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Testing positive for tuberculosis research

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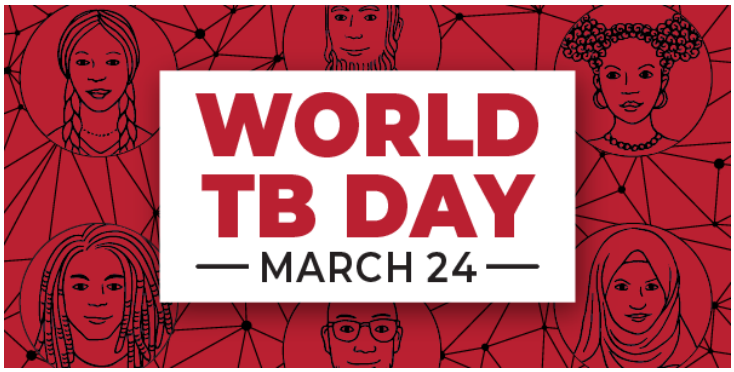
24 March is celebrated as the World TB Day



With India accounting for about 26% of the tuberculosis (TB) cases in the world, the Indian governments and researchers alike have been tirelessly propagating research in this field, in hopes of reducing the number of cases and curbing this potentially lethal attack on one's lungs. While campaigns like the 'TB free India Campaign' have been implemented to curb this disease in a mere 5 years, this aim can only be met with the appropriate technologies to detect tuberculosis, allowing one to begin medication as soon as possible.

Recently recognised by the World Health Organisation was Truenat MTB, developed by Molbio Diagnostics, based in Goa. With the help of the Foundation for Innovative New Diagnostics, this test was made available to the masses as a means to test pulmonary and extrapulmonary TB and rifampicin-resistant TB.

Typically test included sputum smear microscopy, which has only 50% sensitivity to the bacteria. Comparatively, this novel test has 89% sensitivity. Unlike other tests, Truenat MTB uses a battery, is portable and does not require special medical knowledge to operate, making it conducive for widespread use even in rural facilities. Complementing its small size is its reduced time for diagnosis. By needing only 25 minutes to take DNA and 35 minutes for detection, it is an efficient method of identifying those who require medical assistance at the earliest.

Recently, a collaboration between The Foundation for Innovative New Diagnostics (FIND) and Cepheid, Inc, California, has lead to the development of the Xpert® MTB/XDR test which is able to detect strains of the bacteria that are resistant to common TB drugs. By detecting several mutations in the genes of only one sample, this test reduces the time taken for diagnosis from around 16 weeks to just 90 minutes, thus allowing doctors to prescribe the appropriate medicine before the disease develops to an extreme degree. This test is currently awaiting the dossier created by the World Health Organisation. Once in this review, these companies will be able to expand their reach to countries with high rates of TB such as India and China by increasing production and including this test in their national policies

In light of the recent pandemic, medical attention has been largely placed on the COVID-19, while other dangerous diseases like TB rose. To prevent this, the health department has focused to "integrate their TB case finding activities with COVID preventive measures". This includes emphasising on bi-directional TB and COVID-19 screening, testing for these diseases in patients with ILI and SARI and using CBNAAT and TrueNaT machines.

A large focus has also been placed on the development of molecular technology which can be used in devices with chips or cartridges to improve diagnosis. To further the impact of these measures, the government has increased the number of medical facilities to 953 which have been encouraged to accept a larger number of people to be tested.

Furthermore, the Union Minister of Health & Family Welfare Dr. Harsh Vardhan has introduced the country's first mobile I-Lab, used for the diagnosis of infectious diseases. This mainly aims to reach the rural part of India and provide medical tests at a rapid rate. With the capacity of performing 25 COVID-19 RT-PCR tests, 300 ELISA tests, additional tests for TB, HIV in one day, this lab hopes to improve the recovery rate of patients and eliminate these respiratory diseases as soon as possible.

Only with these revolutionary approaches to a simple tuberculosis test will the government be able to achieve its goal of eliminating this contagious disease. The field of research is constantly churning out faster, smaller and cheaper products designed to cater to the Indian population, with the aim of swift treatment and a tuberculosis free India.

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