EPAC Early Pregnancy Management Guideline MATY148	
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Applicable to: Hutt Valley District only	**Contact person:** CHOD O & G
Document Owner: EPAC RN/RM & O & G Registrar	**Senior Document Owner:** Director of Midwifery
Lead District: Hutt Valley	

Hutt Maternity Policies provide guidance for the midwives and medical staff working in Hutt Maternity Services. Please discuss policies relevant to your care with your Lead Maternity Carer.

Purpose:

The purpose of this guideline is to facilitate streamlined and consistent management of people within Hutt Valley DHB (HVDHB) who are having early pregnancy issues including:

- pregnancy of unknown location (PUL)
- miscarriage
- molar pregnancy
- unwanted pregnancy

We also aim to establish clear guidance for when to perform an ultrasound prior to 12 weeks and outline the referral criteria to the early pregnancy clinic (EPAC).

Scope:

For the purposes of this document, staff will refer to:

All staff within Te Whatu Ora Health New Zealand Capital, Coast and Hutt Valley. This includes staff not working in direct contact with patients/consumers. Staff are taken to include anyone engaged in working for Hutt hospital. This may include but is not limited to:

- Employees irrespective of their length of service
- Agency workers
- Self-employed workers
- Volunteers
- Consultants
- Third party service providers, and any other individual or suppliers working in Hutt Maternity, including Lead Maternity Carers, personnel affiliated with third parties, contractors, temporary workers and volunteers
- Students

Abbreviations and Definitions:

EPAC Early Pregnancy Assessment Clinic

PUL Pregnancy of unknown location: positive βhCG with no evidence of a pregnancy being intrauterine or extrauterine on transvaginal ultrasound scan

Ectopic pregnancy any pregnancy that has implanted outside of the body of the endometrial cavity

Heterotopic pregnancy there is both an intrauterine and extrauterine pregnancy

TV USS transvaginal ultrasound scan

βhCG β (beta) unit of human chorionic gonadotrophin

SHO Senior House Officer

IUP intrauterine pregnancy

SMO Senior Medical Officer

LMC Lead Maternity Carer

RMO Resident Medical Officer (includes both SHO and Registrar)

Guideline content

These guidelines reflect the most recent recommendations from the National Institute of Clinical Excellence (NICE), 'Ectopic pregnancy and miscarriage: diagnosis and initial management' published in April 2019, and the NZ Obstetric Ultrasound Guidelines published in December 2019.

This has replaced Hutt Valley Maternity "Miscarriage Management Policy" MATY081 and "MAU Molar Pregnancy Policy" MATY043.

The management of ectopic pregnancy is addressed in Ectopic Pregnancy Management Guideline (MATY041).

Contents

1. Ultrasound in the First Trimester

An uncomplicated pregnancy does not generally require an early dating scan and routine ultrasound should not be offered or requested simply to confirm an ongoing early pregnancy in the absence of any clinical concerns (MoH 2019).

The first ultrasound of the pregnancy should ideally be offered when the gestational age is thought to be between 12 and 13+6 weeks. This allows optimal assessment of fetal anatomy and nuchal translucency (NT) and confirms viability, gestational age, and the number of fetuses (MoH 2019).

Indications for early pregnancy scans (< 12 weeks) (MoH 2019)

- Bleeding or pain in early pregnancy, or concern about pregnancy loss
- Consideration of termination of pregnancy
- Unknown dates*
- Hyperemesis gravidarum
- Trauma
- Pregnancy with an intrauterine contraceptive device (IUCD) in situ
- Previous ectopic pregnancy
- Complex medical conditions where a change of medication may be indicated such as warfarin.

⚠ *** Please note: Confirmation of dates by ultrasound is not routinely required before the 12-week scan.**

The pregnant person should be informed a TVUSS will be offered

2. Referral Criteria to Hutt hospital EPAC

- Consideration of termination of pregnancy (provider or patient can also directly refer to the regional termination service Te Mahoe at Wellington Regional Hospital, or local services as appropriate).
- Confirmed miscarriage (if complications or pregnant person wanting medical or surgical management - not all miscarriage needs to be referred to the EPAC)
- Suspected molar pregnancy

- Suspected ectopic pregnancy (to be discussed with the on-call Gynaecology RMO prior to referral as this is an acute issue)
- PUL (to be discussed with the on-call Gynaecology RMO prior to referral to aid triaging and avoid mismanaging potential ectopic pregnancy in the community)
- Bleeding or pain in early pregnancy (to be discussed with the on-call Gynaecology RMO to aid triaging)

GP, LMC and ED REFERRALS ALL MUST INCLUDE

- Patient's name, NHI and contact information (cell phone number if possible)
- GP and LMC if there is one
- Referral letter including:
    - Referral criteria / indication for review (in electronic format where available)
    - LMP
    - Symptoms
    - Obstetric history and other relevant medical/social history
- Bloods:
    - βhCG level (if available), initial antenatal bloods (includes FBC and G+H)
- Ultrasound reports. Where the report is not available to the referrer, it must be documented which provider performed the scan.

NB – Incomplete referrals will not be accepted

3. Pregnancy Of Unknown Location (PUL)

- Pregnancy of unknown location is any pregnancy that has not been visualised by transvaginal ultrasound despite a positive βhCG.
- An ectopic pregnancy is any pregnancy implanted outside of the endometrial cavity, management of this is covered in Ectopic Pregnancy Management Guideline - (MATY041).
- Rare causes of raised βhCG, not in the context of pregnancy include placental trophoblastic tumours, ovarian tumours and posterior cranial fossa germ cell tumours (Sagili 2008).

