Frimley Health NHS Foundation Trust

Management of suspected large for gestational age foetus in non-diabetic mothers

Key Points

- Identification of the LGA fetus must be confirmed on USS.
- Understand the role of GTT screening once an LGA fetus has been confirmed.
- Fetal weight of approx. >4000g (9lb) or >90thC may be at increased risk of labour complications, such as LSCS, shoulder dystocia, and 3rd/4th degree tears.
- Currently there is not enough evidence to recommend one method of delivery over another.
- Women should be provided with information about the different modes of birth so they can make an informed decision.

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1.0 Abbreviations

BMI	Body Mass Index
EDD	Estimated Date of Delivery
EFW	Estimated Fetal Weight
GDM	Gestational Diabetes Mellitus
HIE	Hypoxic Ischaemic Encephalopathy
HSIB	Health Safety Investigation Branch
IOL	Induction of Labour
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
SFH	Symphysis Fundal Height
USS	Ultrasound Scan

2.0 BACKGROUND

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

There is some evidence of both benefits and harms for induction of labour and for expectant management in women without diabetes with suspected fetal macrosomia, but there is uncertainty around this evidence.

The term large-for-gestational-age (LGA) or macrosomia is a term used for fetus or newborn with an estimated or actual weight > 4000g at delivery irrespective of gestational age as maternal complications and perinatal morbidity and mortality begin to rise from that birth weight.

The risks associated with LGA babies include shoulder dystocia which can result in brachial plexus injury (2.3-16%), fractures, hypoxic ischaemic encephalopathy (HIE) and stillbirth. In addition, larger babies carry an increased risk of developing type 2 diabetes later in life, have an increased risk of breast cancer pre-menopausal and an increased risk of becoming overweight.

For the mother, complications include prolonged labour, third- and fourth-degree perineal tears (3.8%) and post-partum haemorrhage (11%)[1,4,5].

The Boulvain Cochrane systematic review demonstrated that induction of labour between 37+0 and 40+0 weeks - rather than expectant management - can reduce some of these complications by reducing the birthweight[6]. HSIB has published a report to adopt these recommendations[5].

The aim of this guideline is to

1. To help staff provide women with information about the different modes of birth so they can make an informed decision as there is not enough evidence to recommend one method over another.
2. Discuss monitoring and timing of delivery at an appropriate birthweight without increasing the risks associated with the interventions.

2.1 DEFINITION OF SUSPECTED LGA

There is no standard definition of LGA, NICE guideline considers LGA baby as an Estimated Fetal Weight (EFW) >90th centile on the customised growth chart or EFW >4000g on an ultrasound[1]. This is expected to affect 10% of all pregnancies[1].

The evidence is less clear for the role of IOL in women whose babies are >90th centile but not >4000g. IOL can be discussed with these women, but the limitations of the evidence should be explained.

3.0 IDENTIFICATION AND MANAGEMENT OF LGA

3.1 ANTENATAL - Suspected LGA using SFH

Women identified with SFH plotted over >90th centile on the customised growth chart (see FHFT *guideline on the Identification and management of fetal growth restriction for generation and application of the customised growth chart*) should be managed as follows:

3.1.1 Serial SFH plotting >90th

If the serial plots show a linear pattern of growth >90th centile with no other concerns, refer to ANC by 37+0 weeks if EFW by SFH projects to be >4000g at 40+0. Request USS if no scan in the last 3-4 weeks.

3.2 Accelerative growth

If the serial plots show a growth rate that is faster or steeper than 90th centile line:

≤35+6 weeks	≥36+0 weeks
1. Refer for ultrasound scan. 2. If **EFW** >90th centile as per Gap & Grow, refer for OGTT within one week if not previously performed in the last 4 weeks. If normal OGTT within 4 weeks organise one week of BM testing. If GDM is diagnosed, refer to Diabetes ANC for further management (see FHFT guideline - *Diabetes in pregnancy*) If not diabetic, refer to consultant ANC by 37+0 weeks with an up-to-date USS if more than 4 weeks since the last USS. Women should be offered IOL between 37+0 – 40+0 weeks if baby is predicted to be ≥4000g by USS at 40+0.	1. Refer for ultrasound scan. 2. If EFW >90th centile as per Gap & Grow, offer home blood glucose monitoring for one week and inform diabetes specialist team. 3. If not diabetic, refer to consultant ANC by 37 weeks for counselling and plan for delivery. 4. Women should be offered IOL between 37+0 – 40+0 weeks if baby is predicted to be ≥4000g by USS at 40+0.

3.3 ANTENATAL – EFW >90thC using USS ≥36+0 weeks

1. If EFW >90th centile on ultrasound scan, offer home blood sugar monitoring for one week and inform diabetes specialist team
2. Refer to consultant antenatal clinic by 37+0 weeks for counselling and plan for delivery.
3. Women should be offered IOL between 37+0 – 40+0 weeks if EFW ≥ 4000g at 40+0.

