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Prediction and diagnosis of fetal growth restriction

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Objective

To appraise the screening protocol of the Fetal Medicine Foundation (FMF 2012) the 1st trimester algorithm in estimating the early and late fetal growth restriction (FGR)and to associate the intrauterine diagnosis to the small for gestational age(SGA) newborn.

Methods

An observational cross-sectional study, with a stratified sample according to the estimated FMF risk The Gordijn et al. diagnostic criteria were applied for the fetal growth restriction diagnosis. The sensibility, specificity were determined, positive and negative predictive values, receiver operator characteristic curve (ROC), and area under the curve (AUC) for early and late FGR were determined. From the Gordijn diagnostic criteria applied in the fetus the sensibility and specificity were calculated for the SGA newborn diagnosis.

Results

The total final sample covered 1,932 cases: 315 (16.3%) FGR cases, 114 (5.9 %) early and 181 (9.36%) late cases were identified. For the early FGR screening we found: sensibility 41.04%; positive predictive value (OPV) 10.53%; specificity 74.02%; negative predictive value (NPV): 94.39% and AUC of 0.687. For the late FGR screening the results were: sensitibliity 32.59%, PPV: 12,74%, specificity 74.82%, NPV: 90.77% and AUC of0.578. For the SGA newborn diagnosis, the sensibility was 54.88% and specificity was 86.39%.

Conclusion

Besides the low sensitivity, the FMF2012 algorithm showed a good performance to deviate the risk of an early and late FGR, offering an assurance for the result of a newborn differing from SGA. The early diagnosis of the FRG permits an adequate obstetric follow-up and the reduction of perinatal morbidity and lethality.