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Early onset fetal growth restriction: associated ultrasound findings and genetic testing results

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Objective

Multiple factors play role in the pathophysiology of fetal growth restriction (FGR). Impaired placentation remains the most common cause. However, evaluation of associated anomalies and invasive sampling procedures (chorionic villus sampling CVS and amniocentesis) help us to evaluate other causes such as infections and genetic conditions responsible for FGR, including chromosomal, submicroscopic and single gene disorders. Although it is not a universal rule, genetic anomalies and infectious causes are more prevalent in severe cases and early gestational ages. These pathologies can affect either fetal, maternal or impaired placental function.

Methods

We retrospectively examined a series of 80 cases of Early Onset Fetal Growth Restriction, that is, FGR observed before 32 weeks' gestation between the duration of 2010 and 2023. We analysed the associated ultrasound findings in each case and genetic results in the cases which underwent testing. In this study, we used current growth curves, and retrospectively charted additional fetal malformations, chromosomal defect or markers of infection.

Results

In our study, Early Onset FGR was found to be associated with placental dysfunction, low PAPP-A, associated ultrasound anomalies, markers of infection and abnormal invasive testing reports.

Conclusion

This study was conducted to assess the etiopathogenesis of Early Onset FGR. In any case of Early Onset FGR, invasive procedure with genetic and TORCH testing should be offered. Evaluation of cause of FGR can help improve surveillance and management and aid in realistic counselling to the parents.