Doctor raises questions over TB skin testing

Expert warns of 'false positives'

STAFF REPORTER

SKIN testing for tuberculosis, the current method used in South Africa as well as in the UK and Canada is being questioned by a top UCT academic.

He has cautioned that the method could lead to false positives, and should be scrapped in favour of a more accurate model.

The result, Dr Richard van Zyl-Smit warned, could be unnecessary treatment and the consequent threat of the development of drug resistance.

Van Zyl-Smit is based at the UCT Lung Infection and Immunity Unit, and his new findings are published in the American Journal of Respiratory and Critical Care Medicine.

His findings challenge the accuracy of one of the testing systems used in South Africa, a system measured against international guidelines.

Van Zyl-Smit details the two most common testing systems for TB internationally – the single blood-based test recommended by the US Centres for Disease Control and Prevention, and our skin test, followed by a blood test for confirmation.

South Africa uses this model, as well as sputum tests and chest x-rays.

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In his paper, he challenges the accuracy of the skin test, known as the tuberculin skin test, which requires the injection of a small dose of purified TB protein derivative just under the top layer of the skin on the inner forearm.

The protein acts as an antigen, so if the person has been exposed to TB or is still carrying the bacteria, the protein shot would trigger an immune response in the skin.

Patients are told within three days whether the test reaction was positive.

A small lump at the injection site is a positive reaction and usually indicates TB infection.

But infection does not necessarily mean that the person has active, infectious TB.

Van Zyl-Smit's concern is that the test leaves traces of the TB protein in the system, which would then be picked up by the subsequent blood test, leading to a mistakenly positive diagnosis.

"The big question is, if you do the skin test, does it affect the blood test?" he asked.

As part of their own study, Van Zyl-Smit and his collaborators did three to four blood tests with some of the subjects, using two standard kits, to illustrate the natural variability in the response of the body's "helper" T-cells, which are produced when the body is under "attack" from bacteria, viruses or parasites.

Once the tests had established a baseline response level, Van Zyl-Smit conducted the skin test with the subjects.

He then also conducted a series of blood tests over three months.

As he suspected, he said, the second set of blood tests indicated that the subjects were carrying the TB bacterium – when in fact they were not.

He summed up the result as saying it meant "you shouldn't give a blood test after a skin test, which most international guidelines suggest you can. You need to interpret the blood tests cautiously".

Using both blood test kits, Van Zyl-Smit did show that there was a three-day window period after the skin tests, during which the response counts remained normal.

But by day four, he found, levels jumped sharply, and continued to climb for the next 81 days, when his tracking ended.

bronwynne.jooste@inl.co.za