βhCG and Pregnancy of Unknown Location (PUL)

- The βhCG level at which the gestational sac of an intrauterine pregnancy should be visible on a transvaginal ultrasound, with sensitivity approaching 100%, ranges in the literature from 1000 – 2400IU/L (Sagili 2008).

- The American College of Obstetricians & Gynecologists (ACOG) quotes a conservative level of 3500IU/L as 99% of pregnancies should be seen at this serum level and this decreases the risk of over-treating (ACOG 2018). **However, an empty uterus with a βhCG of this amount does not diagnose an ectopic pregnancy.**
  - In a pregnancy of unknown location with a βhCG >3000, the likelihood of a viable IUP is 0.5% (Doubilet 2013).
  - Misleading factors include;
    - M**ultiple pregnancy** – the βhCG level is required to be higher than in singleton pregnancies before a gestational sac is visible (Sagili 2008)
    - **Heterotopic pregnancy –** the rare condition of a co-existing intrauterine and ectopic pregnancy. Overall incidence 0.6-2.5 per 10,000 pregnancies. Increased incidence in people undergoing IVF or ovulation induction (MoH 2019)
- The four possible outcomes for pregnancy of unknown location include:
  - Failing PUL – can be intrauterine or extrauterine. Will never be seen on TVUSS
  - Intrauterine pregnancy
  - Ectopic pregnancy
  - Persisting PUL –βhCG levels don't decline, there is no evidence of trophoblastic disease and the location of pregnancy cannot be identified using TVUSS or laparoscopy – 2%

Initial Assessment of Pregnancy of unknown location (PUL)

- Take two βhCG measurements as near as possible to 48 hours apart (but no earlier) to determine subsequent management of a PUL
- Always give verbal and written information about signs and symptoms of an ectopic pregnancy and ways to seek help if required to person with a PUL.
- If the pregnant person has signs or symptoms of an ectopic pregnancy, they must be immediately referred to the RMO responsible for acute gynaecology, or if after hours, the on-call O&G registrar.

Finding	Key Points
No intrauterine fluid collection and normal (or near normal*) adnexae on ultrasound	• A single βhCG, regardless of level, does not reliably distinguish between ectopic and intrauterine pregnancy (viable or non-viable). However, if βhCG >1500 discuss with SMO prior to arranging outpatient follow-up given potential risk for ectopic pregnancy • If a single βhCG is <3000, presumptive treatment for ectopic pregnancy with the use of

	methotrexate or other medical or surgical means **SHOULD NOT** be undertaken, in order to avoid the risk of interrupting a viable intrauterine pregnancy • If a single βhCG is ≥3000, a viable intrauterine pregnancy is possible but unlikely; most likely diagnosis is a non-viable pregnancy. Get at least one more follow-up βhCG measurement and follow-up scan before undertaking treatment for ectopic pregnancy
Ultrasound not yet performed	• βhCG levels in ectopic pregnancies are highly variable, often <1000, and βhCG level does not predict likelihood of ectopic pregnancy rupture • When the clinical findings are suspicious for ectopic pregnancy, TV USS is indicated although the βhCG level is low

* Near normal (i.e. inconsequential) adnexal findings include corpus luteum, a small amount of free pelvic fluid or a paratubal cyst

Further Management Using βhCG in PUL (NICE 2019)

See appendix 1 for flow-chart

- **βhCG increases ≥ 63%** after 48 hours then this is **likely** an IUP, although an ectopic cannot be excluded.
  - Offer a TVUSS in 7-14 days or if the βhCG ≥1500 order a TVUSS earlier if clinical concerns
  - Ongoing management as per USS:
    - Viable IUP: order antenatal bloods, prescribe folic acid and iodine and advise the patient to book with a LMC
    - Non viable IUP: see missed miscarriage management guideline
    - No intrauterine pregnancy: repeat βhCG at least 48 hours after the last
      - <1500IU/L – likely failing pregnancy, do serial βhCG s

- ≥1500IU/L – likely ectopic but not diagnostic. Discuss with SMO

- **βhCG decreases ≥50%** after 48 hours the pregnancy is **unlikely** to continue but this is not confirmed.
  - Provide the pregnant person with verbal and written information about places they can access support.
  - Manage conservatively if asymptomatic:
    - Ask the patient to do a urine pregnancy test 14 days after the second βhCG.
      - If the test is negative, no further action is necessary
      - If the test is positive, contact the early pregnancy clinic

- **βhCG decreases <50%, or increases <63%** refer for clinical review in early pregnancy clinic
  - Do **NOT** actively manage these PUL's as it may lead to the interruption of a viable IUP
  - If the PUL persists and the patient remains asymptomatic, medical management can be used after failed expectant management

