INTRAUTERINE FETAL DEATH

CLINICAL GUIDELINE MCSA.MBC.2.1

Definition

An absent fetal heart beat > 20 weeks gestation or estimated fetal weight > 500gm

Diagnosis

Real-time Ultrasound and second opinion to be obtained - visualisation of fetal heart and umbilical cord. Doppler ± colour if necessary.

1. **Counselling after diagnosis**
    - Break the news clearly, in a compassionate way, preferably in a private environment.
    - Take time and provide immediate emotional support.
    - If patient is alone, allow patient to call partner, family member or friend.
    - Aim to support maternal / parental choice regarding further management.
    - Provide written information on management options if necessary.
    - If mother is clinically stable, allow time for grieving – no need for immediate intervention.
    - Provide bereavement support and offer psychologist referral if needed.
    - Do not pressure couple to make decisions but develop a plan together.
    - Offer investigations to establish the cause.
2. **History**
    - Details of antenatal events and risk factors including hypertension, Diabetes Mellitus, Fetal growth restriction (FGR), abnormal screening examinations (biochemistry, ultrasound)...
    - Offensive PV Discharge, PV Bleeding, abdominal pain
    - SROM
    - Recent flu like illness
    - Exposure to any known viral illness
3. **Examination**
    - Temperature, blood pressure, pulse rate, respiratory rate
    - HGT (glucose), Hb
    - Urine Dipstix
    - Assess for pallor, edema, jaundice
    - Assess for uterine irritability → abruptio placentae or chorioamnionitis
    - Assess for signs of preeclampsia
    - Speculum → SROM or offensive PV Discharge
    - VE in the event of planned IOL

4. Investigations

- To determine:
  - Stability and wellbeing of mother.
  - Possible cause of death.
  - Chances of recurrence.
- To prevent further or recurrent complications.
- Parents to be advised that in 50-60% of cases no obvious cause is found, however if a cause is found it could influence future pregnancies.
- Parents should also understand that any abnormal test result may not necessarily be related to the IUFD.
- Post-mortem examination (fetus and placenta) to be discussed.

Routine tests for IUFD	**Notes**	**Comments**
• **FBC**	• If haemorrhage or longstanding IUFD	• If conservative mx → platelet count twice weekly to exclude DIC • Before regional anaesthesia
• **Kleihauer**	• Fetal-maternal haemorrhage (FMH) • If Rh negative → to determine anti-D dose.	• For all women: to determine if FMH is a cause • To be done ASAP, prior to delivery as cells can be cleared quickly from maternal circulation. • Consider repeat Kleihauer after 48h in Rh negative to see if sufficient anti-D was administered
• **Syphilis**	• Occult congenital infection	• For all women
• **HbA1C**	• Diabetes	• Women with GDM can return to normal HGT's within hours after IUFD.
• **Indirect Coombs**	• Immune haemolytic disease.	• Esp. if hydrops or fetus pale (clinically or at PM).
• **Microbiology** • Placental swabs (surface between amnion and chorion)	• Fetal or placental infections	• Need to be obtained using clean technique.
• **Placental histology**		• Consent essential.
Sample for genetic testing* • Amniocentesis • Fetal (blood, deep skin, fascia, cartilage) or • Placental (1 cm, fetal surface, close to cord)		• Written consent essential • In case of culture failure: PCR or MLPA

