

Original Paper

Diagnostic value of high resolution computed tomographic scan in active pulmonary tuberculosis

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Abstract

Background and Objective: Since accurate and quick clinical and paraclinical diagnostic methods are not available, in some cases diagnosis of active pulmonary tuberculosis occurs after considerable time from the onset of disease. This study was designed to determine the diagnostic value of High Resolution Computed Tomographic (HRCT) scan in active pulmonary tuberculosis, in Gorgan, Golestan province, North of Iran.

Materials and Methods: This diagnostic screening study was carried out on 135 (79 male and 56 female) hospitalized patients suspected with active pulmonary tuberculosis, and HRCT was used in their course of treatment as recommendation of their clinician. The patients were chosen from 5th Azar hospital during 2009-10. Also it should be mentioned that patients were selected on availability bases, and they were examined by smear, and sputum culture. The patients with negative smear and culture were set up as true healthy group (64 subjects). The lung or small nuddles in HRCT was considered as proper position of lung involvement in active lung pulmonary. The HRCT findings between the case group (71 subjects) and healthy group were compared. According to HRCT findings, the sensitivity and specificity were determined for each patient. Data were analyzed using SPSS-16 and Chi-Square test.

Results: In this study, sensitivity, specificity, positive predictive value and negative predictive value of HRCT in active pulmonary tuberculosis were equal to 97.2%, 71.9%, 79.3% and 95.8% respectively. Involvement of upper and middle lobe of the right lung and upper lobe of the left lung were significantly higher than the control group ($P < 0.05$).

Conclusion: This study showed that HRCT has high sensitivity and specificity in diagnosis of active pulmonary tuberculosis and can be used as a quick diagnostic way in active pulmonary tuberculosis, especially in patients with strong clinical suspicion and negative smear.

Keywords: Active pulmonary tuberculosis, High resolution computed tomographic scan, Smears of sputum, Culture of sputum

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