

ABSTRACT

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In DOTS (Direct Observed Therapy, Shortcourse) strategy, direct sputum smear becomes a standard diagnosis method. The objective of this study is to evaluate diagnosis of pulmonary tuberculosis on the basis of clinical symptoms, microscopic and radiological examinations of acid fast bacilli by using PCR test. Samples including in this study were patients with suspect pulmonary tuberculosis with negative smear of acid fast bacilli. At the end of this research, it can be known how many patients considered to be tuberculosis, but with negative smear and positive rontgen results, that generate positive results with PCR, and how many of those considered as nontuberculosis patients with negative smear and negative rontgen results, which give positive results with PCR.

PCR technique to be used in this research is *Single PCR* with the target of amplification is a segment in fragment IS 6110 along 123 base pairs. These primers are specific only to *M. tuberculosis complex*.

From patients with negative smear and positive rontgen were diagnosed as pulmonary tuberculosis and patients with negative smear and negative rontgen were diagnosed as non tuberculosis apparently indicate a different description. In sample with negative rontgen results, there are 48 patients, 16 people of them turn to be positive after being tested with PCR (33,33%), and from sample with positive rontgen results, there are 32 patients, 30 of them remain positive after being tested with PCR (93,75%). Thus, it can be seen that of 80 negative acid fast bacillus before PCR test, there are 32 patients (40%) diagnosed to be tuberculosis based on the supporting rontgen results. After PCR test, there are additional 16 positive patients (16 of 80 ; 20%) with PCR, so that number of patients diagnosed to be tuberculosis become 48 (48 of 80; 60%).

From samples to be gathered, it can be seen that number of patients who are diagnosed lastly as tuberculosis with negative smear before PCR test are 32 (40%). This is consistent with data from RSUD Dr. Soetomo in 2001 where number of patients who were diagnosed as tuberculosis with negative smear were 51%.

From research results it could be observed that those 48 patients (60%) with negative rontgen results and were not treated as tuberculosis patient, in fact, 16 (20%) of them produced positive results with PCR test, indicating that there were *M. tuberculosis* bacteria in the sputum. Result of PCR test having high sensitivity are expected to provide additional alternatives considered to undertake the diagnose of pulmonary tuberculosis.

Key word : *M. tubeculosis*, pulmonary tuberculosis, smear, rontgent and PCR