

Perinatal outcome after second trimester ultrasound diagnosis of isolated fetal echogenic bowel

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Objective

The aim of this study was to determine the perinatal outcome of fetuses presenting with isolated fetal echogenic bowel (FEB) on second trimester ultrasound.

Methods

A nationwide retrospective cohort study was performed including all fetuses prenatally diagnosed with isolated FEB in the second trimester in one of the tertiary care centers in the Netherlands from 2007 to 2014. Isolated FEB was defined as having no structural anomalies. Fetuses with bowel dilation were not excluded as it can be related to FEB. Ultrasound reports, medical records, and neonatal outcome data were analyzed. FEB was classified as grade 1 increased echodensity, but less echogenic than bone, grade 2 echogenicity equal to bone and grade 3 echogenicity greater than bone.

Results

Isolated FEB was present in 862 cases. This group consisted of 679 cases with idiopathic FEB (78.8%), 118 cases of intrauterine growth restriction (13.7%), 8 cases with cystic fibrosis (CF) (0.9%), 19 cases with congenital infections (n=11 CMV, n=6 parvovirus and n=2 toxoplasmosis) (2.2%), 23 cases with chromosomal and genetic anomalies (2.7%) and 15 cases with gastrointestinal abnormalities (1.7%). The gradation of the FEB did not differ significantly between the different subgroups of FEB. Aneuploidy was found in 16 cases (n=10 trisomy 21; n=1 trisomy 18; n=1 trisomy 13; n=4 triploidy). In case of trisomy 21, 4 out of 10 cases (40%) presented with isolated FEB as the only ultrasound marker. The fetuses with early IUGR and FEB (median gestation 31 (range 26-41 weeks), median birth weight 1424 gram (range 405-3600)) showed an adverse pregnancy outcome with only 54% live born neonates. Bowel dilatation occurred significantly more in the CF group (62.5%) and gastrointestinal anomalies (33.3%) group as compared to the group with idiopathic FEB (10%), (OR 14.9 95%CI 3.5-63.7 and OR 4.4 95%CI 1.5-13.5 respectively). After initial diagnosis and prenatal testing, a follow up scan was offered in 613 cases (71.1%). FEB had resolved in 84.7% with no statistical significant difference between groups. In 4 out of 15 (26.7%) cases with gastrointestinal anomalies bowel dilatation became visible on the follow up ultrasound at 30 weeks gestation as it was not present at the initial scan. Overall, 768 children (89.1%) were born alive and a normal short-term neonatal outcome was observed in 562 of the 768 live born children (73.2%). The survival in the idiopathic group was 97.9%.

Conclusion

The majority of fetuses with second trimester isolated FEB show spontaneous resolution of the FEB with advancing gestational age and have a good pregnancy outcome. A third trimester scan should be offered in case of FEB as it improves the detection of gastrointestinal anomalies. FEB and IUGR is associated with adverse pregnancy outcome with a high risk of fetal death.