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Prevalence of extra pulmonary tuberculosis using Gene Xpert-rapid molecular diagnostic test

Kuppamuthu Ramakrishnan

National Institute of Research in Tuberculosis – ICMR, India

Background: The Xpert MTB/RIF is an automated real-time polymerase chain reaction test for simultaneous detection of tuberculosis and rifampicin resistance.

Aims & Objectives: The aim of this study is to find out the prevalence and pattern of extra pulmonary tuberculosis using Gene Xpert among heterogeneous clinical samples and to elicit the variations refer to HIV +ve and HIV –ve status.

Methodology: Prospective observational study enrolled 1000 (991) patients of suspected pulmonary (63) and extra pulmonary (37) HIV/TB cases. Samples were collected in sterile containers and processed for Gene Xpert.

Results: A total of 991 respiratory specimens HIV+TB+ (N=652) and HIV-TB (N=339) were tested. Of the HIV+TB+ve group sputum, pus, pleural fluid, BAL and FNAC were 78 (69%), 16 (14%), 7 (6%), 7 (6.1%), 5 (4.4%) and 1 sample and HIV+TB-ve group 539 (95%), 10 (1.8%), 7 (1.2%), 7 (1.2%), 1, and CSF 1 observed Gene Xpert positive. In HIV-TB+ group were 85 (57%), 33 (22.2%), 14 (9.4%), 9 (6%), 3 (2%), 3 (2%) and 1 tissue sample and in the HIV-TB-ve group 127 (66.4%), 14 (7.3%), 17 (8.9%), 20 (10.4%), CSF 4 (2%), gastric fluid 2 (1%), 1 cervical fluid and 1 tissue sample observed Gene Xpert positive respectively.

Conclusions: Gene Xpert is useful for rapid detection of TB and identification of RIF resistance especially in a high prevalence country like India. The results are superior in extra pulmonary tuberculosis patients. However, test results must always be confirmed by culture and DST due to rising incidence of pre-XDR and XDR cases.

ramki72003@yahoo.co.in