

Clinical Impact of Xpert MTB/RIF assay and Clinical Score Systems for Pulmonary Tuberculosis Diagnosis – Rio de Janeiro, Brazil

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Background: According to the 2013 WHO Recommendation, a single Xpert MTB/RIF (Xpert) test might be used as the initial diagnostic in pulmonary tuberculosis (PTB) suspects. Additional recommendations on screening for PTB in adults have been highlighted as a triage test strategy to be used before Xpert and other costly techniques. Nevertheless, few data are available on the clinical impact of these recommendations on patient outcomes. **Outcome measures:** Measure the proportion of bacteriologically confirmation; mean time and adoption of appropriate treatment using Xpert and score system followed by sputum smear microscopy (SSM) for PTB diagnosis. **Method:** From Jan 2012 to Nov 2013, 769 consecutive presumptive PTB patients at a secondary care clinic in Rio de Janeiro City, Brazil, were assessed. Those subjects were included in the following period interventions: **(P1)** 01-03/12 - a clinical score system followed by SSM (n=163), **(P2)** 04-10/12 - Xpert during pilot roll-out (n=232), **(P3)** 11/12-03/13 - Xpert incorporated as routine (n=123) and **(P4)** 04/13-11/13 - clinical score followed by SSM (n=251). **Results.** 167 patients (21.7%) received TB treatment. Confirmed TB cases occurred at P1, P2, P3, and P4 respectively in 81% (69-89), 78% (63-87), 87% (68-96) and 68% (53-80). Median time (days) to adopt TB treatment was 7.0 (IQR 5-12), 7.0 (IQR 5-14), 14.0 (IQR 10.-19.5) and 8.0 (IQR 6-8) for P1, P2, P3, P4 respectively. No statistical difference was found comparing those periods.. SSM were performed at 8th week after the enrollment of those initiated TB treatment in 11.6% (5/43), 7.7% (4/52), 0% (0/25) and 14.9% (7/47) at P1, P2, P3, and P4, respectively. **Conclusion.** Xpert testing and a clinical score systems resulted in similar proportion of confirmed PTB and median times for TB treatment initiation, while Xpert under routine conditions was associated with a larger interval until PTB was ruled out and reduced use of smear microscopy at monitoring TB treatment.

Keywords: tuberculosis, diagnosis, Xpert, clinical Score