Maternity
Clinical Network
North East and North Cumbria

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The management of fetal growth disorders

Including:

- Fetal growth restriction
- Small for gestational age
- Large for gestational age in the absence of maternal diabetes

Produced by NENC Fetal medicine and Intrapartum care groups

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Contents

1. Introduction

Fetal size is determined by ultrasound on the basis of a formula to generate estimated fetal weight (EFW). The size is then plotted on a growth chart which allows the clinician to determine whether the fetus is of an appropriate size or is large/smaller than expected (1).

Across the NENC maternity network fetal size should be assessed against Intergrowth-21 (IG-21) standards, replacing the previous customised growth charts (GROW) (2). Previous recommendations for the use of customised centile charts for EFW were based on observational studies comparing units within England and Wales that had adopted a customisation programme compared to those that did not (3). Recent analyses of the use of partially customised versus non-customised centiles using population-based linkage studies from Scotland have demonstrated that customisation of fetal size did not improve prediction of stillbirth (4). Similar population-based studies have not confirmed any benefit of customised charts compared to standard assessment (5). A recent randomised also controlled trial showed that the use of customised charts did not increase the antenatal detection of small babies and there was a significant additional cost per 1000 maternities with the use of GAP/GROW software (6,7).

2. Guideline Scope

The purpose of this guideline is to provide advice to guide healthcare professionals regarding the investigation and care of fetal growth disorders. This covers the care of the small for gestational age (SGA) fetus and the growth restricted fetus; as well as determining suboptimal fetal growth.

The guideline also covers the care of the large for gestational age (LGA) fetus in the absence of maternal diabetes. The guidance is based on best practice and best evidence available.

Guidance on screening can be found in NENC Screening for fetal growth disorders guideline, which provides guidance on screening using Symphysis-Fundal Height (SFH) measurement for women at lower risk of fetal growth restriction.

3. Definitions

Small for gestational age (SGA)

- EFW<10th centile but ≥3rd centile on IG21 chart with normal umbilical artery Doppler pulsatility index (UAPI)

Fetal growth restriction (FGR): in the absence of congenital anomalies, with any of the following:

- EFW/Abdominal circumference (AC) <3rd centile
- UA absent or reversed EDF (AREDF)
- EFW/AC <10th centile in combination with mean uterine artery Doppler pulsatility index (UtAPI) >95th centile or UAPI>95th centile

Late onset FGR:

- FGR as defined above with onset ≥32 +1 weeks

Early onset FGR:

- FGR as defined above with onset 26^{+0}-32 weeks

Periviable FGR:

- FGR as defined above with onset <26 weeks

Suboptimal growth:

- EFW or AC declining by >50 centiles between two scans 14-21 days apart, ≥34 weeks gestation

Large for gestational age (LGA)

- EFW >97th centile by IG21 chart

Hydramnios

- Mild – deepest vertical pool (DVP) >8cm but ≤12cm
- Moderate- DVP >12cm but ≤16cm
- Severe – DVP >16cm

Gestation and weight based criteria for level of neonatal care NENC

- Level 3 neonatal care (RVI/JCUH/STSH) <30 weeks or less than 1250g
- Level 1 neonatal care (*excluding QEH*) ≥30 weeks and ≥ 1250g
- Level 1 neonatal care (QEH) ≥32 weeks and ≥1250g

4. SGA and FGR

Once a referral is made for an ultrasound scan due to suspicion of SGA/FGR this should be performed within 3 working days. If this is not achievable a cCTG should be performed once in the interim.

Management of SGA/FGR

SGA (EFW/AC<10th but ≥3rd centile) with normal UAPI and amniotic fluid, and no risk factors (see below)

- Growth scan with assessment of UAPI and amniotic fluid every 2 weeks
- Check BP, urine & fetal movements each visit
- Delivery should be recommended at 39+0 and birth achieved by 39+6

FGR (EFW /AC <3rd centile) with normal UAPI and amniotic fluid, and no risk factors (see below)

- Growth scan every 2 weeks
- Weekly assessment of UAPI and amniotic fluid
- Check BP, urine& fetal movements each visit
- Delivery should be recommended from 37+0 and birth achieved by 37+6

If any of these risk factors are present, there is a need for senior obstetric review to plan ongoing care and timing of delivery

