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ePoster Viewing

Tuberculosis and other mycobacterial infections

Evaluation of the GeneXpert MTB/RIF assay for rapid diagnosis of tuberculosis and detection of rifampin resistance in pulmonary and extrapulmonary specimens: hospital-based study

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Background: Mycobacterium tuberculosis remains one of the most significant causes of death from an infectious agent. The GeneXpert MTB/RIF assay is a novel integrated diagnostic device for the diagnosis of tuberculosis and rapid detection of RIF resistance in clinical specimens. We determined the performance of the MTB/RIF assay for rapid diagnosis of tuberculosis and detection of rifampin resistance in smear-positive and smear-negative pulmonary and extra pulmonary specimens obtained from suspected tuberculosis cases.

Aim of the study

To determine the accuracy of the MTB/RIF assay for the diagnosis of tuberculosis and rapid detection of rifampin resistance in smear-positive and smear-negative pulmonary and extra pulmonary clinical specimens.

Material/methods: This was a hospital based cross-sectional study in which 142 samples were collected from November 2014 to OCT 2015 from clinically suspected tuberculosis both pulmonary & extra pulmonary patients. Out of 142 samples 57/142(40%) were detected positive and 85/142 (60%) were detected negative by gene expert .

The most common specimen were 50 Fluids, Sputum 27, BronchoAlveolar Lavage 22, Endobronchial Ultrasound 13, Pus 8, Tissue 20, Gastric lavage 2. Male to Female ratio 1.1 & average age 25 to 55 years.

Results: Out of 142 samples 58/142[40%] were smear negative & gene expert negative, and 42/142[30%] were smear positive & gene expert positive, 10/142 [7.5.%] were smear positive & gene expert negative, 32/142(22%) were smear negative and gene expert positive. Of these 32 samples 10 are BAL samples, 7 EBUS, 10 tissue samples, 5 CSF samples. Resistance to Rifampicin was seen in 10/142 (7%) of these cases.

Conclusions: The MTB/RIF test is less dependent on the user's skills, and routine staff with minimal training can use the test. It has a short turnaround time and simultaneously detects M. tuberculosis and RIF resistance in less than 3 h. As per the study Genexpert is more sensitive in detecting MTB

especially from extrapulmonary samples in fluids like CSF as compared to AFB smears from fluids. As per the Study, genexpert is unique in its sensitivity in detecting MTB than Non tuberculous Mycobacteria as compared to smears where Non tuberculous mycobacteria also can be seen. So it is ideal for the physician to order both AFB Smear and Gene Xpert for the diagnosis of tuberculosis in the patients prospective. Based on this systematic review, the World Health Organization now recommends Xpert over conventional tests for diagnosis of TB in lymph nodes, fluids and other tissues, and as the preferred initial test for diagnosis of TB meningitis.