3.4 ANTENATAL - Counselling for induction of labour (37+0 – 40+0 weeks)

Women should be counselled about the risks associated with macrosomia including shoulder dystocia and associated fetal complications, PPH and perineal trauma (*use LFD information leaflet, Cochrane review,* (Boulvain et al, 2016) regarding IOL at or near term for suspected fetal macrosomia), IDECIDE, BRAIN acronym.

They should be informed that USS is currently the most accurate way to estimate fetal weight. There is however an error margin of +/- 20%.

The reasons for offering IOL may be explained based on the Cochrane review by Boulvain et al (*See Appendix A*). The outcome of IOL versus expectant management for suspected LGA:

- Babies weigh on average 178g less when induced
- Risk of fractures is reduced from 20 per 1000, to 4 per 1000 babies
- Risk of shoulder dystocia is reduced from 68 per 1000, to 41 per 1000 babies
- Risk of brachial plexus injury shows no clear difference
- Risk of low Apgar score or low arterial cord pH shows no clear difference
- Risk of Caesarean section or assisted vaginal delivery shows no clear difference
- Risk of perineal trauma is increased from 7 per 1000, to 26 per 1000 babies

If the woman declines IOL and wishes to await events, offer and document a clear plan including a schedule for membrane sweeps if agreeable, and management in labour.

3.5 ANTENATAL - Counselling for Caesarean section

If the mother declines IOL and wishes to have a Caesarean section, she should be fully counselled about the risks and benefits. (see FHFT guideline *Caesarean section including Enhanced Recovery* and *NICE IOL guideline*). There should also be an agreed and documented plan of management should spontaneous labour occur prior to the agreed date of the Caesarean section.

4.0 INTRAPARTUM CARE

All mothers with estimated fetal weight > 90th centile by USS should be advised to labour in the obstetric-led unit. They should be counselled again about the risks of shoulder dystocia and the manoeuvres adopted to facilitate birth should it be required (see FHFT guideline *Shoulder Dystocia*).

LGA is not an indication for continuous fetal monitoring.

Women may use the pool for the first stage of labour but not second stage if estimated fetal weight is >97th centile (by USS not fundal height). See *Use of the pool during labour and birth* guideline.

Active management of the third stage should also be offered to mothers with routine use of:

- Syntometrine (unless contraindicated)
- Deferred cord clamping
- Controlled cord traction
- Oxytocin infusion

5.0 AUDITABLE STANDARDS

- Criteria for identification of suspected LGA
- Documentation of counselling about the risks of shoulder dystocia to mother and baby
- Documentation of management plan discussed including benefits, risks and alternative options in suspected LGA
- Escalation to and inclusion of neonatal team when LGA is suspected in labour

6.0 REFERENCES

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7.0 APPENDIX A – IOL infographic

Induction of labour for big babies

Cochrane Pregnancy and Childbirth

Trusted evidence. Informed decisions. Better health.

What is this review about?

Big babies (over 4000g 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 non-diabetic pregnant women with suspected large babies.

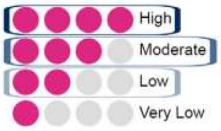
This infographic shows some of the results of the review comparing pregnant women who were induced at 37 to 40 weeks with women who waited for labour to start naturally.

Induction of labour at or near term for suspected fetal macrosomia
Boulvain M, Irion O, Dowswell T, Thornton JG
Full review: http://ow.ly/9Kbd300ts9W

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.



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 by 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.

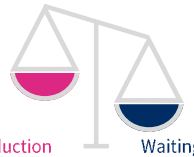
Brachial plexus injury

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 baby's health. A low score shows that the baby may 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 that the baby hasn't 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 babies who had shoulder dystocia or any fracture.

There were no clear differences between groups for brachial plexus injury, low Apgar score, or low arterial cord blood pH.

What's best for women?

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

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

267 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.

Perineal damage

26 out of 1000 women	Induction
7 out of 1000 women	Waiting

Induction of labour may increase the number of women 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 their 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.

Infographic by Helen West, Research Associate, Cochrane Pregnancy and Childbirth
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NHS National Institute for Health Research

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Full version control record

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This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date. This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version Control Sheet

Version	Date	Guideline Lead(s)	Status	Comment
1.0	Jan 2023	Nana Seiwaa Opare, ST6 Balvinder Sagoo, O&G Consultant	Final	First cross site version

Related Documents

Document Type	Document Name
Guideline	Identification and management of fetal growth restriction
Guideline	Diabetes in pregnancy
Guideline	Caesarean section including Enhanced Recovery
Guideline	Shoulder dystocia
Guideline	Use of the pool during labour and birth