

Systematic review, meta-analysis and economic modelling of molecular diagnostic tests for antibiotic resistance in tuberculosis

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Declared competing interests of authors: Peter J White reports grants from Medical Research Council (MRC) and from the National Institute for Health Research (NIHR) during the conduct of the study, and grants from Otsuka outside the submitted work. Francis Drobniowski reports grants from EU FP7, European Centre for Disease Control, the World Health Organization and the Technology Strategy Board, outside the submitted work. Ibrahim Abubakar reports grants from NIHR and MRC outside the submitted work. Joanne Lord reports grants from NIHR outside the submitted work.

Published May 2015

DOI: 10.3310/hta19340

Plain English summary

Molecular diagnostic tests for antibiotic resistance in tuberculosis

Health Technology Assessment 2015; Vol. 19: No. 34

DOI: 10.3310/hta19340

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Worldwide, there are almost 9 million cases of tuberculosis (TB) every year. The disease mainly affects the lungs and is spread person to person by breathing in droplets that contain the TB bacteria coughed up by someone else. TB can be cured but, if the bacteria have become resistant to the most effective drugs (isoniazid and rifampicin), the treatment can take up to 2 years, requires more toxic drugs and is less likely to be successful.

Although seeing bacteria in a person's phlegm under a microscope is a quick way of making a diagnosis, often the bacteria cannot be seen. Growing the bacteria requires special materials and, although less likely to miss a case of disease, this can take weeks. Scientists have developed new tests that give results within a day and can identify cases almost as well as growing the bacteria.

This report describes the performance, cost and likely benefit of rapid tests for drug-resistant TB. It brings together all that is currently known on the subject from the world's scientific literature and uses a computer model to explore what the impact of the tests could be (including the cost to the NHS). All of the new tests were good at telling when people had lung TB and when a case was likely to be cured by treatment with isoniazid and rifampicin. Faster diagnosis benefits patients by improving treatment results, including survival, can reduce costs of keeping patients in isolation until their diagnosis and may reduce spread of the disease between people.

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 5.116

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, The Cochrane Library and the ISI Science Citation Index and is assessed for inclusion in the Database of Abstracts of Reviews of Effects.

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This report

The research reported in this issue of the journal was funded by the HTA programme as project number 10/96/01. The contractual start date was in November 2011. The draft report began editorial review in May 2014 and was accepted for publication in February 2015. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health.

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