

EP03.09 Diagnostic performance of first-trimester ultrasound for fetal structural abnormalities: a Tunisian single-center experience

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Objective :

To evaluate the diagnostic performance of first-trimester ultrasound in detecting fetal structural abnormalities and to identify anomalies reliably detectable at this stage.

Methods :

Retrospective longitudinal study was conducted over an 18-month period at the Department of Obstetrics and Gynaecology, Academic Hospital of Bizerte, Tunisia.

All first-trimester ultrasound examinations were reviewed. Detected abnormalities were classified by type and compared with karyotype results and post-procedural or postnatal outcomes.

Diagnostic performance measures were calculated.

Results:

Among 675 first-trimester ultrasounds, 84 abnormalities were detected (12.%).

Mean maternal age was 34.2 years and mean gestational age at scan was 12+6 weeks.

First-trimester ultrasound showed excellent diagnostic performance, with 100% sensitivity, 97.1% specificity, a positive predictive value of 70.7%, and a high positive likelihood ratio (LR+) of 24.1.

Increased nuchal translucency was the most frequent finding (73.8%). Structural anomalies included:

- ✓ exencephaly (n=1),
- ✓ megacystis (n=1),
- ✓ omphalocele (n=3),
- ✓ gastroschisis (n=2),
- ✓ triploidy (n=2)
- ✓ and limb abnormalities (n=9).

Fetal karyotyping was performed in 88.1% of cases and confirmed chromosomal abnormalities in most cases with increased nuchal translucency.

CONCLUSIONS

First-trimester ultrasound demonstrates excellent diagnostic performance for early detection of fetal abnormalities. It plays a key role in early risk stratification and supports timely clinical decision-making.