

Sequential axial approach for the routine ultrasound evaluation of basic fetal anatomy at 11-13 weeks

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Objective

To investigate if basic fetal anatomy can be evaluated by transabdominal ultrasound (TAU) at 11 - 13 weeks, performing a sequence of axial views, and which sonographic approach (fetal front versus side) may improve the visualisation of anatomical structures.

Methods

Prospective multicenter study, including patients undergoing first trimester ultrasound screening for aneuploidies at 11⁺⁰ – 13⁺⁶ weeks, over a period of three months. During the TAU scan, fetal anatomy was evaluated on a series of axial views acquired along a fixed cranio-caudal sequence and stored on the machine. For each case both frontal and lateral approach were used to insonate the fetus. The sonographic pictures obtained at either approach were reviewed by an independent examiner who assessed the visualization rate of the anatomic structures included in the ISUOG check list as suggested for the 1st trimester scan (table 1). Fetuses with congenital anomalies have been excluded.

Results

Overall, 176 fetuses have been included in the study. At both sonographic methods, the basic anatomical structures were classified as clearly visible in more than 90% of cases, with exception of cord insertion whose visualisation was significantly better at lateral compared with frontal approach (90.3% vs 75.0% p<0.01).

Conclusion

At 11-13 weeks, the TAU assessment of fetal basic anatomy by a sequence of axial views is feasible. A more complete evaluation is obtained when using a lateral sonographic approach.