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

Diarra, Bassirou (Mali)1;2, Aissata B (Mali)2; Decroo, Tom (Belgium)3; Keita, Marie L (Mali)1; Degoga, Boureima (Mali)1; Diallo, Fatimata (Mali)1; Fane, Bintou (Mali)1; Coulibaly, Gagni (Mali)1; Baya, Bocar (Mali)1; Somboro, Amadou (Mali)1; Sarro, Yeya Dit Sadio (Mali)1; Orsega, Suzanne (United States of America)4; Deun, Armand Van (Belgium)3; Dissou, Affolabi (Benin)5; Rigouts, Leen (Belgium)3; Murphy, Robert L (United States of America)6; Doumbia, Seydou (Mali)7; Diallo, Souleymane (Mali)1; De Jong, Bouke C (Belgium)3

1 - University Clinical Research Center (UCRC)-SEREFO-Laboratory, University of Sciences, Techniques and Technologies of Bamako (USTTB), Bamako, Mali; 2 - Laboratoire National de Référence des Mycobactéries (LNR), Institut National de Recherche en Santé publique (INRSP); 3 - Institute of Tropical Medicine Antwerp, Belgium; 4 - Collaborative Clinical Research Branch, Division of Clinical Research, National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA; 5 - Laboratoire National de Référence des Mycobactéries (LNR), Cotonou, Benin; 6 - Global Health, Northwestern University, Chicago, IL, USA; 7 - University Clinical Research Center (UCRC)-SEREFO-Laboratory, University of Sciences, Techniques and Technologies of Bamako (USTTB), Bamako, Mali;

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 Auroamine, 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 coinfected. 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 Auroamine (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.