Osuoha Chinyere Beatrice, Clin Microbiol 2018, Volume 7
DOI: 10.4172/2327-5073-C1-033



# Comparative study between GeneXpert and smear microscopy for the diagnosis of tuberculosis in samples of patients suspected of pulmonary tuberculosis: The case study of General Hospital, Awo-Omamma Imo State, Nigeria

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Tuberculosis (TB) caused by *Mycobacterium tuberculosis*, has remained a major scourge of humanity all over the world, with the greatest mortality occurrences noted in developing countries. The cannot-be-overemphasized burden of TB in Nigeria is among the highest in Africa. The study on hand was therefore aimed at comparing Cepheid GeneXpert MTB/RIF assay for direct detection of *Mycobacterium tuberculosis* complex (MTBC) and Rifampin (RIF) resistance with the traditional smear microscopy method - the ZN technique. Sensitivity and specificity of diagnostic yields were high points of comparison. A carefully designed cross-sectional study was drawn and executed at the General Hospital, Awo-Omamma, covering patients' inflow from August 2016 to May 2017. Amongst the numerous patients presenting, a total of 120 samples were collected from patients with highest pulmonary concerns, having been assessed prognostically. 62 (74.4%) were males, 58 (25.6%) were females and all having mean ages of 42.2±16 years and about 30 patients (36%) had chronic lung diseases. Out of the 120 samples examined, 36 samples (43.2%) were MTBC positive by smear microscopy while 42 (50.4%) were positive by GeneXpert assay. Only one sample showed false-negative result for GeneXpert. Placing both methods (GeneXpert and Smear microscopy) side-by-side, GeneXpert gave 85% sensitivity and 98.5% specificity. GeneXpert indeed detected 6 (7.2%) additional positive cases as compared to smear microscopy. Only five clinical isolates of the entire patients were resistant to Rifampin. The study therefore concluded that GeneXpert was a better and more reliable diagnostic tool compared to smear microscopy and can significantly reduce false-negatives and very interestingly, rules out the unnecessary delays often experienced hitherto with Smear microscopy in treatment initiation.

## Biography

Osuoha Chinyere Beatrice has completed her BMLS and MPH degrees from the Imo State University, Nigeria. She is currently the Head of the Medical Laboratory Services of General Hospital, Awo-Omamma, a subsidiary of Imo State Hospitals Management Board, Nigeria. She has many peer-reviewed scholarly works and has been the Chairperson of the Hospital's Staff Welfare Committee.

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