- cCTG not meeting Dawes Redman criteria after 60 minutes (see NENC Antenatal cCTG guideline)
- Maternal hypertensive disease
- Sflt1/PlGF>85 < 33+6 weeks or > 110 ≥ 34 weeks
- Reduced liquor volume (DVP <2cm)
- Reduced fetal movements
- MCA Doppler (if used) PI <5th centile

If UAPI >95th centile:

- cCTG
- Review by a senior obstetrician to assess if delivery is indicated (review need for steroids and MgS04)
- If delivery not indicated, then a plan for on-going fetal monitoring:
  - Twice weekly Doppler(s)
  - Twice weekly cCTG

Special circumstances:

- If AREDF >34 weeks offer delivery
- If AREDF 32-34 weeks, then seek input from a fetal medicine specialist
- If onset of FGR is 26-32 weeks, please see section 5.1 **Early onset FGR**
- If onset of FGR is <26 weeks, please see section 5.3 **Periviable FGR**

4.1 Planning for birth

All management decisions regarding timing of delivery, and a clear explanation of why delivery is being offered, should be discussed with the mother. Women should be aware of the risks, benefits and alternatives. This discussion should include risks associated with early term birth (37-38 weeks) (10-12).

- The Avoiding Term Admissions Into Neonatal units (ATAIN) programme has identified that babies born at 37 – 38 weeks gestation are twice as likely to be admitted to a neonatal unit than babies born at later gestations (176 NICU admission per 1000 births following induction at 37 weeks, compared to 78 NICU admissions per 1000 births for those delivered later) (Figure 3)
- There are also concerns about long term outcomes following early term birth: One study concluded there would be one additional child with special educational needs (SEN) for every 60 inductions at 37 weeks, for every 120 inductions at 38 weeks, and for every 250 inductions at 39 weeks compared with delivery at 40 weeks·
- Children born at 37 to 38 weeks are more likely to fail to achieve their expected level of attainment in primary school, but no attainment disadvantage was shown at secondary school.

At ≥39^{+0} weeks, induction of labour (IOL) is not associated with an increase in caesarean section, instrumental vaginal birth, fetal morbidity, or admission to the neonatal unit. The NICE guidance and data from the ARRIVE study provide contradictory evidence as to whether IOL is associated with a longer hospital stay or more painful labour.

Figure 1

Week of gestational age	Induction of labour (neonatal admission per 1,000)	Delivered later (neonatal admission per 1,000)	Adjusted odds ratio (95% CI)
37	176	78	2.01 (1.80-2.25)
38	113	74	1.53 (1.41-1.67)
39	93	73	1.17 (1.07-1.20)
40	80	73	1.14 (1.09-1.20)
41	66	84	0.99 (0.93-1.05)

4.2 Timing of birth:

EFW or AC <3rd centile, normal UAPI no other risk factors: Delivery should be recommended from 37^{+0} and achieved by 37^{+6}.

EFW or AC <10th but ≥3rd centile, normal UAPI and no other risk factors: Delivery should be recommended at 39^{+0} and birth achieved by 39^{+6}.

If risk factors are present, timing of delivery should be discussed with a consultant obstetrician. Risk factors include:

- cCTG not meeting Dawes Redman criteria after 60 minutes (see NENC Antenatal cCTG guideline)
- Maternal hypertensive disease
- sFlt1/PLGF ratio ≥ 85 <33+6 weeks or > 110 ≥ 34 weeks
- Reduced amniotic fluid (DVP < 2 cm)
- Reduced fetal movements
- MCA Doppler (if used) PI <5th centile

Estimated weight should be taken into account when considering place of birth

If a woman declines IOL, then counselling by a senior obstetrician must include:

- The increased risk of stillbirth. Extended perinatal mortality rate is 0.6 per 1000 births following induction of labour at 39 weeks, and 1.9 per 1000 births for those born later
- Evidence that there is no increased risk for the baby or the mother from birth/IOL at this gestation
- Lack of evidence as how to best to monitor babies who are SGA/FGR if the pregnancy continues beyond the recommended gestation.

4.3 Suboptimal growth (≥ 34 weeks)

Fetuses that demonstrate declining growth velocity (>50 centiles) from 34 weeks' gestation are at increased risk of stillbirth from late onset FGR, even if EFW is >10th centile. Evidence to guide practice is limited and guidance is currently based on consensus opinion (1,13).

