

4769 : Detection of fetal structural defects in the first trimester with a structured protocol and newer markers – an 18-years' experience of regular audits

Jain A, Muniraj V, Acharya V, Shettikeri A, Radhakrishnan P, Bangalore Fetal Medicine Centre, India



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Introduction:

There has been a steady improvement in detection of fetal defects in the first trimester over the last two decades. As technology and knowledge advances, potential checkpoints, and markers to improve the overall detection rate for structural defects can be incorporated only by performing regular audits.

Objectives:

Primary Objective : To re-audit the performance of the FTS in detection of structural defects

Secondary Objective : To assess the system-wise detection rate (DR) of structural defects and identify areas for improvement

Methodology:

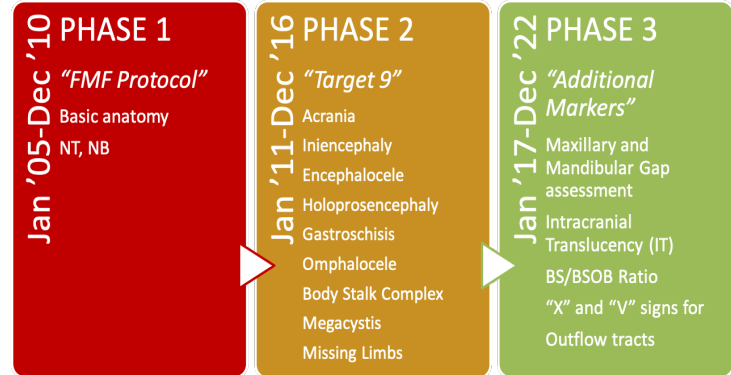
- Retrospective comparative study of prospectively collected data from a single tertiary fetal care referral centre during Jan 2005 to Dec 2022
- 14,167 singleton pregnancies who underwent first trimester (1T) screening between 11⁺⁰ – 13⁺⁶ weeks with known follow ups were included. All scans were performed by FMF certified operators and were documented on Astraia fetal database software
- Audit was done in 3 phases with subsequent modification to screening protocol
- All aneuploidies were excluded from the study

Results

Major Defects overall = 953/14,167
(6.7%)
Defects on 1T = 613/ 953 = 64.3%

Most common defect in 1T =
Cardiac (23%)

Phase-wise improvement in DR of structural defects. "TARGET" 9
and other systemic defects, in particular *cardia and spine*



Conclusions:

- Structured protocol for screening of major defects should be considered
- Must look for "Target 9" anomalies in the FTS
- Potential for improvement in earlier detection of spinal, cardiac and facial abnormalities
- Regular audit and modification of one's practice can improve DR for structural defects in the FTS

DR	Phase 1	Phase 2	Phase 3
Structural Defects	44%	65.2%	79%
Target 9	90.5%	96.6%	97.6%
Major CHD	56.2%	63.3%	80.9%
Spine	50%	70%	90.9%

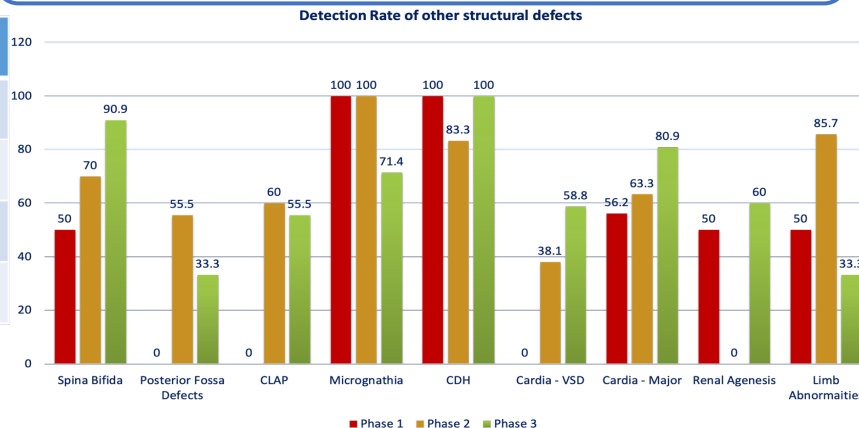


Table 1 : Phase-wise distribution of Detection Rate (DR) of major structural defects across the study period

Reference: Syngelaki, et al, Diagnosis of fetal non-chromosomal abnormalities on routine ultrasound examination at 11–13 weeks' gestation. *Ultrasound in Obstetrics & Gynecology*

Correspondence:
drprathima@bangalorefetalmedicine.com