BOLD = tests of most value in most women without obvious clinical indicators

Tests on indication	**Indications**	**Comments**
• FBC, U+E, LFTs, CRP...	• If clinical signs of Preeclampsia; Sepsis; Haemorrhage; Multi organ failure	
• Bile Salts	• If signs of obstetric cholestasis	
• Fibrinogen , INR, PTT, Clotting time	• Assessment for post-IUFD DIC • Abruption placentae • Sepsis	• Not a test for cause • Consider if regional anaesthesia planned
• Blood cultures • MSU • Vaginal swabs • Cervical swabs	• If maternal bacterial infection is suspected, including Listeria Monocytogenes and Chlamydia.	Only indicated if: • Fever, Sepsis • Flu-like symptoms. • Discoloured, purulent or offensive liquor. • Prolonged ROM. • Abnormal bacteriology doubtful in absence of clinical / histological chorioamnionitis.
• TORCH • Parvovirus • Malaria, Tropical infections	• Occult congenital infection • Rubella only if non-immune at booking. • Parvo only if fetus pale or hydrops • If recently travelled	• Costly and very low yield or uncertain significance • Consider if history of fever, rash, contact
• Thyroid function – TSH, FT4, FT3	• Occult Thyroid disease	• Only if clinical signs
• Thrombophilia screen	• Questionable • Only if FGR or placental disease or recurrent pregnancy loss.	• Association between inherited thrombophilia and IUFD is weak and treatment in future pregnancies uncertain. • If abnormal, repeat at 6 week postnatal visit.
• Maternal Anti Ro- and Anti La antibodies.	• Occult autoimmune disease	• If hydrops, endomyocardial fibro-elastosis or AV node calcification at PM.
• Maternal alloimmune antiplatelet antibodies.	• Alloimmune Thrombocytopenia.	• If fetal intra-cranial haemorrhage at PM.
• Parental bloods for karyotype	• Parental balanced translocation - Fetal unbalanced translocation.	• Only if recurrent T1 M/C, previous unexplained stillbirth or IUFD, fetal abnormality at PM with failed genetic testing of fetus or placenta

• Maternal urine for cocaine, methamphetamines	• Occult drug use.	• If history suggestive. MUST GET CONSENT!
Microbiology • Fetal / cord blood • Fetal swabs	• Fetal or placental infections	• Fetal blood more informative than maternal serology. Swabs questionable. • Cord / cardiac blood (preferable) in heparin. • Need to be obtained using clean technique. • Obtain written consent.
• Post Mortem	• If suspicion	• Written consent essential.

5. Counselling regarding Post Mortem (PM) including placenta

- Explain how this might help find the cause.
- No cause found in ± 50% of cases but provides more information than other tests.
- Crucial for management of future pregnancies.
- Attempts to persuade parents must be avoided – individual, cultural and religious beliefs must be respected.
- Offer information on how a PM is done.
- Discuss appearance of baby afterwards.
- Stress the fact that the baby is treated with dignity.
- Discuss arrangements for transport.
- Discuss examination of cord, membranes and placenta, even if PM is declined.
- Parents who decline full PM should be offered limited examination PM, but they must understand that it is not as informative.
- Parents who decline full PM can be offered post-mortem CT/MRI if expertise available

Counselling regarding delivery process

- Mother's preferences need to be considered and respected.
- Her medical and emotional status and previous intrapartum history needs to be considered.
- Immediate steps towards delivery if DIC, Preeclampsia, SROM, abruption, sepsis.
- If stable, let the mother decide regarding her options.
- Should be informed that they are unlikely to come to harm if the delivery process is delayed for a short while
- They may however suffer great anxiety.

Conservative treatment (Expectant management)

- Patient should be provided with contact details for after hours.
- Should have no risk factors that require early intervention.
- Advised that value of PM may decrease.
- Appearance of baby may deteriorate.
- Inform them that most women labour spontaneously within three weeks of diagnosis.

- Twice weekly platelets, INR, PTT, Fibrinogen to exclude DIC.
- Offer further emotional support.
- Discuss that they may change their decision at any time and return for active management.

Active management

- Surgical evacuation can be offered as a safe alternative if fetal size is smaller than 24 weeks, and if a practitioner with the required expertise is available. This may however preclude a PM examination.
- If surgical evacuation is not indicated or possible, a vaginal birth is preferable over abdominal delivery unless there is an absolute contraindication for vaginal delivery.