- The strict definition of suboptimal growth (SBLCBv3, 2023) identifies a group who do not reach the threshold for SGA or FGR (EFW or AC between 3rd-10th centiles or EFW or AC <3rd centile respectively) that nevertheless experience suboptimal fetal growth.
- Suboptimal fetal growth after 37 weeks would usually result in a plan for delivery.
- Suboptimal growth prior to 37 weeks would either result in increased fetal surveillance or a plan for delivery depending upon the presence of concurrent antenatal risk factor.

5. Early onset FGR (<32 weeks)

Compared to late onset FGR, early onset FGR presents a particular challenge as delivery is associated with significant additional risks of prematurity. Delivery is therefore optimal at a Maternity unit with a Level 3 neonatal facility (see definitions).

In the setting of absent/reversed end diastolic flow (AREDF) a same day referral should be made to a centre with level 3 neonatal care by the obstetrician caring for the woman, this referral should be made via a phone call.

5.1 Investigations

- FGR diagnosed < 32 weeks should be discussed with a fetal medicine specialist
- FGR diagnosed <26 weeks should be discussed with the fetal medicine regional referral unit
- FGR diagnosed < 24 weeks should be considered for genetic testing. This is particularly relevant if the maternal and fetal Dopplers are normal. In structurally normal fetuses with FGR the risk of a pathogenic genetic imbalance is < 5%
- 5% of cases will have evidence of congenital infection therefore maternal blood tests should be offered to screen for congenital infection including:
    - cytomegalovirus, toxoplasmosis, syphilis
    - in high risk populations, consider malaria and/or zika testing

5.2 Management of early onset FGR

- Surveillance should follow the flow chart from section 4.
- If the UAPI becomes abnormal (>95th centile) then follow the flow chart on the next page – *The management of early FGR with abnormal cord Doppler* (15)

The management of Early FGR with abnormal cord doppler

- Singleton fetus
- 26-32 weeks
- No obvious anomaly
- EFW/AC <10th centile
- Raised UAPI>95th centile or AREDF

↓

Refer to Fetal medicine team at level 3 unit to perform monitoring via regional referral pathway

If AREDF this is an URGENT referral, call fetal medicine (Monday-Friday 9:00-17:00) 01912825837 or consultant on call for obstetrics (out of hours) 01912829248

↓

Fetal medicine monitoring should be performed at least every 2-3 days

- Perform cCTG – 1 hour trace
- 26^{+0} -28^{+6} STV must be ≥2.6ms
- 29^{+0} -31^{+6} STV must be ≥3.0ms
- There must be no repetitive decelerations

- Perform DV doppler
- A wave must be positive

<u>Delivery Criteria</u>

- cCTG

⇨ STV below threshold

⇨ repetitive unprovoked decelerations

- DV doppler

⇨ Absent/reversed A wave

- Umbilical cord doppler

⇨ ≥32^{+0} REDF (consider with AEDF)

⇨ ≥34^{+0} AEDF

<u>Considerations</u>

- Neonatal input should be sought at diagnosis and at time of planned delivery
- Steroids should be given at the point the managing clinician is of the opinion delivery will be required in the next 7 days
- A single repeat course of steroids should be given if the delivery is planned and the previous course was given >7 days ago
- Magnesium sulphate should be given <32 weeks when delivery is planned

5.3 Management of periviable FGR

Periviable FGR is defined as FGR <26 weeks.

There is a lack of high quality evidence to inform management in this setting.

Once the UA Doppler shows AREDF management should be personalised, taking into account:

- Severity of Doppler changes
- Gestation and weight
- Parental wishes
- Neonatology input

6. Suspected LGA in the non diabetic mother

6.1 Risks and risk factors

- The number of large babies is on the increase, mainly due to increases in maternal height, BMI, gestational weight gain, diabetes and changes to socio-demographic factors (16).

- There is some evidence of both benefits and harms for induction of labour (IOL) and for expectant management in women without diabetes with suspected fetal macrosomia, but there is uncertainty around the evidence (17,18).

