How useful is DNA amplification (PCR) for diagnosis of tuberculosis in Sri Lanka

A definitive diagnosis of tuberculosis (TB) depends on culture of mycobacteria, but the slow growth of the organism delays the diagnosis. The objective of this study was to optimise a DNA amplification method to detect *M.tuberculosis (M.tb)* from clinical samples and to study applicability of such a technique to a developing country like Sri Lanka.

A test based on the PCR was optimised and used for the detection of M.tb in clinical samples. In this test a 514 bp sequence of the repetitive insertion sequence (IS) 6110 was amplified and detected by agarose gel electrophoresis.465 Specimens were examined by smear, culture and PCR. Of the samples from 371 patients with suspected extrpulmonary tuberculosis, the PCR was positive for 75 samples, microscopy 6, and culture 5. From 94 patients with suspected pulmonary TB, the
PCR assay ws positive for 10 samples; microscopy 3 and culture, 2.45 patients were followed up and from the 25 PCR positive patients, 23 responded to anti TB therapy. Based on clinicla outcome the sensitivity of the test ws 92% and specificity was 95%.

In conclusion, DNA amplification is a rapid and accurate method with a high degree of sensitivity and specificity for the detection of M.tb. The method is more useful for the diagnosis of extra-pulmonary disease. However PCR is an expensive technique to use in a routine laboratory in Sri Lanka. Technical expertise and high quality control standards are required to prevent/detect contamination leading to false positive results.