1. Admission for Induction of labour (IOL)

- Admit to obstetric unit
- Pay special attention to emotional and practical needs without compromising safety.
- Allow for partner to be with her at all times.
- Place patient in a single room away from the sounds of other women and babies.
- Staff to be aware and responsive to individual and cultural approaches to death
- Initial vitals (BP, P, Temp, RR) and side room investigations (Hb, HGT, Urine dipstix) - If normal repeat 6 hourly
- Examination – pallor, edema, systemic signs of sepsis, clinical chorioamnionitis / abruptio, station, Size of baby, VE to assess cervix for IOL.
- If the parents have named the baby, address the baby by his or her name.
- Warn about difficulty in sex determination (may require genetic confirmation)
- Explain IOL process to patient.

2. IOL options

NB – No AROM unless abruptio!!!

Misoprostol (Cytotec®) FIGO Regime

20 – 26 weeks
- 200mcg PV/SL/bucc 4-6hrly (max 4 doses)
  Max daily dose 800 mcg
- Half dose if previous c/section.

27 – 42 weeks
- 25 mcg PV 6hrly (max 6 doses) or PO 2hrly max 12 doses
  If no contractions after first dose, subsequent doses of 50 mcg can be given
  If two or more contractions per 10 minutes, defer next dose
- Max daily dose 600 mcg
- Cannot use if previous c/section.

The induction-to-delivery interval is shortened if mifepristone 200 mg is given 12-48 hours prior to starting the misoprostol IOL

If no established labour after completing one cycle of misoprostol, the cycle can be repeated the next day, or oxytocin can be given (esp. if cervical dilatation 3-4 cm)

Oxytocin must not be started sooner than 4 hours after the last misoprostol dose

If no success with Misoprostol or if previous c/section after 27 weeks → rather opt for mechanical induction methods (Intracervical balloon or EASI)

Intracervical balloon or Extra-amniotic saline infusion (EASI)

Relative contra-indications:

- Overt lower genital tract infection.
- AIDS / HIV with unsuppressed viral load
- Rupture of membranes.
- If method used under these circumstances then antibiotic cover required (e.g. other methods have failed and no alternative suitable method).

Technique for intracervical balloon:

- Aseptic technique throughout.
- Pass sterile speculum.
- Disinfect the cervix.
- Choose catheter with at least 30mls bulb, preferably 50mls.
- Pass Foley's catheter tip through internal os of cervix.
- Inflate balloon and retract until resistance.
- Tie 500mls bag fluid to catheter and suspend over the edge of bed for traction or tape end of catheter to inner thigh of patient to allow mobilisation.

EASI technique:

- Considered if indication urgent or catheter expulsion has not occurred after 4-6 hours.
- Infuse initial 200mls N/saline solution at room temperature through intracervical catheter.
- Now at room temperature, infuse 40-50mls N/Saline per hour through intracervical catheter.
- Do not exceed 2L in total.
- Oxytocin can be commenced once catheter expelled (as per protocol).
- Use with caution in previous c/section.
- If completely impossible to do EASI, then consider Caesarean Section.

3. Analgesia

- <27 weeks — Morphine 15mg in 200mls of N/saline titrated to pain. Commence Infusion rate at 25mls/hr.
  PCA pump
- >27 weeks — As above or offer patient epidural.
  Assess for DIC prior to epidural (Platelets).

CAESAREAN SECTION

- If patient opts for c/section, general anaesthetic vs. spinal to be discussed with the patient.
- NPM for 6 hours unless emergency or clinically unstable.