- The risks associated with LGA babies include shoulder dystocia, which can result in brachial plexus injury, fractures, hypoxic ischaemic encephalopathy (HIE) and stillbirth. However, in nearly half of the deliveries where shoulder dystocia, birthweight is below 4000g. At birth the baby is at a higher risk of hypoxia levels, shoulder dystocia, nerve injuries, bone fracture, hypoglycaemia, and admission to the neonatal intensive care unit (19).

- Maternal complications include prolonged labour, operative birth including caesarean section, perineal trauma, postpartum haemorrhage and uterine rupture.

- Interventions that may slow growth acceleration and improve health outcomes for the mother and her baby include dietary advice, lifestyle modification, and in women with diabetes or gestational diabetes blood glucose monitoring and insulin therapy.

6.2 Identification and diagnosis

Symphyseal-fundal height (SFH) is used to screen for fetal growth abnormalities in the low risk population.

The woman should be referred for an ultrasound scan for growth and amniotic fluid volume if the SFH plots above 97th centile and:

- there is a clinical suspicion of polyhydramnios OR
- a previous history of a complicated birth (e.g., shoulder dystocia), OR
- if SFH measurements shows an accelerated trend on the growth charts, OR
- there is clinical suspicion of undiagnosed diabetes (e.g., glycosuria, a missed OGTT, previous GDM, family history of DM)

An ultrasound scan should be performed within 3 working days.

A diagnosis of LGA is made on the basis of an EFW >97th centile.

6.3 Screening for gestational diabetes

Risk Factor	Screening method and referral pathway
EFW > 97th centile (from 24 weeks onwards)	**<32 weeks -** arranges an Oral Glucose tolerance test (OGTT) within as soon as possible unless the woman has had a GTT within the preceeding 4-6 weeks (depending on clinical picture) **32 weeks and above –** organise home blood glucose monitoring (HBGM) unless the woman has had a OGTT or HBGM within the preceeding 4-6 weeks (depending on clinical picture) • A telephone follow up appointment should be arranged to review at least 7 days of monitoring.
AC > 97th centile (from 24 weeks onwards)	
Hydramnios	

- GDM should be diagnosed based on local criteria until a regional defintion is agreed
- If GDM is diagnosed, refer to Diabetes ANC for further management
- If not diabetic, refer to consultant with a repeat USS in 2-4 weeks depending on gestation.

6.4 Management of LGA without maternal diabetes

If the EFW by ultrasound scan at 37 weeks gestation or beyond is above the 97th centile, a detailed discussion should be undertaken with the woman to facilitate shared decision-making about mode of delivery. The case should be discussed with a consultant.

Women should be counselled about the risks associated with macrosomia including shoulder dystocia and associated fetal complications, PPH and perineal trauma. (See Appendix 2+3).

Women should have a discussion around options available to them including:

- Expectant management-
    - ongoing USS monitoring depending on gestation is reasonable, especially in women where LGA is most likely constitutional (i.e., symmetrical) and not secondary to other pathology.
    - Factors that are likely to favour expectant management are past history of fetal macrosomia with spontaneous uncomplicated vaginal delivery.
- Induction of labour from 39 weeks
    - reduces the risk of shoulder dystocia by 2.7% (absolute risk reduction from 68/1000 to 41/1000)
    - reduces the risk of birth fractures by 1.6% (absolute risk reduction from 20/1000 to 4/1000)
    - does not increase the risk of caesarean section or instrumental delivery
    - does not associated increase the risk of perineal tears or 3rd degree tears
    - Mid-pelvic instrumental procedures are associated with an increased risk of shoulder dystocia (rates up to 50%) in LGA compared to non-LGA fetuses. The decision to perform mid-pelvic operative vaginal delivery should therefore be discussed with a consultant obstetrician.
- Elective caesarean section.
    - This option removes the risk of shoulder dystocia. It is important to note that there is no data showing a reduction in any specific maternal or fetal risks.
    - It is important to discuss the implications on future pregnancies.
        - Management will follow a high risk pathway
        - 1 in 200 risk of uterine rupture which can also cause fetal hypoxia or even death; this risk is no greater than in a first labour

- Placenta praevia and accreta (3 in 100 risk with one previous caesarean) with the risk of hysterectomy (7 in 1000 with one previous caesarean)
- 1 in 100 risk of transient neonatal tachypnoea and admission to the Neonatal Unit (at 39 weeks)
- Increased risk of bladder damage, in the future, if further caesareans are undertaken (3 in 1000 with one previous caesarean) or gynaecological surgery (e.g. hysterectomy) is required in the long-term future

- There should also be an agreed and documented plan of management should spontaneous labour occur prior to the agreed date of the Caesarean section.

