NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Fetal Growth Restriction Risk Assessment, Pregnancies at risk of FGR

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Risk assessment, prevention and surveillance of pregnancies at risk of fetal growth restriction

(Based on Element 2 of the Saving Babies' Lives Versions Two, Care Bundle for Reducing Perinatal Mortality)

There is strong evidence to suggest that Fetal growth restriction (FGR) is the biggest risk factor for stillbirth. Therefore antenatal detection of growth restricted babies is vital and has been shown to reduce stillbirth significantly because it gives the option to consider timely delivery of the baby at risk.

All staff looking after pregnancy women must be aware however that

Small for Gestational Age (SGA) where the Estimated Fetal Weight (EFW) <10th centile

and

Fetal Growth Restriction (FGR) where a fetus fails to reach its growth potential

are distinct entities. Although SGA babies are at increased risk of FGR compared to appropriately grown fetuses, fetuses <3rd centile are far more likely to be FGR than fetuses between the 3rd and 10th centile. This guideline aims to identify and focus on the higher risk FGR group whilst trying to limit unnecessary intervention in the lower risk SGA group.

Decision making relies on balancing the risks of causing mild harm to a relatively large number of infants (admission to Neonatal unit) to prevent serious harm to a small number of infants (stillbirth).

Risk assessment, surveillance and management of the FGR fetus

Risk Assessment

1. All women should be risk assessed at booking, using the FGR BadgerNet tool, and the risk assessment pathway (Appendix 2) should be used to triage women in to those at highest risk of FGR.
2. All women should be risk assessed at booking, using the Pre-eclampsia Risk Level BadgerNet tool, to determine if a prescription of Aspirin is appropriate (Appendix 1)
3. All women should be asked about smoking status, offered referral to smoking cessation and informed of the association between smoking , FGR and stillbirth
4. All women should have the FGR BadgerNet risk assessment tool updated at 28 weeks and following any antenatal admission
5. The FGR BadgerNet risk assessment tool should be updated if any of the following risk factors develop during the current pregnancy;
   Fetal Echogenic bowel
   Significant vaginal bleeding
   EFW <10th centile

Surveillance

1. In women not undergoing serial ultrasound scan surveillance of fetal growth, assessment is performed from 26 weeks gestation using and plotting on the International Symphisis – Fundal height Standards Intergrowth 21st Chart.

Definitions

Definition of FGR in a previous pregnancy as a risk factor: defined as any of the following:

1. Birthweight <3rd centile
2. Early onset placental dysfunction necessitating delivery <34 weeks (abnormal umbilical artery Dopplers)
3. Birthweight <10th centile with evidence of placental dysfunction as defined below for current pregnancy

Definition of FGR in a current pregnancy

1. EFW <3rd centile
2. EFW <10th centile with evidence of placental dysfunction (either);
    - Abnormal uterine artery Doppler (Mean Pulsatility index (PI) >95th centile) between 20-24 weeks
    - Abnormal umbilical artery Doppler (Pulsatility index (PI) >95th centile, absent or reversed end diastolic flow)

Appendix 1

NHS GG&C Guideline; Aspirin – Antenatal use of aspirin for the prevention of pre-eclampsia

Risk Level	Risk factors	Recommendation
High	-Hypertensive disease during a previous pregnancy -Chronic kidney disease -Autoimmune disease such as systemic lupus erthymatosus or antiphospholipid syndrome -Type 1 or Type 1 diabetes -Chronic hypertension -Placental histology confirming placental dysfunction in a previous pregnancy	150mg aspirin
Moderate	-First pregnancy - ≥40 years old -Pregnancy interval >10 years -Body mass index (BMI) of 35kg/m^2	150mg aspirin ≥ 2 risk factors

Appendix 2: Algorithm for using uterine artery Doppler as a screening tool for risk of early onset FGR (Complete BadgerNet risk assessment form)

Risk assessment using BadgerNet FGR tool Perform at booking and mid-trimester anomaly scan		Prevention	Screening for early onset FGR and triage to pathway	Screening/surveillance pathway for FGR/SGA	
Low risk	No risk factors	Nil	Anomaly scan and EFW ≥10th centile	Serial measurement of SFH	
Moderate risk	Moderate risk factors <u>Obstetric history</u> Previous SGA Previous stillbirth AGA birthweight <u>Current risk factor</u> Drug misuse Women ≥40 years of age at booking	Assess for history of placental dysfunction and consider aspirin 150mg at night <16 weeks as appropriate	Anomaly scan and EFW ≥10th centile	Serial USS from 32 weeks every 4 weeks until delivery	Reassess BadgerNet FGR risk assessment tool at 28 weeks and after any antenatal admission
High risk	High risk factors <u>Medical history</u> Maternal medical conditions (chronic kidney disease, hypertension, autoimmune disease (SLE,APLS), cyanotic congenital heart disease <u>Obstetric history</u> Previous FGR Hypertensive disease in a previous pregnancy Previous SGA stillbirth <u>Current pregnancy</u> PAPP-A <0.42 MoM Echogenic bowel Significant bleeding EFW <10th centile	Assess for history of placental dysfunction and consider aspirin 150mg at night <16 weeks as appropriate	Additional uterine artery Doppler to be performed at FAS Normal Uterine artery Doppler Abnormal uterine artery Doppler and EFW ≥ 10th centile Abnormal uterine artery Doppler and EFW <10th centile	 Serial USS from 32 weeks every 2-4 weeks until delivery Serial USS from 28 weeks every 2-4 weeks until delivery Discussion with fetal medicine/obstetrician with interest in high risk obstetrics	Assess for complications developing in pregnancy e.g hypertensive disorders or significant bleeding Serial USS from diagnosis until delivery
Other	Women unsuitable for monitoring of growth by SFH measurement BMI ≥40, Fibroids	Nil	Anomaly scan and EFW ≥10th centile	Serial USS from 32 weeks every 4 weeks until delivery	

Early onset FGR is rare (0.5%). The vast majority are associated with abnormal uterine artery Doppler indices or already present EFW <10th centile in the early third trimester. Thus, uterine artery Doppler can be used in the second trimester (20-24 weeks at routine FAS) to further determine the risk of placental dysfunction and risk of hypertensive disorders and/or early onset FGR for women at high risk.

The risk factors listed here constitute those routinely assessed at booking. Other risk factors exist and risk assessment must be individualised taking into account previous medical and obstetric history and current pregnancy history. For women with maternal medical conditions and individuals with disease progression or institution of medical therapies may increase an individual's risk and necessitate monitoring with serial scanning. For women with a previous stillbirth, management must be tailored to the previous history