A Comparative Study Between Different Laboratory Methods For Diagnosis Of Pulmonary Tuberculosis

Thesis

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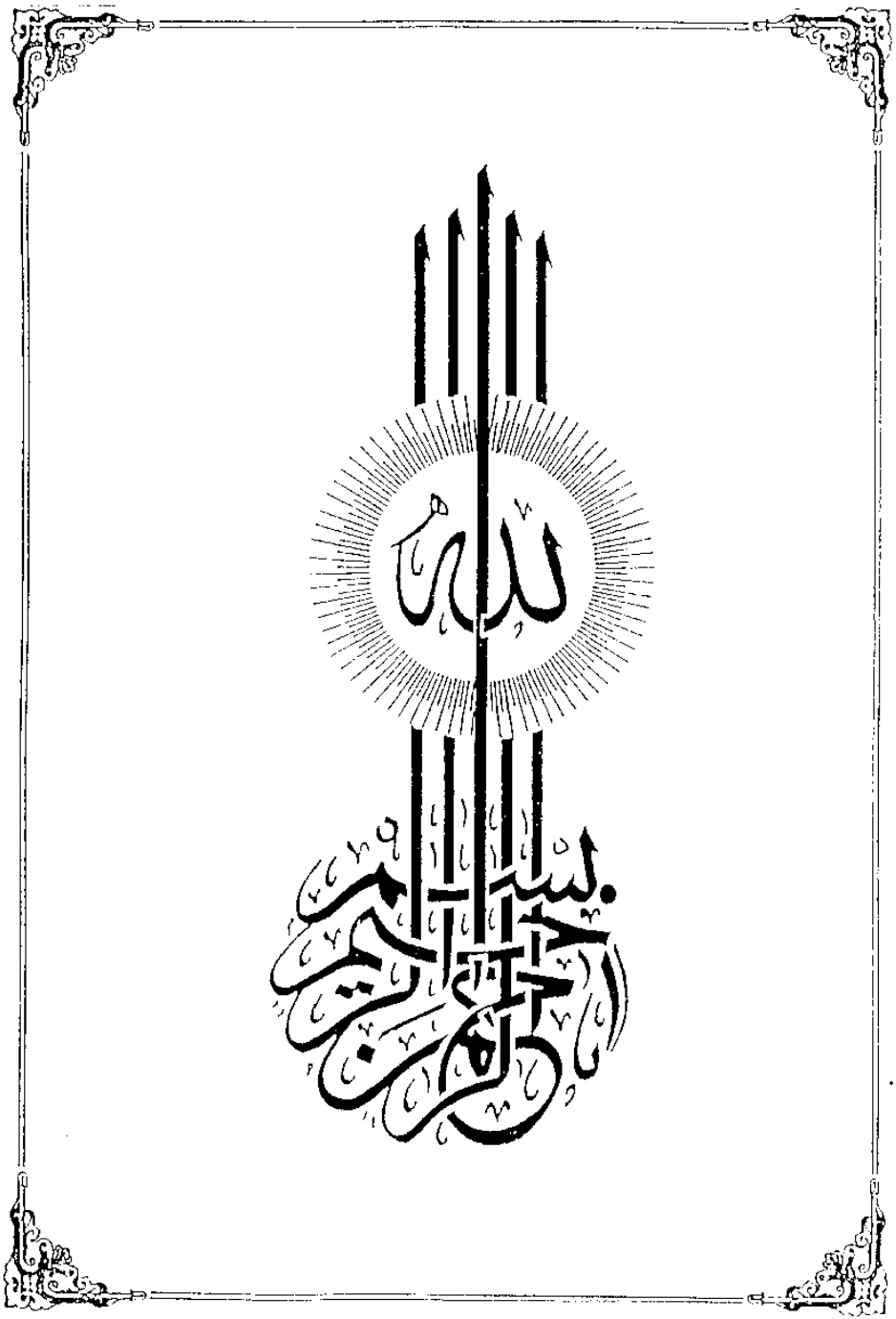

بسم الله الرحمن الرحيم

وفوق كل ذي علم عليم

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Abstract

This study aimed to provide patients with fast and accurate results for diagnosis of mycobacterial disease and to compare and contrast LJ media, biphasic culture media and BACTEC system for the rate of recovery, time needed to detect positive mycobacterium tuberculosis culture, contamination rate and cost benefit relationship. The study included 65 patients attending Abbassia Chest Hospitals and Ain-Shams University Hospitals. All patients were diagnosed as pulmonary tuberculosis on clinical and radiological bases. Morning sputum samples were examined microscopically for acid fast bacilli by Ziehl Neelsen and cold method which showed 100% agreement. Microscopic examination of specimens after digestion decontamination and concentration showed a decrease in the number of acid fast bacilli seen per slide. The rate of isolation of mycobacterium tuberculosis was higher by BACTEC (69.2%) than LJ (60%) and biphasic culture media (49.2%). The mean time for isolation of mycobacterium tuberculosis by BACTEC (9.8 days ± 3.3 for smear positive specimens and 19.4 days ± 4.5 for smear negative specimens) was shorter than that for LJ (20.1 days ± 4.3 for smear positive specimens and 29.5 days ± 3.2 for smear negative specimens) and biphasic culture media (19.3 days ± 3.7 for smear positive specimens and 30.4 days ± 3.2 for smear negative specimens). Rate of contamination of BACTEC 2% was lower than that of LJ and biphasic culture media. Antibiotic resistance in patients with negative history of previous antituberculous intake was recorded as follows; 26% for streptomycin, 11% for rifampin 57% for ethambutol and 37% for isoniazide. Antibiotic resistance in patients with positive history of previous antituberculous intake was as follows; 70% for streptomycin, 50% for rifampin, 50% for ethambutol and 70% for isoniazide. The study concluded that cold staining method is a promising technique that can be used as a bed side test and BACTEC system has a higher recovery rate, lower detection time, and lower contamination rate than LJ and biphasic culture media, but it is more costy than both.

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