately identify TB patients and provide them with treatment. By the time most TB patients are correctly diagnosed, they have already infected many other people. Their delayed treatment also puts them at risk of increased suffering or even death. The most commonly used TB diagnostic technique is more than 100 years old and misses half of TB cases. So, to interrupt this cycle of transmission, we urgently need new, more effective diagnostics that ensure that patients quickly receive the care they need. Dr Gyanu Lamichhane of the Johns Hopkins Center for Tuberculosis Research feels that air-borne nature of the pathogen makes it resource-intensive to start a research lab or project to study the disease. Professor Paul Herrling, chairman of the board of Novartis Institute for Tropical Diseases, Singapore, feels that the need to do several combination tests and the long duration of the treatment are the main hindrances in treating TB.

Furthermore, the rate of development of new drugs for TB is extremely sluggish. While it takes more than a decade to come up with a new drug for TB, it takes only a few months for the TB bacilli to adopt to the drug. Also, since the monetary return in TB is limited as compared to other other diseases, pharmaceutical companies remaining apprehensive while investing in the. Dr Lucica Ditiu, executive secretary, Stop TB Partnership, believes that providing universal access to TB care, including modernizing diagnostic laboratories and adopting revolutionary TB tests; and filling the research gaps in order to bring rapid TB tests, faster treatments and a fully effective vaccine to market would slash global TB deaths in half by 2015.

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