Antero-posterior thickness of Thymus in second trimester of pregnancy measured by 2D ultrasound: Normogram for Indian population

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Introduction
The thymus has been associated with chromosomal abnormalities like DiGeorge Syndrome and now there are reports of association with prolonged premature rupture of membranes and intrauterine growth restriction (IUGR).

We have carried out this study to establish a normal reference range of fetal thymus measurement in uncomplicated pregnancy of the thymus antero-posterior thickness (APT) in second trimester of pregnancy by 2D ultrasound in Indian fetuses.

Methods
- Prospective and cross sectional study.
- Period - January 2017 to September 2017
- The anteroposterior thickness of thymus was measured by the midline between aorta posteriorly to the posterior chest wall anteriorly in consecutive normal fetuses
- GE Volusion E10-BT/E8-BT 13.5 ultrasound device with a transabdominal C5-9, 9L, RAB6-D transducers used for measurement

Results
- The measurement was possible in all 330 fetuses.
- The predicted mean and 1st, 5th, 10th, 50th, 90th, 95th and 99th centile reference ranges of thymus area measurements at each gestational age are shown in table and graph below.
- APT increased with increasing gestational age in a linear manner

Regression equations APT = 0.018x² + 0.0857x - 1.1389

Discussion
This will help us identify a possible association of thymic hypoplasia with DiGeorge syndrome and trisomy 18 and 21

Conclusion
- This study presents normogram of ultrasound measurements of fetal thymus in Indian population