Antimicrobial resistance

PO - (8182) - INVESTIGATING TREATMENT RESPONSE OF PATIENTS WITH CONFIRMED DRUG RESISTANT TUBERCULOSIS IN A HIV-1 ENDEMIC POPULATION IN WESTERN KENYA

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Background: In 2015, 10.4 million people worldwide had tuberculosis (TB) and 1.4 million deaths occurred, 400 000 of whom were HIV-positive, Sub-Saharan Africa accounted for 81% of these cases. In western Kenya, current data on the distribution of Rifampicin (RIF) and Isoniazid (INH) mutations is not available. The association of gene mutations with HIV infection and the treatment response of HIV infected and uninfected patients with TB are not known.

Objectives: This study determined the proportion of drug resistant Mycobacterium tuberculosis in sputum isolates and investigated the association of RIF and INH gene mutations with HIV status and monitored the treatment response of TB and HIV co-infected patients.

Methods: The present study was longitudinal and enrollment was done between 2012 and 2014 after the revision of the TB treatment regimen and patients with confirmed drug resistant TB were followed up for one year to establish the TB treatment response as confirmed by sputum smear microscopy.

Results: A total of 1381 new and 18 previously treated TB patients were enrolled. Sputum samples were cultured on Mycobacteriagrowth indicator tubes, drug susceptibility tests and line probe assay was performed to identify drug resistance and specific mutations on the rpo B, kat G and inh A genes. Discordant samples were sequenced. Conversion rate was calculated by finding the percentage of smear negative and positive patients at follow-up and initial visit, respectively. Regression analysis showed that RIF resistance was associated with HIV status ($P = 0.025$). Mann-Whitney tests revealed that the conversion time of HIV infected and uninfected patients with TB drug mutations was comparable ($P = 0.180$).

Conclusion: The study showed that INH mono-resistance was common. Detection of INH mono-resistance in TB endemic areas should be scaled-up as well as TB contact investigation studies to increase early detection of resistant strains.