Outcome of late fetal growth restricted babies according to risk stratification in a novel evidence based fetal growth restriction clinic

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Objective

There is variation in the definitions used for late fetal growth restriction (FGR), as well as in the optimal surveillance and the timing of delivery. Our study aimed to assess the outcome of a novel evidence based management protocol in a dedicated late FGR clinic using ultrasound parameters to risk stratify pregnancies. We compared the outcome of the new late FGR clinic cohort with a pre-clinic late FGR cohort.

Methods

Data was analysed retrospectively from women referred to a dedicated new late FGR clinic and from a pre-late FGR clinic cohort at University College London Hospital (UCLH), UK. Eligibility criteria included: singleton and non-anomalous fetus >32 weeks gestation with sonographic evidence of late FGR (estimated fetal weight <10 centile). In the late FGR clinic pregnancies were risk stratified into two groups (low or high-risk FGR) according to maternal demographics, biochemical and ultrasound (USS) parameters, with different pathways for surveillance and gestation at delivery. The low-risk group was expectantly managed with fortnightly USS monitoring and delivery by 41 weeks, whilst the high-risk group had weekly USS and delivery between 37-38 weeks. The primary outcome was adverse neonatal outcome (NNO) and the secondary outcomes were severe adverse NNO and adverse maternal outcome.

Results

Over 18 months (2018-2019) 321 pregnancies were managed in the late FGR clinic and 323 pregnancies in the 13 months period prior to this (2017-2018) were managed according to pre-clinic strategies. There were no stillbirths in the FGR clinic group and one stillbirth in the pre-clinic group. In the late FGR clinic women were significantly more likely to have a spontaneous labour (37 versus 26%, aOR 1.6, 95% confidence intervals (CI): 1.2-2.3 P<0.05) and significantly less likely to be induced (45 versus 53%, aOR 0.6, 95%CI: 0.41-1.0, P<0.05). Differences in neonatal outcome (NNO) were more evident in the low-risk FGR clinic group; this group delivered significantly later (39 weeks + 5 days versus 39 weeks + 0 days, P <0.05) and were significantly heavier at birth (2.840 versus 2.670kg, P <0.05). There was no difference in NNO between the groups. However, in a sub-analysis, newly classified low risk babies had significantly less combined adverse and severe NNO (51 versus 60%, aOR 0.8, 95%CI: 0.7-1.0, P<0.05 and 3.8 versus 9%, OR 0.4 95%CI 0.2-1.0, P<0.05) compared to the pre-clinic cohort. There were no significant differences in adverse maternal outcome between the late FGR clinic and the pre-clinic group.

Conclusion

Using evidence-based parameters and appropriate risk stratification in a dedicated late FGR clinic was associated with less late prematurity, higher birth weight and reduced maternal outcomes compared to the pre-clinic cohort. Low adverse NNO is observed in fetuses correctly classified as low risk using the new protocol. In clinical practice expectant management in pregnancies appropriately risk stratified as low-risk FGR could prevent an early iatrogenic term delivery and unnecessary intervention, allowing greater organ maturation#; whilst FGR pregnancies stratified as high-risk can still be delivered in a timely manner. Randomised controlled trials are needed to assess the effects of risk stratification management protocols of late FGR on perinatal morbidity, mortality and long-term neurodevelopment.