



Gene Xpert Ultra assay - A Rapid molecular diagnosis ofTubercular Lymphadenitis -A Prospective Study in Western India

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Introduction

- The most common clinical presentation of Extra pulmonary tuberculosis (EPTB) is tubercular lymphadenitis.
- It is a challenging task to diagnose it as it resembles other granulomatous conditions pathologically.
- TB culture remains the gold standard for definitive diagnosis but it takes longer time.
- Rapid and early diagnosis of EPTB by using Molecular methods like Gene Xpert Ultra helps to improve the turn around time .
- This study was conducted to analyse the utility of Gene Xpert Ultra in diagnosis of Lymph node tuberculosis in high TB burden geography.

Results

- A total of 85 patients Lymph node were included, of which 60% had cervical LN, 15% abdominal LN, 12% mediastinal LN, and 15% others.
- Twenty eight percent had disseminated form of TB. Most of the patients (97%) HPE findings of granulomatous inflammation of which only 20% were ZN stain Positive.
- TB culture (BACTEC) showed positivity of 56.47% in our study. MTB was detected in 69% by GeneXpert Ultra & none of them showed Rifampicin resistance.
- The Sensitivity, specificity, PPV & NPV for GeneXpert Ultra were found 85.4%, 51.3%, 25.06% and 94.8% respectively when compared to gold standard, TB culture.

Aims & Objectives:

We performed retrospective review of patients with confirmed tuberculosis lymphadenitis during 1 year period in 2021 to 2022 in tertiary care centre, AIIMS Jodhpur.

We assessed clinical, radiological , microbiological, biochemical parameters along with treatment provided and outcomes of the patient.