4. Miscarriage Diagnosis

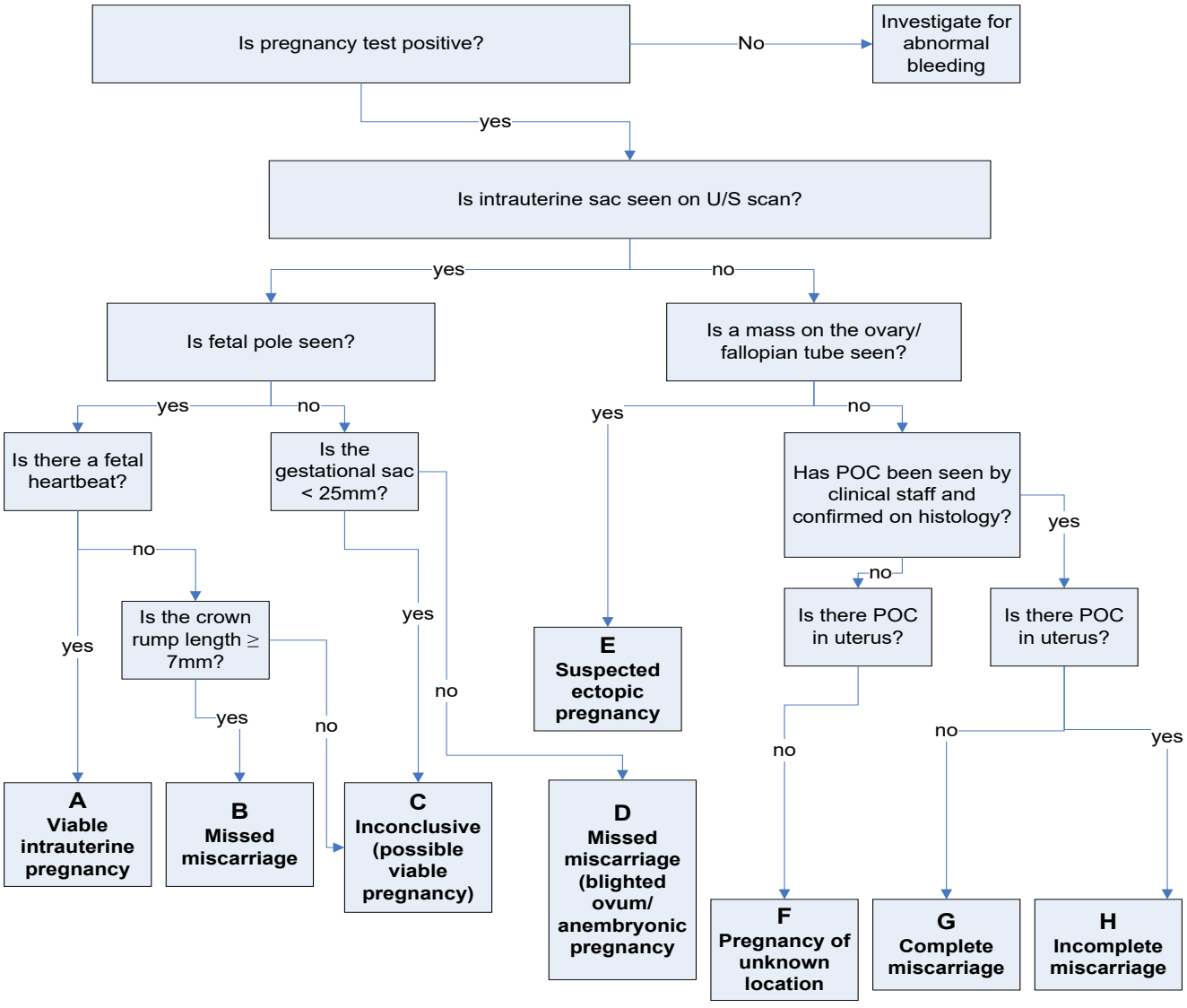
Terminology

- **Early Pregnancy**: gestation up to 12 weeks and 6 days.
- **Viable**: A pregnancy is viable if it can potentially result in a liveborn baby
- **Non-viable**: A pregnancy is non-viable if it cannot possibly result in a liveborn baby. Ectopic pregnancies and failed intrauterine pregnancies are non-viable.
- **Miscarriage**: The recommended medical term for pregnancy loss under 20 weeks is 'miscarriage' in both professional and personal contexts. *The term 'abortion' should not be used.*
- **Threatened miscarriage**: a viable pregnancy is confirmed by ultrasound, but there has been an episode of PV bleeding.
- **Intrauterine pregnancy of uncertain viability:** if TV USS shows an intrauterine gestational sac with no embryonic heartbeat (and no findings of definite pregnancy failure)
- **Missed miscarriage**: a non-viable intrauterine pregnancy. No fetal heart activity is seen, the gestational sac is intact, the cervix is closed and no POC have been passed. Size restrictions for sac and embryo size apply.
- **Incomplete miscarriage**: some pregnancy tissue has been passed but there is a clinical or ultrasound evidence of retained tissue.
- **Complete miscarriage**: all the pregnancy tissue has been passed and the uterus is empty.
- **Anembryonic pregnancy (blighted ovum):** the gestational sac has developed but the embryo hasn't.

- **(R)POC: (Retained) products of conception**. When discussing with women/pregnant people & their whānau, use terminology such as 'pregnancy tissue', not 'products of conception'.
- **Recurrent Miscarriage**: 3 or more consecutive first trimester miscarriages (RANZCOG).
- **Stillbirth**: fetal loss at > 20 weeks gestation or >400g
- **Molar pregnancy**: Abnormal and non-viable pregnancy tissue, a type of gestational trophoblastic disease

Maternity Assessment Unit Early pregnancy diagnosis algorithm:

Maternity Assessment Unit Early pregnancy diagnosis algorithm



Threatened Miscarriage

- Not everyone with a threatened miscarriage need to be referred to EPAC, please discuss with the on-call O&G RMO for advice before referring
- As per the NICE 2019 guidelines, advise patients with vaginal bleeding and a confirmed intrauterine pregnancy with a fetal heartbeat that:
  - If the bleeding gets worse, or persists beyond 14 days they should return for further assessment
  - If the bleeding stops, they should continue routine antenatal care

- If history of recurrent miscarriage, there is emerging evidence of the benefit of vaginal progesterone. These people should be referred to EPAC for review and discussion (Coomarasamy 2020)
- There is insufficient evidence to suggest that a threatened miscarriage before 12 weeks necessitates Anti-D (RANZCOG 2017)