- If the woman is aiming for a vaginal birth after caesarean (VBAC) then the timing and method should be discussed with the consultant. In relation to VBAC labour, birthweight of 4 kg or more is associated with an increased risk of uterine rupture (OR 2.62, 95% CI 1.001–6.85), unsuccessful VBAC (OR 2.47, 95% CI 1.82–3.34), shoulder dystocia (OR 25.13, 95% CI 9.31–67.86) and third- and fourth-degree perineal laceration (OR 2.64, 95% CI 1.66–4.19). However, third trimester ultrasound is a poor predictor of macrosomia in decision making regarding VBAC (20-23).

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Abbreviations

BP – Blood pressure
cCTG– computerized cardiotocograph
DV– Ductus venosus
DVP – Deepest vertical pocket
EFW– Estimated fetal weight.
FGR– Fetal growth restriction
SGA-small for gestational age
SFH– Symphysis fundal height
UAPI-Umbilical artery Pulsatility Index
ARED -Absent/reversed end diastolic flow
UA – Umbilical artery
UtA _Uterine artery
MCA Middle cerebral artery
PI-Pulsatilty index
DVP -deepest vertical pocket
BMI -Body mass index
GDM -Gestational Diabetes Mellitus
HIE -Hypoxic Ischaemic Encephalopathy
HSIB -Health Safety Investigation Branch
LGA -Large for Gestational Age
NICE -National Institute for Health and Care Excellence
OGTT -Oral Glucose Tolerance Test
PPH -Postpartum Haemorrhage
RCOG -Royal College of Obstetricians and Gynaecologists

Appendix 1.

NENC SOP for use during the transition period between GAP and IG21

Version 1.1 November 2023

(Please use this SOP in conjunction with the NENC guidelines on management and screening for fetal growth disorders)

- Following the 'change over' women using BadgerNet will no longer have access to GAP/GROW EFW and SFH combined charts.
- Those beyond 26 weeks will have had measurements taken; they should be plotted on either IG21 EFW or SFH charts.
- There will be a period of 16 weeks for this transitional period
- The premise of this interim SOP is to do what is safest, i.e. if one chart classifies a fetus as either SGA or FGR then management will follow that chart, if this is the IG21 then please see the regional guidance for this use, if this GAP/GROW then see below

EFW charts

- Women with an EFW measurement on GAP/GROW that has been plotted below the 3rd and 10th centile should continue to follow a schedule of serial growth scans unless there is an obvious increase in growth velocity that would justify removing them from a serial scanning pathway as judged by their managing clinician

    If there is no increase in growth velocity and the EFW continues along its original centile delivery should be recommended at 39 weeks (i.e. manage as SGA)

- Women with an EFW measurement on GAP/GROW that has been plotted below the 3rd centile should continue to follow a schedule of serial growth scans and interim Doppler assessments unless there is an obvious increase in growth velocity that would justify removing them from a serial scanning pathway as judged by their managing clinician

    - If there is no increase in growth velocity and the EFW continues along its original centile delivery should be recommended from 37 weeks (i.e. manage as FGR)

- Women with an EFW measurement on GAP/GROW that was >10th centile but when moved to IG21 is now <10th centile should be managed as per the regional guidance for the use of IG21.

- For those women on serial scanning pathways this will be picked up at their next scan.
- For those not on serial scanning pathways it will be reliant on the community team checking the IG21 EFW chart when they next see the woman

- For women with an EFW measurement on GAP/GROW that was >97th centile but when moved to IG21 it is now <97th centile we recommend the following.
  - If on a serial scan pathway continue this and ensure a consultant review at 37 weeks to consider delivery plans
  - If that scan was isolated and remote from term repeat the scan at around 37 weeks with a consultant review to consider delivery plans
  - If the scan was >37 weeks and delivery plans have not already been made arrange a consultant review

