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Title: Cartridge based nucleic acid amplification technique (CBNATT) for diagnosis of rifampicin resistance from sputum smear in revised national tuberculosis control of India (RNTCP) – Implications of preliminary data

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Body: CBNAAT offers very high sensitivity and specificity equivalent to solid culture and DST. It is very easy to perform. In RNTCP new patients of pulmonary tuberculosis are given Category-I regimen consisting of 2 months of Rifampicin (R), Isoniazid (H), Pyrazinamide (Z) and Ehthambutol (E), followed by 4 months of R & H. However, failure, retreatment and defaulted cases on category-I are given Category-II regimen of 2 months of Streptomycin (S),RHZE followed by 1 Month of RHZE and 5 months of RHE. There is a concern that addition of Streptomycin only in category-II tantamount to adding single drug in category-I failure which can lead to amplification of drug resistance and can also lead to spread of drug resistant TB and additional morbidity and mortality. CBNATT was undertaken at our center in 377 patients suspected of MDR-TB like failure, retreatment sputum positive at 4th month, contact of any known MDR-TB case, sputum positive or negative at diagnosis in retreatment case and sputum positive at follow up. Preliminary data revealed Rifampicin sensitivity and resistance in 261 (69.23%) and 64 (16.97%) cases respectively. All 64, R resistance cases were started MDR treatment and 261 (69.23%) R sensitive cases were started category-II treatment. Thus introduction of CB-NATT in category-I failure or cases suspected of MDR-TB lead to early identification of R resistance/sensitivity. It helped in starting appropriate treatment in R resistant/sensitive cases in the form of MDR/ category-II respectively. It brought confidence in treating physicians.