A prospective study into the impact of Xpert MTB/RIF on the management of tuberculosis in a low-resource high-burden Indian setting.

Introduction

• Xpert MTB/RIF is more sensitive than conventional smear microscopy for the diagnosis of tuberculosis.
• It is also more expensive, costing approximately 20 USD, as compared to just 0.15 USD per smear examination.
• In low-resource settings Xpert MTB/RIF use must be directed in the manner that will have the greatest impact on patient care.
• We set out to evaluate the impact of Xpert MTB/RIF on patient-management in our high-burden Indian setting where empirical TB treatment is commonplace.

Method

• Between February-July 2017 clinicians completed one questionnaire at the time of an Xpert MTB/RIF request and another when reviewing the result.
• Form 1 concerned pre-test treatment status and clinician confidence in the diagnosis.
• Form 2 concerned post-result management.

Results

• 45.9% of patients were on TB treatment empirically.
• Of 100 Xpert MTB/RIFs analysed, 60(60%) were positive for MTB.
• 17/55 (30.9%) of positive Xpert MTB/RIF results led to TB treatment being initiated in a patient not already on so empirically.
• Following a positive MTB result, all 17 patients not on treatment started and all 38 on so already continued.
• Following a negative MTB result, most patients not yet on treatment remained so (26/27 – 96.3%) but few already on treatment stopped (2/12 – 16.7%).
• Even where the clinician’s pre-test confidence in TB was low, 9/30(30%) of Xpert MTB/RIF results were positive.

Conclusions

• Despite empirical treatment being common, a substantial proportion of Xpert MTB/RIF results prompted treatment initiation.
• Negative results rarely prompted treatment cessation.
• Assuming drug resistance is not a concern, Xpert MTB/RIF may have the greatest impact where the clinician’s pre-test confidence in TB is lower such that empirical treatment is not being considered.
• This means positive results will lead to appropriate initiation of treatment and negative results are more likely to be relied upon to hold-off treatment.

“Would positive Xpert MTB/RIF results merely confirm TB in those already on Treatment empirically, and negative results are not relied upon to cease treatment then is it a cost-effective intervention?”