SFH charts

- All new measurements made on SFH chart should be compared to previous ones (these will automatically transition across when the charts are switched over)
- If a prior SFH measurement was >10th centile on GROW/GAP but <10th centile on IG21 SFH and the next SFH measurement is also <10th centile a scan is required
- If women contact their community team because they have noted that by moving charts their SFH measurements place their baby <10th centile or >97th centile they should be reassured no immediate action is required. A plan will be made at their next community midwife visit when a further SFH measurement can be taken, this should be 2-3 weeks from the last measurement
- Women who have a SFH < 10th centile by SFH on GROW/GAP where a scan is planned within 72 hours should keep this planned appointment even if on transition of charts the SFH measurement on IG21 is>10th centile

Appendix 2

LGA - Shared decision making tool

EFW at or above the 97th centile after 37 weeks

The following information is used to guide decision making regarding mode of delivery:

- The ultrasound measurement of the fetal weight may have an error of 10-15%.
- There is currently a lack of evidence regarding the benefit of early induction of labour in reducing the risk of shoulder dystocia. he “Big baby trial” hopes to answer this question.
- There is currently no national guidance on the fetal weight centile at which caesarean section is recommended although it is suggested that Caesarean section is considered when the EFW is over 5 kg.

Risks of a vaginal birth with a big baby

Risks to the baby:

- Up to 1 in 25 big babies will experience shoulder dystocia and will need extra help to deliver their shoulders.
- Most babies who experience shoulder dystocia will have no long-term effects.
- 1 in 10 big babies who experience shoulder dystocia will have stretching of the nerves in the neck (brachial plexus injury) which can cause loss of movement in the baby's arm. For 1 in 10 babies with a brachial plexus injury, the loss of movement will be permanent.
- 1 in 10 big babies who experience shoulder dystocia, will have a fracture of their collarbone. 4 in 100 babies who experience shoulder dystocia may have a fracture to their arm. These fractures usually heal without problems.
- Very rarely, a baby may die or suffer brain damage if they did not get enough oxygen during the birth because of shoulder dystocia.

Risks to the woman:

- Labour may be longer for bigger babies. 15 in 100 women who are planning to have a vaginal birth will need to have an emergency caesarean section. Some women may need to have a forceps or ventouse (suction) delivery.
- 3 in 100 women will have a tear to their vagina that extends into the back passage (rectum). This could affect their bowel control if the tear is not identified and repaired.
- Women with a big baby may experience heavier bleeding (haemorrhage) after the baby is born. In rare cases, some women may need a blood transfusion.

Risks of caesarean section

Risks to the baby

- 1 in 10 babies may experience breathing difficulties. Some of these babies will need to have treatment for this in the neonatal unit.
- 1-2 babies in 100 will have a cut to their skin.
- Some women report that it takes longer to bond with their baby after a caesarean section.

Risks to the woman

- 9 in 100 women report persistent pain at the wound site and in their abdomen for a few months following a caesarean section.
- 5 in 100 women will need to be readmitted to hospital following a caesarean section. This might be because their wound is not healing or because they have an infection.
- 6 in 100 women will have an infection after a caesarean section. The infection may involve the scar, their bladder or kidneys, or the lining of their womb.
- 1 in 1000 women may have an injury to their bladder or bowel during a caesarean section. This will need to be repaired.
- 5 in 1000 women bleed heavily (haemorrhage) during a caesarean section. Some of these women will need to have a blood transfusion. In some cases, a woman may need to have a hysterectomy (where the womb is removed) to control the bleeding.
- 5 in 1000 women may need to have further surgery after their caesarean section.
- 6 in 10,000 women will have a blood clot in their leg or lung following a caesarean section.
- 1 in 4 women who have a caesarean section will need another caesarean section if they attempt a vaginal birth in their next pregnancy. If you have a caesarean section and decide to try a vaginal birth in your next pregnancy, you would need extra monitoring in labour as there is a risk (1 in 200 women) that the scar in the uterus can open during labour.
- If you have a caesarean section in this pregnancy, in your next pregnancy there is an increased chance of a stillbirth. This is uncommon.
- If you have a caesarean section in this pregnancy and the placenta is low in your next pregnancy, there is an increased chance that the placenta will not come away easily after the baby has been born. This can cause serious bleeding and may mean you need to have a hysterectomy. This is uncommon, but the chance increases with each caesarean section.

Discussed by

Name of ST3 or above: ……

Signature: ……..

