Molecular biology technique combined with Fine needle aspiration cytology revealing the diagnostic dilemma in tubercular lymphadenitis cases

V. Gupta¹*, A. Bhake²

¹ Jawaharlal Nehru Medical College, Wardha, Maharashtra, India
² Jawaharlal Nehru Medical College, Wardha, India

**Background:** Extra-pulmonary Tuberculosis in the form of tubercular lymphadenitis (TBLN) accounts for 30-40% of Tuberculosis cases. Tuberculosis lymphadenitis is not always associated with the clinical symptoms like fever, cough, weight loss etc which makes its diagnosis difficult. Moreover, conventional investigations like culture and Ziehl Neelsen staining (ZN) used for providing the bacteriological evidence of TBLN have their own limitations. These cases therefore remain undiagnosed and become worse when left untreated. Such cases have potential to spread tuberculosis and thus are problem areas to the public health. We aim to reveal the diagnostic dilemma by molecular biology technique based on real-time Polymerase chain reaction (PCR) with the hypothesis that Real-time PCR performed on lymph node aspirates will be able to diagnose tubercular lymphadenitis cases which lack clinical and bacteriological evidence of tuberculosis on conventional methods.

**Research problem with approach**

**Methods & Materials:** Cross sectional study: Fifty patients with enlarged lymph node, enrolled in this study were taken for cytological evaluation to Department of Pathology, Jawaharlal Nehru Medical College, Wardha, India. Informed consent was taken. Lymph nodes were subjected to Fine needle aspiration cytology (FNAC); aspirates obtained were used for studying morphology, ZN staining, culture and TaqMan based real time PCR on target insertion sequence IS6110. The results were recorded and data analyzed in Software package for statistical analysis.

**Results:** Female to male ratio was 1.3:1. Most common site among lymph nodes was cervical in 72% cases. Morphologically necrotizing granuloma was seen in 20/30 cases diagnosed TBLN on Fine needle aspiration cytology, ZN staining was positive only in 15 cases, culture was positive only in 20 cases and TaqMan based real-time PCR findings were positive in 35 cases. Ten cases missed for TBLN on conventional methods (culture and ZN stain) were diagnosed by FNAC and PCR. Five cases missed for TBLN on FNAC were diagnosed by PCR. Diagnostic accuracy of real-time PCR was found to be 100%.

**Conclusion:** A positive real-time PCR finding on aspirates of lymph nodes reveals the diagnostic dilemma in tubercular lymphadenitis cases where there was no clinical suspicion and bacteriological proof was lacking. In addition real time PCR helps to diagnose the cases missed on morphology.

http://dx.doi.org/10.1016/j.ijid.2016.02.366

**Baseline titres of Salmonella agglutinins in the healthy population in Sri Lanka**

C. Illapperuma¹, S. Agampodi ², E.M. Corea ³,*

¹ Rajarata University of Sri Lanka, Colombo, Sri Lanka
² Faculty of Medicine and Allied Sciences, Saliyapura, North Central Province, Sri Lanka
³ University of Colombo, Colombo, Sri Lanka

**Background:** Enteric fever is endemic in Sri Lanka. The Widal test is still commonly performed for diagnosis. Due to difficulty in obtaining acute and convalescent phase sera to detect a four-fold rise in titre, a single Widal test is preferred. A significant number of healthy persons also carry antibodies to Salmonella Typhi and Paratyphi A. Therefore, it is necessary to determine the baseline Salmonella O, H and AH agglutinin titres in the general population to determine cut off values that denote acute infection. Titres beyond this cut off value could be regarded as significant and used for the diagnosis of enteric fever.

**Methods & Materials:** Cross sectional study: Five hundred and one (501) serum samples from healthy blood donors, collected from 31 blood banks across Sri Lanka in 2012/13, were tested for Salmonella O, H, and AH agglutinins. The tube agglutination test was used with dilutions ranging from 1:20 to 1:1280. Age and sex of study participants were recorded.