

European Respiratory Society Annual Congress 2013

Abstract Number: 169

Publication Number: P4439

Abstract Group: 10.2. Tuberculosis

Keyword 1: Tuberculosis - management **Keyword 2:** Asthma - management **Keyword 3:** Allergy

Title: BACTEC versus Lowenstein-Jensen media for isolation of mycobacterium tuberculosis

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Body: Background: The BACTEC medium has consistently demonstrated faster and increased recovery of Mycobacterium tuberculosis from respiratory specimens of patients with pulmonary tuberculosis than conventional culture methods. Objective: to assess the efficacy of the BACTEC medium in supporting growth of Mycobacterium tuberculosis, to determine the incubation time required for detection of growth in both culture media in relation to inoculum size and to compare cost benefits of the BACTEC system with the conventional LJ culture. Methods: case-control study was done on 50 PTB patients admitted to Chest Department, Menoufiya University Hospital (Egypt) from January to December 2012. All the clinical respiratory specimens received were subjected to direct smear microscopy by Ziehl-Neelsen (ZN) staining method, as well as inoculated into the BACTEC and LJ medium. Result: The overall recovery rate was 68% by BACTEC and 56% using Lowenstein-Jensen (LJ) medium. The combination use of both media produced positive mycobacterial culture yield (84%). for smear negative specimens an average detection time for Bactec media was found to be 13.3 days and 15.3 days as against 31.2 days and 35.3 days by LJ method for respiratory specimens (BAL and sputum) respectively. The BACTEC culture was more expensive and required more medical technologists' time. Conclusions: The BACTEC medium is a good for the diagnosis of smear negative tuberculosis. It demonstrated faster and increased recovery of Mycobacterium tuberculosis of patients with pulmonary tuberculosis than conventional culture methods. The combined use of BACTEC and LJ gives better positive culture yield.