Job Title: …….

Date: ……

Planned mode of delivery as agreed with the woman:

- Vaginal birth
- Caesarean section

Appendix 3

Cochrane infographic- IOL for big babies

Induction of labour of big babies

What is this review about?

Big Babies (over 400g or 9lb) can be injured at birth. Inducing labour early before the baby grows too big, may reduce this trauma.

However, if done too early, induction can lead to babies being born prematurely and with immature organs. Also, estimating a baby's weight before birth is not very accurate, so induction will sometimes be unnecessary.

What evidence did we find?

We found four studies (randomised trials), involving 1190 nondiabetic pregnant women with suspected large babies.

This infographic shows some of the results of the review comparing pregnant women who were induced at 37 to 40 weeks with women who waited for labour to start naturally.

What's best for babies?

Big babies have a higher chance of being injured during birth.

Does inducing labour make a difference to the number of babies who are injured?

Any Fracture

The baby may fracture a bone during birth,e.g the collarbone.

4 out of 1000 babies **Induction**

20 out of 1000 babies **Waiting**

Induction of labour decreased fracture about 16 babies per 1000.

Shoulder Dystocia

When the baby's shoulder becomes stuck during birth.

41 out of 1000 babies **Induction**

68 out of 1000 babies **Waiting**

Induction of labour decreased shoulder dystocia by about 27 babies per 1000.

Brachial Plexus Injury

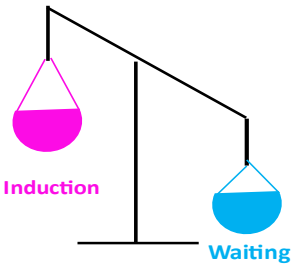
Damage to the network of nerves that send signals to the baby's shoulder, arm and hand.

1 out of 1000 babies **Induction**

3 out of 1000 babies **Waiting**

There was no clear difference between induction of labour and waiting.

Birthweight



On average, babies weighed 178g less when labour was induced compared with waiting.

Low Apgar Score

This assesses the babies health. A low score shows that the baby might need medical attention.

7 out of 1000 babies **Induction**

5 out of 1000 babies **Waiting**

There was no clear difference between induction of labour and waiting.

Low Arterial Cord PH

This shows the baby has not had enough oxygen during birth.

29 out of 1000 babies **Induction**

29 out of 1000 babies **Waiting**

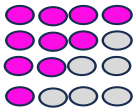
There was no difference between induction of labour and waiting.

Induction of labour reduced the number of shoulder dystocia and any fracture. There were no clear differences between groups Brachial Plexus Injury, Low Apgar Score and Low Arterial Cord PH.

How good is the evidence?

In all trials women and health professionals knew in advance whether induction was happening or not, which may have affected the results.

The quality of the evidence was high for any fracture moderate for caesarean section & cord ph and low for instrumental delivery Brachial Plexus Injury & Apgar Score.



High
Moderate
Low
Very Low

What's best for women?

A big baby is more likely to need delivering by caesarean section of instrumental delivery (using ventouse or forceps).

Caesarean section carries risks such as infection for mother and breathing difficulties for the baby. The mother may take longer to recover from a caesarean section rather than from a vaginal birth.

An instrumental delivery increases the chance of the mother having a vaginal tear, blood clot or incontinence.

Does inducing labour make a difference to the number of women needing a caesarean section or instrumental delivery?

Caesarean Section

289 out of 1000 women **Induction**

293 out of 1000 women **Waiting**

Induction of labour made no clear difference to caesarean section.

Instrumental Delivery

130 out of 1000 women **Induction**

152 out of 1000 women **Waiting**

Induction of labour made no clear difference to instrumental delivery.

Perinatal Damage

26 out of 1000 Women **Induction**

7 out of 1000 Women **Waiting**

Induction of labour may increase the number of woman with severe perineal tears.

Induction of labour made no clear difference to the number of women who needed a caesarean section or an instrumental delivery.

There is limited evidence that more women in the induction of labour group had severe perineal damage.

What does this mean?

There appear to be benefits from induction, but there may also be some disadvantages. The option should be discussed with parents when the baby is suspected to be big.

We need more trials to find out the best time to induce labour towards the end of pregnancy, and how to identify big babies more accurately.