**Screening fetal echocardiography in the first trimester - a feasibility study**

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**Objectives:** To evaluate the feasibility of a screening first trimester fetal echocardiography in antenatal women at a tertiary health facility.

**Methods:** This is a prospective study of patients presenting to the Obstetric Ultrasound unit of PSG Institute of Medical Sciences and Research at 11-13+6 weeks from 1/2/18 to 31/3/18. The scans done by a single operator certified by FMF were analysed and scored. Apart from the imaging protocol for Nuchal translucency scans, 2D and colour Doppler evaluation of the four chamber view (4CV), three vessel trachea view (V sign) and crossing over of outflow tracts (X sign) were included. Transvaginal ultrasound (TVS) was used in cases where optimal imaging was difficult by transabdominal ultrasound (TAS). Maternal factors like BMI, history of past surgeries were noted to assess their effects on optimal imaging. The images were scored by a second reviewer and feasibility rates calculated.

**Results:** Ultrasound scans of 52 fetuses (50 singleton + 1 twin) were included in the study. 5 parameters (4CV, V sign, X sign, Tricuspid Doppler (TV), Ductus venosus (DV)) were scored to a maximum of 8 points. Scores <2 were deemed infeasible/ non informative; 3-7 feasible but suboptimal; 8 was optimal. The average time taken for TAS was 15.14 min (95% CI 13.48-16.8; SD 6.04 min); TVS + TAS (n=5) was 24.4 min; multiple sittings (n=6) was 20.5 min. The mean time taken for the scan assuming ideal conditions was found to be 12.8 min (n=39). Factors affecting optimal imaging were BMI > 25 (n=8), previous Caesarean (n=3), multiple fibroids (n=1), fetal position (n=11).

**Figure 1&2. 4 CHAMBER VIEW**

**Figure 3 & 4. 3 VESSEL TRACHEA VIEW**

**Figure 5. X sign**

**Conclusions:** Incorporation of Fetal echocardiography in first trimester scan protocol helps in identification of a high risk cohort who can undergo a targeted heart evaluation in the second trimester thereby increasing detection rate of cardiac anomalies.