The Management of Women Presenting with Reduced Fetal Movements
Lanarkshire September 2020

PURPOSE OF THIS GUIDELINE

Maternal **perception** of reduced fetal movements is a common unplanned presentation to maternity units across the UK. The introduction of this guideline aims to ensure a more efficient service by reducing inappropriate investigation and admission. This guideline aims to give healthcare professionals recommendations on how to assess and manage women presenting with reduced fetal movements.

Scope of this guideline

All healthcare professionals responsible for providing clinical care to women presenting with reduced fetal movements.

Who this guideline applies to

All women presenting with reduced fetal movements. It applies to singleton pregnancies only.

Introduction

Fetal movements are viewed as a reassuring sign of a healthy pregnancy.[1] Maternal perception of decreased fetal activity is a common complaint, and one of the most frequent causes of unplanned visits in pregnancy.[2] Women presenting with reduced fetal movements (RFM) have a higher risk of stillbirth, fetal growth restriction, fetal distress, preterm birth, and other associated outcomes.[3] Antenatal investigation of RFM aims to exclude fetal death and identify at risk pregnancies. Current RCOG guidelines have been introduced to improve the management of RFM and reduce the rate of stillbirth. The recently published AFFIRM study (2018) failed to show a statistically significant reduction in stillbirth with a RFM care package including offering IOL at 37wks for at risk women[4]. However it was only powered to detect a reduction of 30% and smaller reductions may have been present. It did improve detection of small for gestational age babies which is a risk factor for stillbirth. Rates of operative delivery and prolonged neonatal admission were also higher in the intervention group. It is important therefore to have a strategy to identify at risk babies whilst avoiding unnecessary intervention.

Definition

Fetal movements have been defined as any kick, flutter, swish or roll. Movements may plateau from 32 weeks, but there is no reduction in the late third trimester (RCOG GTG).

Within RCOG guidelines there is no universal agreed definition of RFM. A significant reduction or sudden alteration in fetal movements is potentially an important clinical sign. The Australian and New Zealand clinical guideline recommends that maternal perception of RFM should supersede any definition based on formal counting of movements. [5]

Antenatal Education

- All pregnant women should be routinely provided with verbal and/or written information regarding normal fetal movements during the antenatal period:
- https://www.rcog.org.uk/en/patients/patient-leaflets/your-babys-movements-in-pregnancy/
- All pregnant women should be advised to contact maternity day care or triage if they have concerns about RFM. It should be highlighted they should not wait until the next day.
- There is scant data to standardise what constitutes normal movements

Suggestion:

- When assessing RFM, women should be advised to seek a quiet area, lie on their side and focus on their baby's movements. If perceived movements remain reduced after 40 minutes, advise change of position, cold drink (anecdotal) and if movements still perceived as reduced over next 40 minutes, then contact midwife/triage as above

- Factors influencing maternal perception of movements
    - Anterior placentas may limit maternal perception of movements **up to 28 weeks**
    - Fetal presentation has no effect on perception of movements
    - Fetal position may have an effect – in women unable to feel movements despite being able to visualise movement on scan, 80% of spines were anterior
    - Major fetal malformation may reduce fetal activity although excessive movements have been reported with anencephalic foetuses
    - There are observational studies which suggest that corticosteroid administration can alter fetal movements for 48 hours following administration. This has not been definitively proven and should not be used to account for changes in movement

- Fetal sleep cycles occur regularly and last on average for 20-40 minutes, rarely exceeding 90 minutes
- Maternal smoking increases circulating carbon dioxide levels from 30 weeks and may influence fetal respiratory movements; there have been reports that maternal smoking is associated with decreased fetal movements
- Sedating drugs such as alcohol, benzodiazepines, opioids can have a short term effect on fetal movement

Antenatal care

- Midwives should ask about fetal movements at every routine antenatal appointment and should emphasise the importance of maternal awareness and perception of RFM. (Kick charts are not recommended)

Assessment

- On presenting with RFM a detailed history of movements should be taken.
    - Absence of movement?
    - Change in frequency, change in strength, change in pattern
    - Any response to conservative measures
- Women should be screened for risk factors for stillbirth and fetal growth restriction.
    - See APPENDIX 1 with RFM assessment proforma
- Clinical assessment of fetal size should be made in those presenting from 26 weeks via fundal height measurement (if nor done within past 2 weeks), and plotted on personalised growth chart as per GAP protocol
- Blood pressure and urinary assessment for protein should be made.
- Risk factors include:
    - Maternal age <16
    - Maternal age >40
    - Hypertension
    - Diabetes mellitus (type I, II)
    - Previous Stillbirth or Fetal Growth Restriction
    - Antepartum haemorrhage [similar to menses]
    - Maternal renal impairment