Diagnostic criteria for Early pregnancy loss (NZ USS 2019)

At an initial or follow-up scan	On follow-up scan
1. CRL ≥7mm and no cardiac activity 2. MSD ≥25mm and no embryo or yolk sac	1. If the initial scan showed an embryo CRL <7mm with no cardiac activity and a repeat scan in ≥7 days shows no cardiac activity 2. If the initial scan showed a MSD ≥12mm with no embryo and a repeat scan in ≥7 days does not show interval development of a yolk sac or embryo 3. If the initial scan showed a MSD < 12mm with no embryo and a repeat scan in ≥14 days shows no visible yolk sac or embryo 4. If a yolk sac is visible on initial scan and there is no embryo with a heartbeat after 11 days 5. Absence of cardiac activity, which was seen to be present on earlier scan

⚠ **ALWAYS** seek a second opinion where there is any doubt about diagnosis of pregnancy loss. If required a follow-up scan in 1 week or more is recommended.

- NOTE: **A normal gestational sac grows at a rate of 1mm/day.** If the MSD is <10mm at the initial scan, the follow-up scan should be performed more than 14 days later. Using this rule, maternal anxiety should be reduced by avoiding repeated inconclusive scans and also decreases the number of unnecessary scans.

- **NOTE: No guidelines exist for TA assessment of pregnancy loss, if the person declined TV imaging, cautious clinical judgement must be used with a low threshold for follow-up imaging**

Initial Assessment

- Clinical assessment should be undertaken including medical history and examination if appropriate
- A non-viable pregnancy MUST be confirmed by formal USS or falling βhCG levels when the USS findings are inconclusive
- If the initial scan is inconclusive i.e. CRL < 7mm or MSD < 25mm, a follow up scan should be arranged in 7 to 14+ days (depending on findings, see above information regarding diagnosis).
- Rhesus status – if Rhesus negative, anti D will be required (see section on Anti-D)
- If pregnancy >12+6 week size, refer to Mid Trimester Pregnancy Loss Policy (MATY028)
- Consider STI screen (especially if risk factors or age <25) – person can self-swab

5. Miscarriage Management (including Recurrent)

General Management Considerations

- Be aware that pregnant people will react to complications or the loss of pregnancy in different ways, provide all people with information and support in a sensitive manner
    - Offer additional support and counselling if wanted including information leaflets, helplines or websites
- The pregnant person should be involved in their choice of management.
- All should be offered **expectant, medical** or **surgical** management.
    - Provide information regarding the treatment options and advise people of the risks and benefits associated with each approach

- Use expectant management for 7 to 14 days as the first-line management for a confirmed miscarriage (who is clinically stable).
    - These can be seen and managed in ED / community and do not all need to be referred to the EPAC.
- The choice of management option will take into account:
    - Amount of bleeding and haemodynamic stability
    - Signs of infection
    - Person's access to transport and hospital and ability to fulfil follow up criteria
- Inform and provide information on what to expect during the recovery period, when and how to seek help if new symptoms or concerns develop including a telephone contact
- Discuss future pregnancy plans. If a person is wanting another pregnancy they may attempt to conceive when they feel ready (no need to delay pregnancy). Ensure they have a prescription for folic acid and iodine.
- If not planning another pregnancy, discuss contraception and prescribe as necessary

Expectant Management

See appendix 2 – Miscarriage management flow chart

- Expectant management involves awaiting spontaneous passage of products.
    - People should be counselled as to what expectant management involves and the unpredictability and risk of bleeding and pain.
    - Most will need no further treatment
    - Higher success rate with incomplete miscarriage and small sac (<35mm)
    - There is a higher risk of needing further procedure, surgical or medical especially with increasing gestation i.e. late first trimester and a small risk of needing emergency evacuation in case of heavy bleeding.

Indications: All miscarriages (first trimester)

Explore other management options if:

- Increased risk of haemorrhage (i.e. late first trimester, coagulopathy, unable to have blood transfusion)
- Unable to return to hospital in case of heavy bleeding / lack of access to transport
- Suggestion of molar pregnancy
- Heavy vaginal bleeding / shock
- Clinical signs of infection
- Expectant management is not acceptable to the pregnant person

Process and Follow Up:

- Ensure the pregnant person has our contact details and written information on how to contact EPAC or ED
- Ensure provisions for anti-D administration are discussed with Rh-negative people; Anti D at diagnosis or within 72 hours of passage of POC
- Prescribe analgesia to take home – paracetamol, diclofenac (Voltaren), +/- codeine, tramadol and anti-emetic.
- Provide written information on what to expect and about further treatment options
- Phone call at two weeks (or earlier at the person's request)
    - If POC passed (on history) and bleeding settled, person to perform urine hCG in 3 weeks.
        - If urine hCG negative and asymptomatic, discharge/no further follow-up
        - If hCG positive, person to return for individualised care. Consider ultrasound. If significant RPOC (usually >2cm), offer medical or surgical management
    - If POC not passed or ongoing bleeding, offer follow up USS
        - If RPOC, offer medical or surgical management as appropriate
- Pregnant person may request medical or surgical management at any time if POC not passed
- Contact EPAC if any signs of infection
- Clinical history is more useful than follow up βhCG levels. If bleeding is not settling or increasing, this is suggestive of RPOC. If the person passes POC and the bleeding settles, this suggests that the miscarriage is complete.

