Antimicrobial resistance

PO - (8544) - USE OF XPERT MTB/RIF AND FDA MICROSCOOPY RELATIVE TO MONTHLY CULTURES IN MONITORING MULTIDRUG RESISTANT TUBERCULOSIS PATIENTS IN BAMAKO, MALI

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Introduction: Xpert MTB/RIF is used extensively for the detection of rifampicin-resistant TB (RR-TB). RR-TB treatment monitoring is culture-based, although, in resource limited settings, access to TB culture is poor. Alternative methods are needed. We therefore conducted a pilot study to determine the performance of Fluorescein di-acetate vital staining (FDA), a microscopy-based test that shows viable bacilli, and GeneXpert threshold cycle value (Ct) changes when assessing culture conversion at the end of the intensive phase of RR-TB treatment.

Methods: Between December 2015 and April 2018, we prospectively followed patients with RR-TB during the 6-month intensive phase of a 21-month standardized WHO treatment regimen. Sputum was collected and tested monthly with Auramine, FDA, Xpert MTB/RIF, and culture (Manual MGIT). Culture was considered to have converted to negative when two consecutive cultures, taken at least 30 days apart, were negative, including at least one culture between 4-6 months of treatment.

Results: Forty-one patients were included in this study, 80% were male and 7% were HIV coinfect. Conversion could not be assessed in 12 (29%) patients. Among the remaining 29, 9 (31%) converted, and 11 (38%) did not convert. All 9 who converted on culture had a negative FDA, and most (6) had a Ct trend that showed a reduction of excreted DNA (increasing Ct trend). Three of these were still positive on Auramine (excretion of dead bacilli?). Of 11 patients with positive cultures, 8 tested negative on FDA, 5 tested “MTB not detected” on Xpert MTB/RIF, and another 2 showed a reduction of excreted DNA.

Conclusion: Results from culture, FDA, and Xpert MTB/RIF provide similar results among converters but contrasting results among non-converters. Longer follow-up time is needed to assess the value of these tests to predict treatment outcome.

Key words: Smear, Xpert Ct, culture, RR-TB, Mali.