

Developing HRCT Criterion to Predict the Risk of Pulmonary Tuberculosis

Authors : Vandna Raghuvanshi, Vikrant Thakur, Anupam Jhobta

Abstract : Objective: To design HRCT criterion to forecast the threat of pulmonary tuberculosis. Material and methods: This was a prospective study of 69 patients with clinical suspicion of pulmonary tuberculosis. We studied their medical characteristics, numerous separate HRCT-results, and a combination of HRCT findings to foresee the danger for PTB by utilizing univariate and multivariate investigation. Temporary HRCT diagnostic criteria were planned in view of these outcomes to find out the risk of PTB and tested these criteria on our patients. Results: The results of HRCT chest were analyzed, and Rank was given from 1 to 4 according to the HRCT chest findings. Sensitivity, specificity, positive predictive value, and negative predictive value were calculated. Rank 1: Highly suspected PTB. Rank 2: Probable PTB Rank 3: Nonspecific or difficult to differentiate from other diseases Rank 4: Other suspected diseases • Rank 1 (Highly suspected TB) was present in 22 (31.9%) patients, all of them finally diagnosed to have pulmonary tuberculosis. The sensitivity, specificity, and negative likelihood ratio for RANK 1 on HRCT chest was 53.6%, 100%, and 0.43, respectively. • Rank 2 (Probable TB) was present in 13 patients, out of which 12 were tubercular, and 1 was non-tubercular. • The sensitivity, specificity, positive likelihood ratio, and negative likelihood ratio of the combination of Rank 1 and Rank 2 was 82.9%, 96.4%, 23.22, and 0.18, respectively. • Rank 3 (Non-specific TB) was present in 25 patients, and out of these, 7 were tubercular, and 18 were non-tubercular. • When all these 3 ranks were considered together, the sensitivity approached 100% however, the specificity reduced to 35.7%. The positive likelihood ratio and negative likelihood ratio were 1.56 and 0, respectively. • Rank 4 (Other specific findings) was given to 9 patients, and all of these were non-tubercular. Conclusion: HRCT is useful in selecting individuals with greater chances of pulmonary tuberculosis.

Keywords : pulmonary, tuberculosis, multivariate, HRCT

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