Medical Management

See appendix 2 – Miscarriage management flow chart

- Medical management involves taking misoprostol
    - Misoprostol, a prostaglandin analogue, is used to induce uterine contractions that expel the pregnancy tissue from the uterus. Side effects include - nausea, vomiting, diarrhoea, pain and bleeding
    - Success rates of between 50-95% are quoted
    - Resolution rates are higher than expectant management, lower than surgical management
    - The pregnant person should be counselled of unpredictability and risk of bleeding and pain.

- As the gestation increases, the success rate decreases and the risk of needing a subsequent surgical procedure is higher. Medical management of a miscarriage carries higher rates of pain and bleeding with increasing gestations.

Exclusions:

- Unable to return to hospital if heavy bleeding / lack of access to transport
- Ultrasound and / or βhCG levels were not able to confirm a non-viable intrauterine pregnancy
- IUCD in situ (remove IUCD prior to misoprostol)
- Suggestion of molar pregnancy
- Heavy vaginal bleeding / shock
- History of allergy to misoprostol or prostaglandin
- Clinical signs of infection

Process and Follow-up:

- Obtain written consent including the "off-licence" use of misoprostol
- Prescribe Anti-D if required
- Provide person with first dose of misoprostol and prescription for second dose, anti-emetics and analgesia
  - Oral analgesia: paracetamol, diclofenac (Voltaren), +/- codeine or tramadol
  - Oral anti-emetic: ondansetron +/- metoclopramide
- Ensure contact information given if requires help or advice, written information including when to seek medical attention and what the follow-up plan entails
- **First dose**
  - 800 mcg misoprostol (4 tablets)
    - Offer vaginal misoprostol for both missed or incomplete miscarriage, oral or buccal is acceptable if it is the patient's preference
    - Must be prescribed by a doctor and will be dispensed in EPAC
- Offer a phone call **follow-up** from EPAC at 24 hours
  - If no miscarriage or obvious passage of products has occurred within 24 hours from the first dose then the person should take a second dose of misoprostol
- **Second dose**

- 800 mcg misoprostol (4 tablets)
    - Will be prescribed for patient to pick up at a community pharmacy (confirm with EPAC which pharmacies)
- 24 – 72 hours after commencement of medical management EPAC will call the person to assess their situation:
    - Do they need to take the second dose / Did they take the second dose of misoprostol?
    - Have they passed tissue?
        - If bleeding settling, for follow up urine hCG 3 weeks. If negative no follow up
        - If bleeding not settling for follow up ultrasound in 3 weeks consider ERPOC
    - If no POC passed
        - Review in EPAC in one week. If no POC passed, for ERPOC
        - Could consider repeat dose of misoprostol depending on person's wishes
- Bleeding should settle in 2-3 weeks. If ongoing bleeding for follow up scan consider ERPOC
- Clinical history is more useful than follow up βhCG levels. If bleeding is not settling or increasing, this is suggestive of RPOC. If the person passes POC and the bleeding settles, this suggests that the miscarriage is complete.

Surgical management (ERPOC)

See appendix 2 – Management of Miscarriage Surgical Management (ERPOC)

- A day case procedure under general anaesthetic, pregnancy tissue is removed from uterus using suction evacuation
- Involves risk of general anaesthesia and risk of procedure i.e. infection, perforation but is predictable and lesser risk of bleeding.

Recommended if:

- Haemodynamically unstable
- Infection (under antibiotic cover)
- Unacceptable bleeding
- May be preferred for late first trimester
    - It is the size of the pregnancy, not the reported gestation that should be used to make this decision
    - If pregnancy > 13/40, management should be medical as per Mid Trimester Pregnancy Loss Policy (MATY028)

- **If size 12-14 week then ERPOC may be an option but this must be discussed with an SMO and a junior registrar should not do this procedure**

Process:

- RMO to:
  - Complete planned acute OT booking form on Concerto
  - Telephone OT coordinator
  - Phone duty anaesthetist to inform them of patient
  - Consent the patient for ERPOC and for misoprostol
    - Ask patient if wishes pregnancy tissue (POC) returned to them and complete necessary paperwork if yes
  - Chart misoprostol 400 mcg 30-60 minutes pre-op (same for both primip and multip)
  - Consent, order and chart Anti-D if Rh negative (can be given in theatre)
- Ensure the patient knows we cannot guarantee a time or date for the procedure but it will likely be the following day, they will receive a phone call from the OT Co-ordinator around 0800 regarding timing for that day or potential to delay to following day
  - Ensure has written NBM instructions and SAU/DSU admission instructions
  - If any heavy bleeding to present to hospital for acute ERPOC as required
- Offer STI screening (can self-swab)
- Provide information on post-op cares
- Discuss future pregnancy plans. If the person is wanting another pregnancy they may attempt to conceive when they feel ready (no need to delay pregnancy). Ensure has prescription for folic acid and iodine
- If not planning another pregnancy, discuss contraception
  - IUCD or Jadelle can be inserted in OT if desired. Please provide the person with a prescription to pick up the IUCD or Jadelle to be inserted in theatre. **(Will need prescription to pick up IUCD to bring with them)**

Recurrent miscarriage

- Recurrent miscarriage is defined as the loss of three or more CONSECUTIVE pregnancies.
  - If aged 35 or over at the time of the second miscarriage, other investigations may be offered at this time

