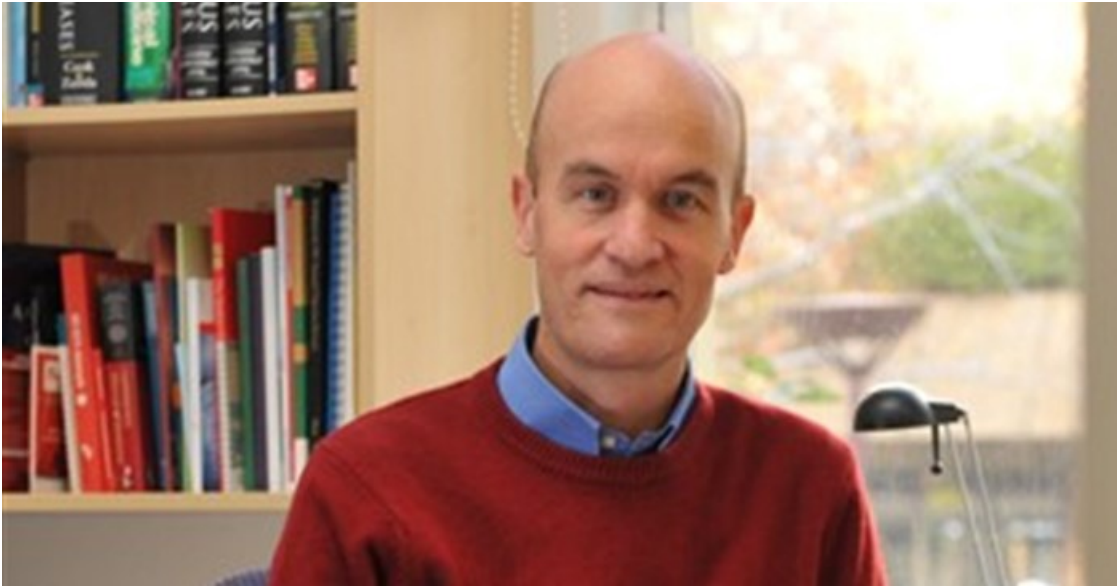


TB urine test gives quicker results in HIV patients

A simple and inexpensive urine test identifies more TB diagnoses among hospitalised HIV patients in the first 24 hours of admission than rapid sputum-based tests.

The Determine TB-LAM assay (similar to a pregnancy test) detects components of the cell wall of the TB bacterium in the urine and takes about 20 minutes without the need for special infrastructure.

A [study](#) on the efficacy of the test by researchers from the University of Cape Town has been published in *BMC Medicine*.



Professor Graeme Meintjes

Challenging the dogma

"The results of this study build on findings of other UCT researchers that this urine test can reduce mortality among HIV-infected patients admitted to hospital by speeding up the diagnosis of TB," says Professor Graeme Meintjes, one of the researchers on the project.

"The findings of these studies challenge the dogma that the first place to look for TB is in the sputum. Among a select group of patients (HIV-infected patients with very weak immune systems admitted to hospital) a combination of tests is required, including urine and sputum tests, to facilitate a quick diagnosis of TB thereby allowing doctors to start patients with TB on appropriate treatment rapidly."

Importance of quick diagnosis

Historically, the laboratory examination of sputum samples has been the method used to diagnose most cases of TB. However, it is well recognised that this approach often fails in patients with HIV infection. In many of these patients, TB spreads from the lungs to the blood and other organs in the body due to poor immunity.

Additionally, there may be few or no TB bacteria found in their sputum, either because they are too weak or ill to produce a good sputum sample or because of less TB cavity formation in their lungs.

Study

The difficulty of diagnosing TB is particularly true for patients with HIV who are sick enough to be admitted to hospital. Notably, in such patients, it is critically important to make a rapid diagnosis of TB so that treatment may be initiated promptly to avoid deaths.

The study was conducted at GF Jooste Hospital prior to it being decommissioned. A total of 427 consecutive patients with HIV infection admitted to the medical wards were screened for TB using sputum, urine and blood tests.

In total, one in three (33%) of these patients were diagnosed with active TB disease. Among patients with TB, sputum microscopy and sputum Xpert diagnosed TB within 24 hours of admission in 19% and 27%, respectively, compared to 38% using the urine Determine TB-LAM assay. The urine test was particularly useful for diagnosing TB in the patients with the lowest CD4 counts or weakest immune systems as well as those who were anaemic.

The main reason that the urine test outperformed the sputum test was because of how difficult it was to obtain a sputum specimen from many patients on admission. Whereas almost all patients, even those were very ill, could provide a urine sample.

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