  - Antiphospholipid antibody syndrome
  - Known maternal thrombophilia
  - Low PAPP-A < 0.415 MOM
  - Smoker > 11/ day
  - Illicit drug use or alcohol
  - Recurrent presentations with RFM
  - Known Fetal growth restriction in current pregnancy
  - Fundal height measuring <10thy centile on personalised GAP Chart
  - Congenital abnormality
  - Issues with access to care
  - BMI > 40kg/m^2
- See APPENDIX 1 FOR RISK ASSESSMENT using these factors

Assessment in the community

- If there are no risk factors, the fetal heart is heard on auscultation and the woman becomes aware of a normal pattern of movement, then the woman can be reassured and advice given regarding monitoring movements as outlined in antenatal education above.
- If scored as high risk using APPENDIX 1 or there is ongoing perception of reduced fetal movements after 80 minutes, they should be referred to maternity day care unit/triage.

Assessment in maternity day care / triage

- Women presenting with reduced fetal movements should have risk factors assessed APPENDIX 1) and auscultation of fetal heart performed.
- Blood pressure recording and urinary testing for proteinuria should be made.
- All women $\geq$ 26 weeks gestation should undergo a SFH measurement (if not done with last 2 weeks) and CTG if $\geq$ 28 weeks.

Management

- Refer to APPENDIX 2 for flow chart assessment tool.
- If no fetal heart is heard on auscultation, an urgent USS should be performed to exclude intrauterine death.

- LOW RISK women with a single episode of RFM, no risk factors, a normal CTG and subsequent normal perception of movements may be discharged with advice regarding monitoring movements.
- Women with ≥ 1 risk factors and a normal CTG may be discharged but should return for a growth/Doppler/AF USS within 1working day (if not performed in past 2 weeks).
    - While this is desirable, it is recognised that capacity at the ultrasound department may not allow this, for example on a Monday. The next available appointment should then be sought.
- Women with no risk factors but an ongoing/persistent perception of RFM despite a normal CTG may be discharged but should return for an USS within 1 working day (as above)
- In the presence of an abnormal CTG the maternity team should be contacted immediately.
- In the presence of abnormal findings on USS (EFW <10th centile, significant tailing of growth, olighydramnios, abnormal dopplers), the woman should be reviewed by medical team and a care plan made.
- Women with any history of RFM >28 weeks and ≥ 1 risk factor.
    - If all assessments are normal, arrange medical review at their consultant antenatal clinic within 1-2 weeks.
    - An individual care pathway should be formulated and agreed based on the unique needs of each pregnancy.
- Low risk women presenting with a second episode of RFMs [**within 7 days of first presentation**] and a normal CTG should have ultrasound assessment of fetal growth, liquor volume and Doppler within 1working day (as above), if this has not been performed within the last 2 weeks.

Women presenting with recurrent RFM

- Women presenting with one episode of RFM and with normal investigations should be reassured that 70% of pregnancies are uncomplicated.
- Women presenting with recurrent (≥3) reduced fetal movements (**over a period of several days to a week**) or with RFM and risk factors at term should be discussed with the medical team (ideally named consultant) and a care plan made. This **may** include serial ultrasound scanning and CTGs or induction of labour after 39 weeks gestation if cervix is favourable.

Consideration of delivery planning

- Induction of labour is associated with increased risk of requiring intervention in labour which can include caesarean section delivery (30% CS rate in primiparous women) and adverse outcomes such as PPH. This inevitably increases the risk to subsequent pregnancies, including a risk of stillbirth associated with previous caesarean section. Therefore the decision to offer induction of labour in an effort to reduce the risk of stillbirth in the index pregnancy needs to take this into account.
- Decision to proceed with IOL should be a shared decision with the patient taking into account favourability of the cervix and risk of failed induction.

USS and CTG surveillance should be offered as an alternative to IOL where appropriate.

Suggestion:

- HIGH RISK women presenting with a first episode of RFM after 39 weeks should be offered induction of labour [to commence within 2 working days] following a vaginal examination and discussion of the relative risks and benefits
- ANY woman presenting with a second episode of RFM after 39 weeks (2 episodes within 1 week)should be offered induction of labour [to commence within 2 working days] following a vaginal examination and discussion of the relative risks and benefits of induction vs continued surveillance
- HIGH RISK women or those with recurrent reduced fetal movements presenting between 37+0 and 38+6 should be offered a vaginal assessment. If the cervix is found to be favourable then IOL may be offered. If cervix is unfavourable then ongoing surveillance using USS/CTG may be more appropriate.
- Women who have had consultant input during the antenatal period due to recurrent episodes of RFM should have an individualised plan for delivery at term based on the specific risk factors for that patient.

- Women with previous CS wishing trial of VBAC in whom IOL is suggested can be offered either IOL with foley catheter or elective CS following discussion of the relative risks and benefits.