- Those with recurrent miscarriage should be offered investigation and follow-up
- Affects 1% of women/pregnant people
- If appropriate, people should be advised to stop smoking and to attain a normal BMI
- **If investigations are required, the following should be arranged:**
    - Screen for Anti-phospholipid syndrome (present in 15% of people with recurrent miscarriage): Anti-Cardiolipin antibodies, Lupus anticoagulant and beta-2-glycoprotein testing (need 2 positive results at least 12 weeks apart)
    - Screen for balanced translocation (present in 2-5% of recurrent miscarriage): Test the POC by cytogenetics, if unbalanced structural chromosomal abnormality karyotype both parents
    - Non-pregnant ultrasound to assess uterine anatomy (if never done prior)
- Thyroid function test if history of or symptoms of thyroid disease
- If second trimester miscarriage, a thrombophilia screen should be offered
- Patient should be offered referral to Gynaecology outpatient for follow-up - investigations should be arranged prior to GOPD appointment
- Most people with recurrent miscarriage fall into the "unexplained" category. The majority will have a successful subsequent pregnancy without pharmacological intervention.
    - Neither aspirin of low dose heparin are effective in this setting
    - There is emerging evidence that vaginal progesterone may improve outcomes for these people in some settings and can be considered at clinician discretion (Coomarasamy et al 2020)

6. Molar Pregnancy (NZGTD 2018)

Terminology

Gestational Trophoblastic Disease (GTD) refers to a group of disorders derived from a pregnancy. The term covers hydatidform mole or molar pregnancy (including complete and partial moles), invasive mole, gestational choriocarcinoma, placental site trophoblastic tumour (PSTT). The incidence of GTD is 1:200-1000 pregnancies, with evidence of ethnic variation.

- **Partial Mole:** Usually does not present with any specific clinical features.
    - Partial moles are triploid, with 2 sets paternal and 1 maternal haploid set, most often occurring following dispermic fertilisation.
    - An embryo is usually present that stops developing by week 8-9 and presents as an incomplete or missed miscarriage. The diagnosis is usually made on histology of products of conception.

- **Complete Mole:** May be suspected clinically.
    - Complete moles are usually diploid of paternal origin, derived from paternal duplication (75%) or dispermic fertilisation (25%) of an 'empty' ovum (lacking maternal genes).
    - The classic clinical features are
        - Vaginal bleeding in the 1st trimester
        - Excessive uterine size
        - Hyperemesis **and**
        - Markedly elevated βhCG titres.
    - Ultrasound is reliable and sensitive in diagnosis of complete mole but histological confirmation is essential.
- Placental site tumour is diploid from either a normal conceptus or a complete mole

Gestational trophoblastic neoplasia (GTN) is a term used to describe GTD requiring chemotherapy because of persistence of βhCG or presence of metastases. GTN is rare, however, the majority develop following a molar pregnancy (60% of all GTN cases). GTN most commonly follows a hydatidiform mole as a persistently elevated βhCG titre. Developing after a complete molar pregnancy 15-25% of the time and partial molar pregnancies 0.5-4%.

Diagnosis

- History
    - Any persistent vaginal bleeding after a pregnancy event is at risk of having GTN, a urine pregnancy test should be performed
- Clinical exam
- Pelvic USS
- Serum βhCG levels.

NB - HISTOPATHOLOGICAL CONFIRMATION IS MANDATORY TO CONFIRM DIAGNOSIS.

Surgical treatment of molar pregnancies

- Suction evacuation is the preferred initial management regardless of uterine size
    - Medical therapy has been associated with higher rates of chemotherapy

- The suction curettage should be performed by an experienced operator (an appropriately trained senior registrar or SMO) as the risk for uterine perforation and haemorrhage are increased
- The on-call O&G SMO should be informed prior to booking the patient onto a theatre list
- Inform anaesthetist at time of booking
- Preoperative investigations:
    - FBC
    - Group and hold
    - Baseline quantitative serum βhCG
    - If confirmed / high suspicion for molar: TFTs, LFTs, UEC, Coags, CXR
- Misoprostol can be considered pre-operatively for cervical ripening
- A suction catheter up to a maximum of 12mm is satisfactory
- Oxytocin infusion can be used after evacuation
- Send all products of conception for histological testing
    - Expert pathological opinion, by a pathologist with an interest in gynaecoloical pathology is recommended in the diagnosis of GTD
    - Pathology must be reviewed at a MDT meeting
        - All confirmed molar pregnancies MUST be referred to our local monthly Gynaecology-Radiology-Pathology MDT for review and discussion
- Anti-D for all non-sensitised Rh (D) negative patients

Initial assessment

- All patients with suspected or diagnosed molar pregnancy should be discussed with an SMO
- The visit should include:
    - Full history, including all pregnancies, LMP, evacuation date, oral contraceptive intake and symptoms
    - Information and discussion about the diagnosis and need for regular follow up.
    - Provide written information
    - Women should be advised NOT to conceive until their follow-up is complete
    - Clinical examination for metastatic disease, pelvic exam as required
    - CXR
    - Tumour hCG (t-hCG) as new baseline
    - Offer counselling

Patient Information – Link to Ministry of Health booklet Click here

Follow-up of a Molar Pregnancy

General aspects

- The doctor who performed the evacuation procedure is responsible for following up the histology and communicating this result to the patient. This result with also be reported to the SMO overseeing the case.
    - The patient follow-up can be a phone consultation (where appropriate) where the diagnosis and follow-up is discussed.
    - All patients with a confirmed molar pregnancy should be offered a face to face consultation if they prefer this.
- The EPAC service (nurse/midwife) has the responsibility for follow-up of tumour hCG results, the nurse/midwife running the clinic can discuss with RMO/SMO as needed.
    - Robust procedures need to be in place for the monitoring of results

Tumour hCG (t-hCG) follow-up

- Tumour hCG is different from βhCG in that is measures ALL hCG isoforms. The two assays are not comparable and patients undergoing follow-up after diagnosis of GTD should preferably have tumour hCG measured
- Schedule of t-hCG
    - On the day of diagnosis
    - Weekly thereafter until TWO normal levels are obtained
    - Partial mole: Stop as soon as t-hCG is negative
    - Complete mole: Monthly once normal levels are obtained for 6 months after normalisation
    - If no central/MDM pathology review has been performed assume complete mole follow-up

Clinical follow-up

- After the initial consultation, and provided the t-hCG is appropriately falling, the patient should have a phone follow-up with the EPAC nurse/midwife at 8-10 weeks to check that menstruation has returned and that adequate contraception is being used
- If the t-hCG has not fallen to normal by this point the patient should be discussed with an RMO/SMO to arrange referral to gynaecology oncology

- A clinic letter/GP note is sent to the General Practitioner (GP) informing them of diagnosis and follow up plan via EPAC, include recommendations for future pregnancy.