POSTPARTUM

- Caregivers should be aware of and respectful towards the differences in individual and cultural responses to death
    - Discuss care of fetus with parents beforehand – consider culture and religion
    - If < 26 weeks: no Death Certificate (DH1663) will be completed
- Offer for couple to hold baby if they wish.
- If baby macerated, prepare the couple for the appearance of the baby
- If they have named the baby, address the baby by his or her name
- Offer artefacts of remembrance - photos, palm and foot prints, locks of hair (consent needs to be taken from the parents)
- If parents decline mementos – staff should offer to store them securely with the maternal records in the event they change their minds
    - Footprints and photo to be given to parents in sealed envelope
- Offer suppression of lactation - Cabergoline (Dostinex®, Arigoline®) except if Hypertensive or preeclamptic
- Thromboprophylaxis as per routine
- Postnatal bed away from other babies.
- Consider transferring patient to another ward if she is >6 hours post NVD or 24 hours post c/section in uncomplicated cases.
- Offer psychological counselling to patient and her family
- Be vigilant for postpartum depression

Postpartum Follow up

- Offer this earlier than the usual 6 weeks visit, to diagnose complicated grief – refer for professional help if needed
- Be prepared to answer all possible questions
- Discuss all results
- Discuss cause of the IUFD, chance of recurrence and means of prevention of further loss, depending on underlying cause
- Always give hope
- General Pre pregnancy advice:
    - Offer smoking cessation advice
    - Discuss BMI (if > 27) and weight loss before the next pregnancy
    - Discuss Rubella immunisation (if indicated)
    - Discuss preconceptual folate supplementation
- Discuss the benefit of delaying conception until psychological issues have been dealt with – Parents can be advised that the absolute chance of adverse events with a pregnancy interval of less than 6 months remains low and is unlikely to be increased compared with conceiving later
- Offer reliable contraception
- Discuss availability of parent support groups
- Promote a pre-conception visit

In the next pregnancy

- Detailed fetal assessment (first and second trimester) including ultrasound, Dopplers, serum markers [risk assessment for abnormal fetal and placental development]
- Aspirin 150 mg/d if high risk result for preeclampsia
- Screen for gestational diabetes at 24w – 28w
- Serial scans – fetal growth and AFI
- Umbilical artery Doppler at 26w, repeat Dopplers depending on fetal growth
- Consider delivery at 38w if unexplained IUFD – take into account the gestation of previous IUFD
- If not a repeatable cause, allow for spontaneous labour onset

Authorship

These guidelines were drafted by a clinical team from Mediclinic and were reviewed by a panel of experts from SASOG and the BetterObs™ clinical team in 2019 and revised by the scientific committee of BetterObs™ in 2022. All attempts were made to ensure that the guidance provided is clinically safe, locally relevant and in line with current global and South African best practise. Succinctness was considered more important than comprehensiveness.

All guidelines must be used in conjunction with clinical evaluation and judgement; care must be individualised when appropriate. The writing team, reviewers and SASOG do not accept accountability for any untoward clinical, financial or other outcome related to the use of these documents. Comments are welcome and will be used at the time of next review.

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Definitions

Term, Acronym or abbreviation	Definition
SROM	Spontaneous Rupture of Membranes (Pre-labour)
Vitals	Includes Heart rate, Respiratory rate, Temperature, blood pressure and saturation level
IUFD	Intra Uterine Fetal Death
EASI	Extra-Amniotic saline infusion
DIC	Disseminated Intravascular Coagulation
HGT	Haemoglucotest
sl	Sublingual – placing the medication under the tongue
Bucc	Buccal administration involves placing a drug between the gums and cheek, where it dissolves and is absorbed into the bloodstream

History and version control

Author	Version	Details of update	Effective date
Cape Gate Obstetrician Working Group	1	Initial Release	2017 10 01
External Expert Obstetrician	1.1	Validated	2017 01 01
A. Hall	1.2	Rebranded and edited to Mediclinic Clinical Guideline All drug names changed to active ingredient	2019 12 01
SASOG Scientific committee Dr C Groenewald	2.1	Reviewed Small changes to induction of labour	2023 01 10

Approval and sign-off

Approved by

Department/ Area/ Group/ Forum	Representative name	Signature	Designation	Date
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