References

1. Froen JF et al. Management of decreased fetal movements, Seminars in Perinatology 2008; 32 (4): 307-311
2. Davis L. Daily fetal movement counting. A valuable assessment tool. Journal of Nurse-Midwifery 1987; 32(1): 11-19
3. RCOG Greentop Guideline 57; Reduced Fetal Movements. February 2011
4. Norman JE, Heazell AEP, Rodriguez A, Weir CJ, Stock SJE, Calderwood CJ, Cunningham Burley S, Froen JF, Geary M, Breathnach F, Hunter A, McAuliffe Fm, Higgins MF, Murdoch E, Ross-Davie M, Scott J, Whyte S for the AFFIRM investigators. Awareness of Fetal Movemements and Care Package to Reduce Fetal Mortality (AFFIRM): a stepped-wedge cluster-randomised trial. Lancet 2018, 392: 1629-1638.
5. Preston S, Mahomed K, Chadha Y, Flenady V, Gardener G, MacPhail J, Conway L, Koopmans L, Stacey T, Heazell A, Fretts R and Frøen F for the Australia and New Zealand Stillbirth Alliance (ANZSA). Clinical practice guideline for the management of women who report decreased fetal movements. July 2010.
6. RCOG Greentop Guideline 31; The Investigation and Management of the Small–for–Gestational–Age Fetus. January2014

Originator: Dr L Kellison/ M McSherry
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Updated By: R Metcalfe /Dr S Maharaj/
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Appendix 1 **WOMEN PRESENTING WITH REDUCED FETAL MOVEMENTS**

INSERT ADDRESSOGRAPH HERE

CHI no ....

First name .... DOB ..../......../........

Last name .... Sex: ○ M ○ F

Address ....

RFM visit no: ....

CURRENT GESTATIONAL AGE........

GESTATIONAL AGE AT PREVIOUS VISIT ....

RISK FACTOR ASSESSMENT	Y	N
Major risk factors for SGA		
MATERNAL AGE >40		
CHRONIC HYPERTENSION OR CURRENT PRE-ECLAMPSIA		
DIABETES MELLITUS (Type I, II) [with vascular disease]		
SMOKER >11/DAY		
PREVIOUS STILLBIRTH		
PREVIOUS SGA		
LOW PAPP-A (<0.415 MOM)		
RENAL IMPAIRMENT		
ANTI-PHOSPHOLIPID SYNDROME/THROMBOPHILIA		
ANTEPARTUM HAEMORRHAGE		
DRUGS (Cocaine)/ ALCOHOL		
Minor risk factors for SGA		
MATERNAL AGE >35		
IVF SINGLETON PREGNANCY		
NULLIPARITY		
BMI <20 OR 25.1-39.9		
SMOKER ≤ 10/DAY		
PREVIOUS PRE-ECLAMPSIA		
PREGNANCY INTERVAL < 6 MONTHS OR >60 MONTHS		
LOW PRE-PREGNANCY FRUIT/VEG INTAKE		
Additional Risk Factors for Stillbirth		
MATERNAL AGE <16		
BMI > $40KG/M^2$		
FUNDAL HEIGHT <10th centile on GAP		
CURRENT FETAL GROWTH RESTRICTION (FGR)		
CONGENITAL ABNORMALITY		
≥ 3 PRESENTATIONS WITH RFM		
SOCIAL FACTORS		
FTA > 2 APPOINTMENTS		
SOCIAL WORK INPUT/ ASYLUM SEEKER		

ANY **ONE** OF THESE = **HIGH RISK**

ANY **THREE** OF THESE = **HIGH RISK**

ANY **ONE** OF THESE = **HIGH RISK**

APPENDIX 1 CONTINUED:

Suggested management:

22-24 weeks gestation: Fetal heart rate (FHR) auscultation

Risk assess as above

If normal FHR and not high risk: reassure and discharge

Otherwise consider ultrasound assessment

24-27+6 weeks Fetal heart rate (FHR) auscultation

Normal FHR and not high risk reassure and discharge.

Midwife follow up

Abnormal FHR or high risk: scan within 1 working day unless prior scan within 1 week

CTG interpretation at these gestations is difficult and may lead to inappropriate intervention

≥ 28 weeks CTG monitoring

NORMAL CTG and not high risk . Reassure and discharge. Midwife follow up.

NORMAL CTG and high risk factors. Arrange US scan within 1 working day unless had prior scan within 1 week. Normal scan, reassure and discharge. Midwife follow up.

SUSPICIOUS/ PATHOLOGICAL CTG - Refer on call medical team

ABNORMAL SCAN – Refer on call medical team

Signature: Designation: Date

Appendix 2 WOMEN PRESENTING WITH REDUCED FETAL MOVEMENTS