Contraception

- Reliable contraception is strongly recommended during the entire interval of hCG follow up.
- Oral contraceptives can be taken between evacuation and normalisation of hCG
    - There is no increased risk of invasive mole or choriocarcinoma developing from the use of oral contraceptives before normalisation of hCG
- An intrauterine contraceptive device (IUCD) should not be inserted until the hCG level is normal, the normal menstrual pattern has returned and at least 6 weeks after evacuation because of the potential risk of uterine perforation.
    - If chosen advise insertion by a gynaecologist
- Barrier methods are preferred during chemotherapy

Future pregnancy

- Risk of further molar pregnancy is 1:70
- The chances of conception and live birth after molar pregnancy do not differ from the general population
- In subsequent pregnancies the following steps are recommended
    - An early pelvic ultrasound (6-8 weeks) and a mid-trimester scan looking for molar pregnancy
    - βhCG level 6 weeks following the completion of all future pregnancies (regardless of outcome)

Criteria for referral to medical oncology for suspected GTN

- Histological diagnosis of invasive mole, choriocarcinoma or PSTT
- Plateau of tumour hCG lasts for 3 measurements, over a period of 3 weeks or longer (ie days 1, 7, 14, 21)
    - Plateau is usually defined as +/- 10%
- Rise of tumour hCG on 3 consecutive weekly measurements, over a period of 2 weeks or longer (usually defined as > 10%)

- Consider possibility of new pregnancy if tumour hCG is rising

- Serum hCG >20,000 >4 weeks after evacuation (because of risk of uterine perforation)
- Evidence of metastases in the brain, liver or GI tract, or >2cm on Chest X-ray.

Staging of GTN

- History and physical exam as outlined above for GTD
- Blood tests
  - FBC, UEC, LFT, Coags, TFTs, Group and hold
  - Baseline t hCG
  - HBsAg
- Radiology
  - CXR
  - Pelvic USS
  - CT abdomen and pelvis
  - Additional MRI head if pulmonary metastases present or neurological symptoms
- Staged according to FIGO 2000 criteria (please refer to NZGTD Guidelines 2018)

7. Unwanted Pregnancy

- Anyone wanting or considering termination should be offered a referral to the Regional Termination Service, or local services as appropriate. Currently this is Te Mahoe at Wellington Regional Hospital. This is so they can be fully informed about their options. Any clinical member of the maternity service can complete the referral (nurses, midwives, doctors). The pregnant person can also self-refer.
- Te Mahoe will accept all referrals (including self-referral)
  - Counselling is offered but not mandatory
  - Bloods and a scan are helpful but not necessary
  - USS only necessary when:
    - Unable to provide LMP of reasonable certainty within thresholds of eligibility
    - History or symptoms suggestive of high risk of ectopic pregnancy
    - IUCD in situ
    - History of tubal damage including prior ectopic pregnancy
- Services should:
  - Offer a sensitive approach and support person

- Offer of Social Work input if appropriate
- Be organised to minimise delays in care

- Options for termination include:
  - Early medical termination up to 9 weeks gestation (mifepristone 200mg followed by misoprostol 800mcg 24 hours later)
  - Surgical termination

- 5 – 14+6 weeks under local and sedation
- 15 weeks and over under general anaesthetic

8. Use of Anti-D in Early Pregnancy

- Offer all Rh (D) negative people (who have not actively formed their own Anti-D) a dose of 250IU IM Anti-D in all cases of miscarriage, termination or ectopic pregnancy (RANZCOG 2019)
- There is insufficient evidence to suggest that a threatened miscarriage before 12 weeks necessitates Anti-D.
- A blood test to assess for rhesus antibody titre should occur in all women prior to anti-D administration in order to detect those who have already been immunised.
- Anti-D is a blood product and written consent is required.
- Anti-D must be requested from the blood bank using the appropriate form and prescribed on the medication chart.

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RCOG Green-top Guideline No. 17. The investigation and Treatment of Couples with Recurrent First-trimester and Second-trimester Miscarriage. 2011

New Zealand Gynaecologic Cancer Group Guidelines. Gestational Trophoblastic Disease. Version 3 December 2018. https://www.health.govt.nz/system/files/documents/publications/gtd-guidelines-2018.pdf

Related Documents:

Hutt Maternity Guidelines MATY081 "Miscarriage Management Policy" 2014 and MATY043 "MAU Molar Pregnancy Policy" 2016 have been absorbed by this document.

- Ectopic Pregnancy Management Guideline - MATY041
- Mid-Trimester Loss Policy – MATY028

Keywords for searching:

1. Miscarriage
2. Molar pregnancy
3. Pregnancy of unknown location
4. MATY148

Informed Consent:

The right of a consumer to make an informed choice and give informed consent, including the right to refuse medical treatment, is enshrined in law and in the Code of Health and Disability Consumers' Rights in New Zealand. This means that a woman can choose to decline treatment, referral to another practitioner, or transfer of clinical responsibility. If this occurs follow the process map on page 18 of the Referral Guidelines (Ministry of Health, 2012).