Conclusion

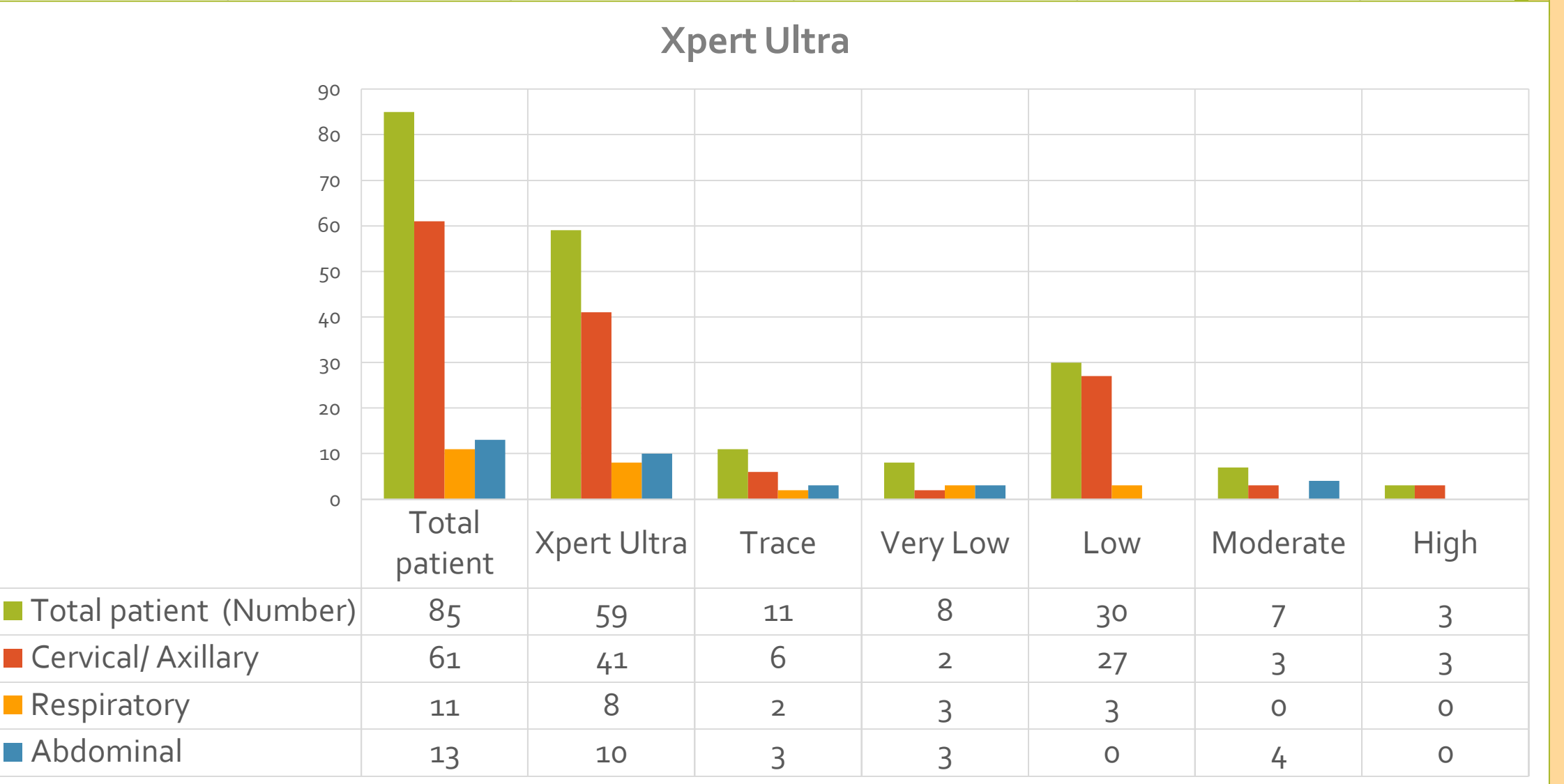
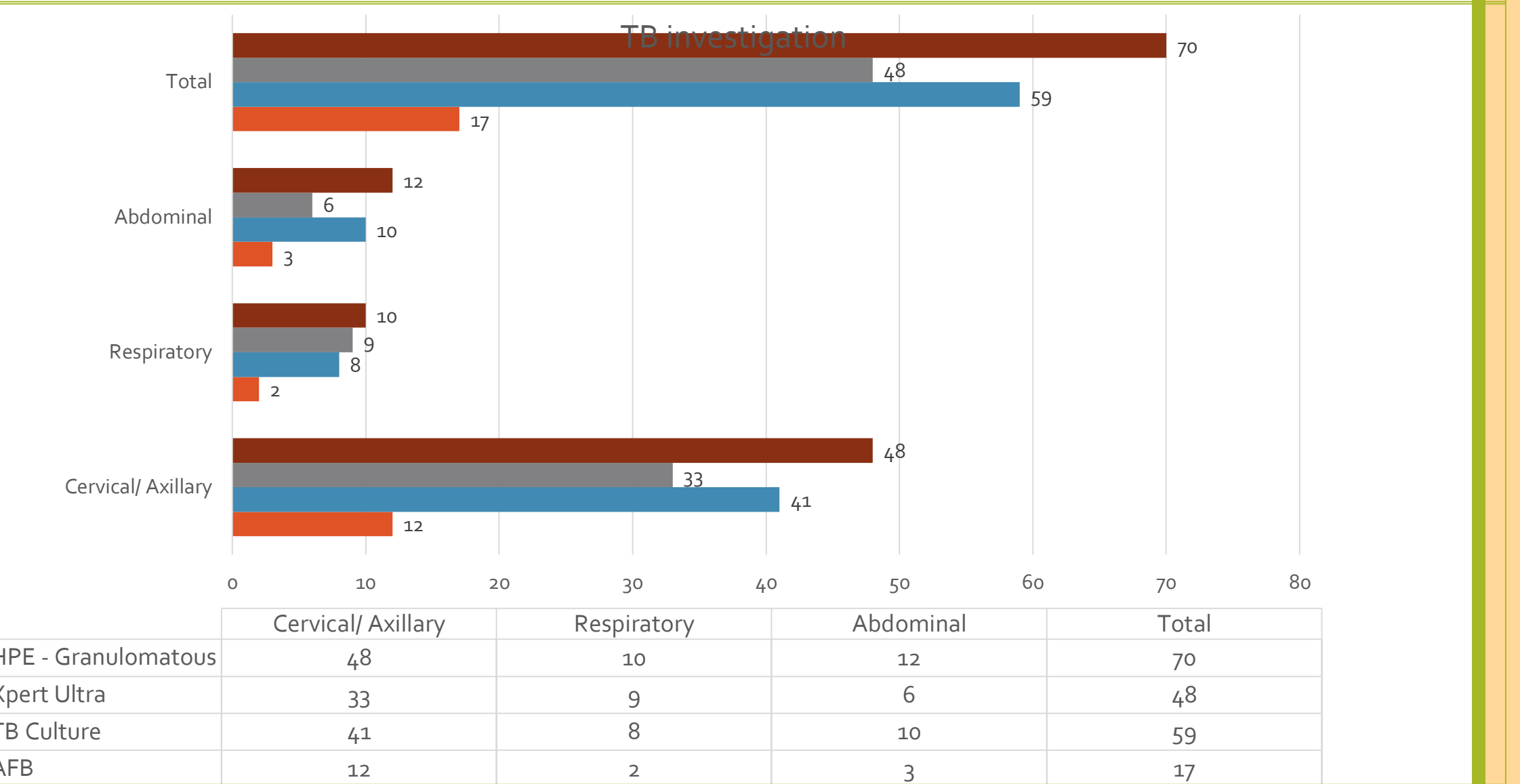
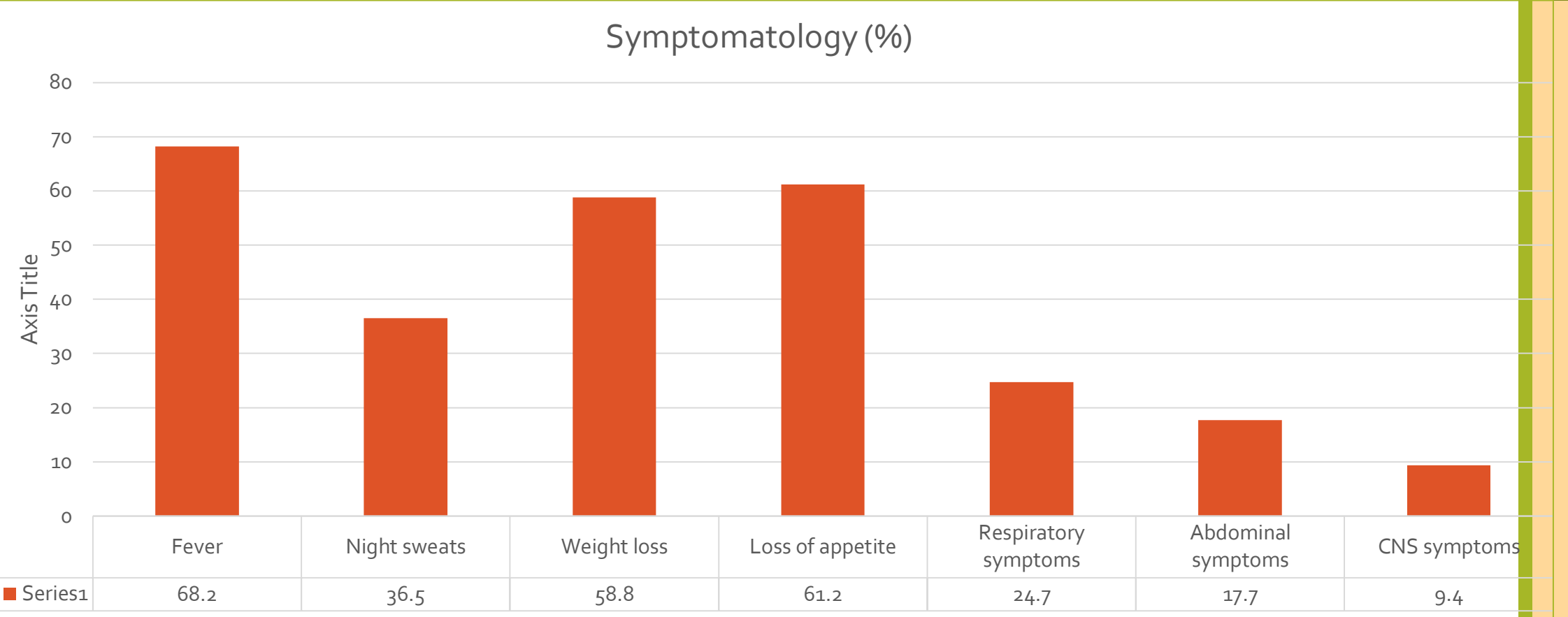
- In our study GeneXpert Ultra showed excellent sensitivity and negative predictive value for the diagnosis of TB Lymphadenitis.
- Further this method detects Rifampin sensitivity which is crucial for initiation of appropriate antitubercular drugs.

Materials & Method:

- This was a prospective observational study which included the suspected cases of Tubercular lymphadenitis at a tertiary care hospital in western India.
- The samples were collected by excision biopsy & were subjected to Ziehl Neelson (ZN) stain, GeneXpert Ultra, TB culture and Histopathology (HPE).
- The sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of GeneXpert Ultra were analysed in comparison with culture results.

References:

1. Chen HK, Liu RS, Wang YX, Quan EX, Liu YH, Guo XG. Xpert MTB/RIF Assay for the Diagnosis of Lymph Node Tuberculosis in Children: A Systematic Review and Meta-Analysis. J Clin Med. 2022 Aug 8;11(15):4616. doi: 10.3390/jcm11154616. PMID: 35956230; PMCID: PMC9369894.



XPRT ULTRA (over all)	Percentage	XPRT ULTRA	Percentage
Sensitivity	85.4	PPV	25.06
Specificity	51.3	NPV	94.8