

Articles

Industry news: Innovative lab tests give quick, accurate TB tests

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Tuberculosis (TB) is a chronic and contagious disease spread by breathing in air-borne bacteria from people with active TB.

According to the World Health Organisation (WHO), 1 000 South African's die from TB every month, indicating one of the highest infection rates in the world. Globally, TB causes over three million deaths per year. This is more deaths than from AIDS and malaria combined.

Treating TB is specific, complex and costly. According to the Aurum Institute for Health Research, the cost of treating a new case of TB is R300, a retreatment case is R589, and for MDR-TB (multi-drug resistant TB), the cost is R46 000 per patient.

"Clearly, it is in the interests of both patients and health funders to diagnose TB early and treat it effectively first time around," said Dr. Peter Cole of Lancet Laboratories, a member of the National Pathology Group (NPG).

Before the innovation of specific drugs for the treatment of TB, there was no cure. Mortality rates stood at 50%. Today, there are many tests which can be carried out when testing for TB. However, several innovations in laboratory tests make diagnosis of the disease quicker and easier.

"With the development of molecular testing, we are now able to diagnose a patient with TB in less than eight hours – compared to between ten days and six weeks in the past," said Dr. Cole.

With the development of a rapid PCR assay for molecular identification testing, pathologists are able to generate distinct DNA fingerprints direct from primary specimens in a single reaction. This precise method allows for typing of TB strains and is simple to perform.

Similar to the molecular identification tests is molecular resistance testing. This same day test determines which antibiotics the TB bacillus is resistant to, allowing doctors to treat specifically for multiple drug resistant (MDR) and extremely drug resistant (XDR) tuberculosis. In the past, this resistance testing process could take up to six weeks to complete.

Another exciting innovation is the Quantiferon Elisa Test - a simple whole blood assay with results available within 24 - 48 hours. If the patient has been previously exposed to M. tuberculosis, their T-cells will secrete the cytokine interferon gamma into the plasma. The levels of this substance are determined in the laboratory. The Quantiferon Elisa Test does not differentiate active disease from latent infection, but is able to differentiate TB infection from nearly all non - TB mycobacterial infections.

Factors contributing to the increase of TB in South Africa include the escalating number of people infected with HIV/Aids (almost half of all TB patients are HIV-positive), drug-resistant TB strains, and population mobility. High risk areas for TB comprise densely populated areas such as hospitals, prisons, squatter camps, refugee camps, or industrialised areas.

Symptoms of TB include chest pain, breathing difficulty, weakness or fatigue, loss of weight and appetite, wheezing, excessive sweating, coughing for longer than a month, or a cough that produces sputum or blood. It is said, 'prevention is better than cure'. If you have HIV/Aids, think you might have TB, or have been in a high risk area, get tested.

With TB on the rise in South Africa, it is important for the healthcare community to make the correct diagnosis of TB quickly and accurately. Patients diagnosed with TB can be cured if proper medical treatment is applied. However, without the correct treatment, severe illness or death is imminent. Drug resistance develops when patients do not complete the initial six-month course of medication that cures TB.

Issued on behalf of the National Pathology Group (NPG) by Health DiRxions.

Editorial contact

Laura Boon on (011) 658-1581 or laura@lbcommunications.co.za

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