Tangata Whenua Statement:

The Women's Health Service recognises the rights and responsibilities of Māori as tangata whenua and Treaty Partners. This allows and acknowledges the importance of cultural diversity in all aspects of our care and practice in Aotearoa New Zealand.

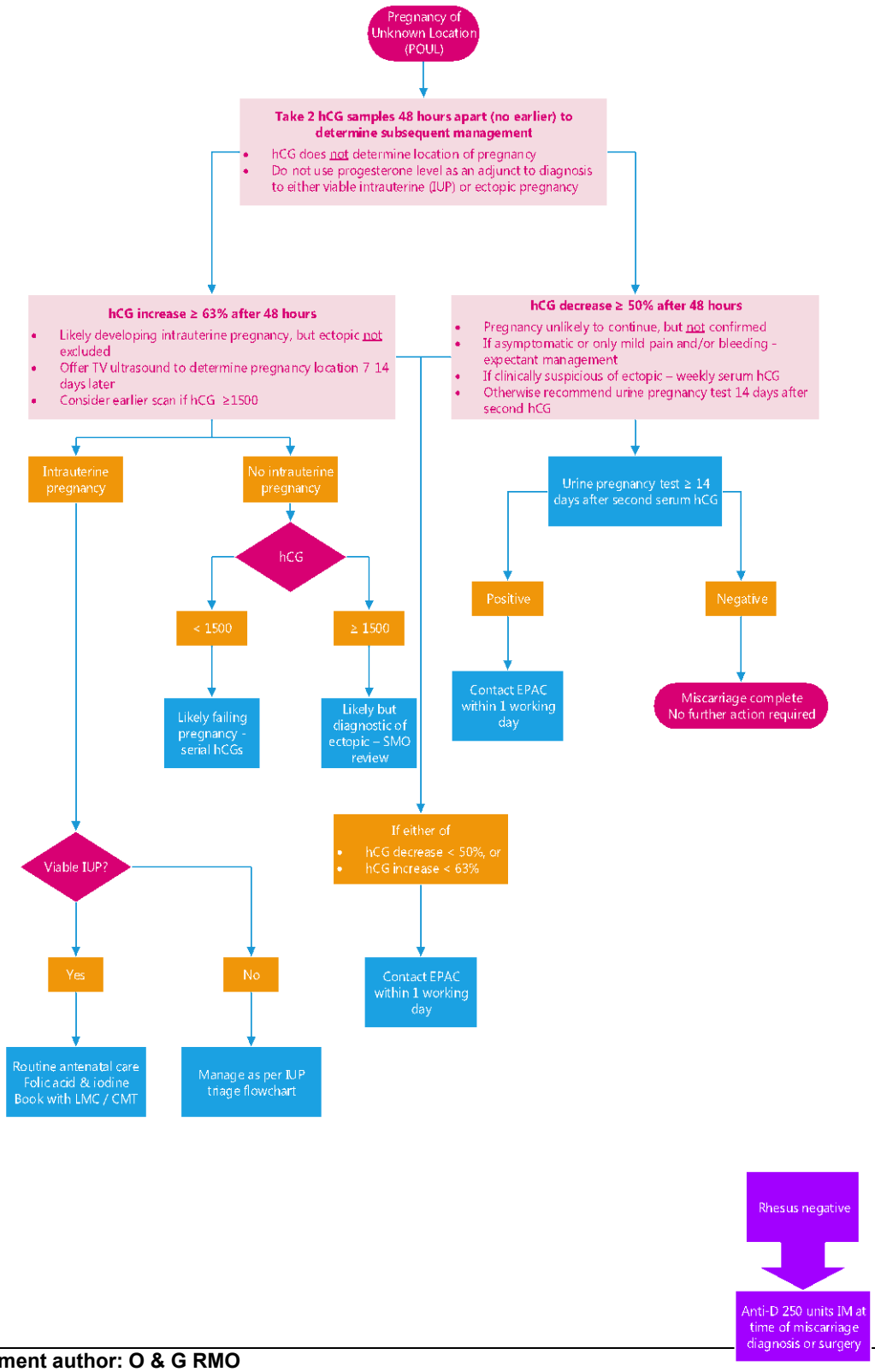
As stated in Te Pae Amorangi (Hutt Valley Māori Health Strategy) 2018-2027, Te Whatu Ora Capital, Coast and Hutt Valley as a Crown agency is committed to our role in maintaining active relationships with iwi, under Te Tiriti o Waitangi. This strategy recognises the established principles of Partnership, Participation and Protection and

recognises steps towards the reviewed interpretation of Te Tiriti principles to date (from the Wai 2575 claim into health). These are tino rangatiratanga, equity, active protection, partnership and options.

Attention in particular is drawn to:

- **Article one – Kāwanatanga**: actively engaging and working alongside with local iwi through the Hutt Valley Māori Health Unit
- **Article two – Tino Rangatiratanga**: Self-autonomy, self-determination; the responsibility to enable Māori to exercise their authority over their own health, determinants and definition of health
- **Article three – Ōritetanga**: equal health outcomes of peoples; ensuring that policy, guidelines or programmes do not further perpetuate any inequity
- **Article four (the 'oral clause') – Wairuatanga**: spirituality; thriving as Māori and the importance of health providers understanding health in te ao Māori (the Māori world), acknowledging the interconnectedness and inter-relationship of all living and non-living things.

Appendix 1 - Pregnancy of unknown location Flowhart



Appendix 2 – Miscarriage Management Flowchart