Detection and Management of Small for Gestational Age (SGA) and Intra Uterine Growth Restriction (IUGR)

Originator: Antenatal Forum
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Introduction and Background

Small for Gestational Age (SGA) and Intrauterine Growth Restriction (IUGR) fetuses are a heterogeneous group comprising fetuses that have failed to achieve their growth potential (fetal growth restriction, FGR) and fetuses that are constitutionally small. Approximately 50–70% of fetuses with a birth weight below 10th centile for gestational age are constitutionally small. RCOG Guidelines suggests that the term SGA should be used when the abdominal circumference is less than the 10th centile for the gestational age. Diagnosis of IUGR/FGR should be reserved for those infants who failed to reach their genetic growth potential or a fetus whose growth velocity slows down or stops completely. The use of customised charts has been shown to improve detection and may be introduced in the future.

Using the model of Bobrow and Soothill; A SGA fetus can be categorised according to aetiology into:

1. Normal SGA: No structural anomalies with normal liquor, normal umbilical artery Doppler wave forms and normal growth velocity.
2. Abnormal SGA: those with structural or genetic abnormalities.
3. IUGR: those with impaired placental function identified by abnormal umbilical artery Doppler waveforms (UADW) and reduced growth velocity.

Implications of Fetal Growth Restriction

SGA fetuses are at greater risk of stillbirth, birth hypoxia, neonatal complications, impaired neurodevelopment and possibly type 2 (non-insulin-dependent) diabetes and hypertension in adult life. The reason that studies on SGA fetuses have shown poor perinatal outcome is likely to be the high incidence of true FGR in this group.

Detection

- Measure SFH in all pregnancies, plot on SFH charts.
- If SFH falls below the 10th centile on chart then arrange ultrasound scan and assess the risk for fetal growth restriction.
- Risk assessment:
  Maternal - smoking, thrombophilia, previous FGR, chronic hypertension, pre-existing medical disorders, recreational drug usage, multiple pregnancy.
Fetal factors - aneuploidy, structural abnormalities, fetal infections.

- Scan assessment: Growth:
  
  AC, HC, FL +/- EFW
  Liquor (AFI)
  Umbilical artery Doppler

  If AC > 10th centile, liquor and Doppler normal - reassure and manage as normal unless further concerns with growth arise (a referral can be made at any stage).

**Management** - The aim is to distinguish Normal SGA from IUGR.

**Essential principles**

- Anatomical survey to exclude structural abnormalities (20 week fetal anomaly scan should already have been performed – if not arrange fetal survey). In gestations less than 28 weeks consider karyotype +/- thrombophilia screen +/-TORCH screen.

- Use umbilical artery Doppler as the primary surveillance tool.

- Assess liquor volume

- Assess growth velocity by arranging repeat biometry in 2 weeks.

- Antenatal corticosteroids if FGR diagnosed between 24 and 36 weeks.

**SGA with Normal liquor, Normal UADW**

Repeat scan in 2 weeks

**SGA with Reduced liquor, Normal UADW:**

History/examination re: SROM

Repeat scan in 1 week to reassess AFI and doppler

Growth scan in 2 weeks.

**SGA with Reduced liquor and Abnormal UADW:** IUGR

- Increased RI but EDF present:

  Repeat scan in 1 week (Doppler, AFI)

- Twice weekly CTG
- Growth scan in 2 weeks

**SGA with AEDF / REDF:**

- Requires hospital admission. Inform obstetric consultant.

- Inform SCBU depending on gestation

- Plan for delivery, depending on gestational age.

- If delivery not indicated continue surveillance with x2/week Doppler and x3 CTG/day

**Delivery**

Timing of delivery is mainly dependent on the gestation and Doppler studies.

- When end diastolic flow is present, delay delivery until at least 37 weeks, provided other surveillance findings are normal.

- When end diastolic flow is absent or reversed, admission, close surveillance and administration of steroids are required. If other surveillance results (like CTG) are abnormal, delivery is indicated. If gestation is over 34 weeks, even if other results are normal, delivery may be considered.

**Auditable standards**

1. The outcome for fetuses classified as severe SGA or FGR should be audited.

2. All women with evidence of FGR should be offered surveillance with umbilical artery Doppler and biometry as a minimum.

3. Corticosteroids should be offered to all women who may need delivery between 24 and 36 weeks.
References


### Checklist for Clinical Guidelines being Submitted for Approval by Quality & Safety Group

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<tr>
<th>Title of Guideline:</th>
<th>Detection &amp; Mgmt of Small for Gestational Age (SGA) and Intra Uterine Growth Restriction (IUGR)</th>
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<tbody>
<tr>
<td>Name(s) of Author:</td>
<td>ADAU protocol group</td>
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<tr>
<td>Chair of Group or Committee supporting submission:</td>
<td>Marsham Moselhi Vicky Langford</td>
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<td>Details of persons included in consultation process:</td>
<td>All Consultant Obstetricians and Senior Midwifery staff across the Health Board</td>
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<td>Christine Willson</td>
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* To be completed by Author and submitted with document for ratification to Clinical Governance Facilitator