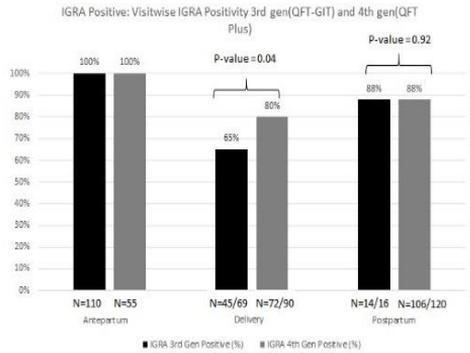


## Background

- Pregnant women have twice the risk of tuberculosis (TB) in parturam and immediately postpartum<sup>2</sup>.
- Immune changes compromise both the TB symptom screen and latent TB tests<sup>1</sup>.
- The study's objective was to determine if 4<sup>th</sup> generation QuantiFERON<sup>®</sup> Gold Plus (QFT-Plus) which assesses both CD4 and CD8 responses, is more reliable than 3<sup>rd</sup> generation QuantiFERON<sup>®</sup> Gold In-tube (QFT-GIT), which only assesses CD4 responses.

## Results



Of 165 women with TBI during pregnancy, 110 (67%) tested with QFT-GIT and 55 (33%) with QFT-Plus during at least one visit.

- QFT-Plus returned higher proportion of positive results at delivery (80% vs. 65%,  $p = 0.04$ ) though no difference in women during pregnancy or 6 months postpartum (**Figure**).
- The change in proportion positive between antepartum and delivery significantly decreased for QFT-GIT (100% vs 65%,  $p \text{ value} < 0.001$ ) but not QFT-Plus (100% vs 80%,  $p \text{ value} = 0.12$ ).
- Proportion positive recovered at postpartum with both assays.
- Longitudinal subset tested by QFT-Plus showed no significant difference in proportion of TBI at all time points (84% vs 66% vs 68%,  $p = 0.61$ ), however our sample size was small.

## Design/Methods

**Study Design:** From May 2016, we conducted a longitudinal prospective observational cohort study of HIV-infected and HIV- uninfected pregnant women with TB infection (TBI)

**Study site:** Sassoon Government Hospital, an urban, public hospital in Pune, India.

**Study procedures:** Women with TBI (i.e. positive QFT-GIT or QFT-Plus\*) at entry were enrolled with repeat testing at delivery and 6 months postpartum.

**Analysis:** The proportion of TB infection was cross-sectionally compared between both tests at each timepoint using univariable analysis. We also performed a longitudinal analysis of the performance of QFT-Plus in the subset of women tested only by QFT-Plus at all three time points.

\* Switch was made from QFT-GIT to QFT-Plus in Sept 2017 because QFT-GIT was no longer available from manufacturer in 2018.

## Conclusions

The QFT-Plus assays showed consistent performance across the stages of pregnancy suggesting that:

- (1) CD8 cells do not decrease as much as CD4 cells during pregnancy; and
- (2) In pregnant and postpartum women, 4<sup>th</sup> generation QFT-Plus may be more reliable compared to 3<sup>rd</sup> generation QFT-GIT, especially at delivery.

TB endemic countries should consider integrating QFT-Plus into antenatal care to provide targeted TB prevention therapy.

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