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# Protocol for Management of Ectopic Pregnancy

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## **Suspected ectopic pregnancy**

### **Initial presentation**

All women of reproductive age presenting with abdominal pain or vaginal bleeding and suspected to have ectopic pregnancy should have:

- 1 A positive urine pregnancy test
  - 2 Documentation of clinical history, any risk factors for ectopic pregnancy in the medical records.
  - 3 A full clinical assessment should be undertaken.
  - 4 An ultrasound scan (USS) if the pregnancy test is positive to confirm location and viability of pregnancy
- Only certified registrars should perform the scan and ultrasound findings should be recorded and images should be filed in the notes. The registrar should write their name and year of training clearly.
  - Perform serum  $\beta$ -hCG and serum progesterone assay following an 'inconclusive scan' (i.e. no intrauterine gestation sac with yolk sac or fetal pole seen).

### **Confirmed Ectopic pregnancy:**

The diagnosis may be made at first scan or after following the PUL algorithm.

#### **Symptoms**

- Amenorrhoea (not universal)
- Vaginal bleeding
- Lower abdominal pain
- Faintness / dizziness
- Shoulder tip pain
- GI symptoms -diarrhoea or pain on defecation

#### **Signs**

- Lower abdominal tenderness
- Adnexal tenderness and /or mass (gentle during examination, may trigger severe pain or rarely may cause rupture of ectopic)
- Cervical excitation
- Shock/Collapse

## Scan Findings:

### Uterine:

- an empty uterus
- Variable degree of thickening of endometrium
- An intrauterine pseudosac - collection of variable amount of fluid within uterine cavity, found in approximately 5% of all ectopic pregnancies

### Adnexal:

- A hyperechogenic tubal ring ('doughnut' or 'bagel' sign) is the most common finding on scan.
- A mixed adnexal mass – either tubal miscarriage or tubal rupture
- A gestation sac with a yolk sac or an embryo with or without a heart beat
- Fluid in the Pouch of Douglas

## Management:

***If patient is haemodynamically unstable for immediate resuscitation and surgical management.***

***If stable further management will depend on the clinical picture, BHCG levels and scan results.***

<b><i>hCG level</i></b>	<b><i>Clinical picture/scan</i></b>	<b><i>Method of Treatment</i></b>	<b><i>Expected hCG pattern</i></b>
Low < 1000 iu/L S progesterone <20	1) absence of clinical symptoms 2) no sign of rupture or intraperitoneal bleeding 3) a tubal mass of less than 4cm.	Expectant management / Medical management.	Steady downward trend (Repeat HCG after 48hrs and if downward trend repeat weekly)
1000- <3000 iu/L	1) Haemodynamically stable 2) Unruptured tubal or other ectopic pregnancy or Persistent trophoblast after salpingotomy 3) Normal LFT's, U & E's, and FBC  <b>Exclusion Criteria(for methotrexate)</b> 1) If there is any evidence of significant haemoperitonium. 2) Any hepatic dysfunction, thrombocytopenia (platelet count <100,000), (WCC <2000 cells cm <sup>3</sup> ). 3) Difficulty or unwillingness of patient for prolonged follow-up (average follow-up 35 days).	Medical treatment / Surgical management	There may be an initial rise of hCG (details of F/U on page 6/7)

	<p>4) Ectopic mass &gt;3.5cm</p> <p>5) The presence of cardiac activity in an ectopic pregnancy</p> <p>6) Women on concurrent corticosteroid therapy</p> <p>7) Co-existing intra-uterine pregnancy.</p>		
> 3000 iu/L	General condition- If stable for for laparoscopy. If in shock for resuscitation and laparotomy	Surgical treatment. Salpingostomy/ Salpingectomy	(48 hour level ought to be <35% for salpingostomy(1/3rd of pre-operative level). The practice is to repeat after 1 week. No follow up hCG is required after salpingectomy.

**IMPORTANT:** *Consultant review is essential if deviating from any areas of the protocol.*

### **A Guide to Choosing the appropriate treatment based on hCG Measurements and the expected Serial hCG patterns in the follow-up of ectopic pregnancy**

#### **Surgical management:**

##### **Laparoscopy**

##### **Advantages**

- Shorter hospital stay (1 – 2 days) –
- Significantly less blood loss –
- Less adhesions formation –
- Lower analgesic requirements –
- Quicker post operative recovery time –
- no difference in overall tubal patency rates (RR 0.89, 95% CI 0.74–1.1) between the two approaches.
- In women who desired future fertility (n = 145), the subsequent intrauterine pregnancy rates were similar (RR 1.2, 95% CI 0.88–1.15) and there was a trend toward lower repeat ectopic pregnancy rates if a laparoscopic approach was used (RR 0.43, 95% CI 0.15–1.2).

##### **Disadvantages**

Increased risk of bowel/vascular damage

A laparoscopic approach is superior to a laparotomy in terms of recovery from surgery

**Laparotomy** is to be preferred:

- in cases with haemorrhagic shock
- where a surgeon has inadequate experience of operative laparoscopy( In stable patient, can book for CEPOD theatre at time when experienced surgeon is available)

*Do what is safe in the circumstances.*

### **Salpingectomy v Salpingotomy**

In the presence of a healthy contralateral tube there is no clear evidence that salpingotomy should be used in preference to salpingectomy.

Laparoscopic salpingotomy should be considered as the primary treatment when managing tubal pregnancy in the presence of contralateral tubal disease and the desire for future fertility.

- The intrauterine pregnancy rates are similar when comparing the two groups (intrauterine pregnancy 60% versus 54%, RR 1.11 95% CI 0.74–1.68;)
- There is a trend towards higher subsequent ectopic pregnancy in the salpingotomy arm (recurrent ectopic pregnancy 18% versus 8%, RR 2.38, 95% CI 0.57–10.01).
- rates of persistent trophoblast from pooled data have been 8.1–8.3% after laparoscopic salpingotomy and 3.9–4.1% after open salpingotomy., hence need to monitor hCG postoperatively

***Discuss treatment with the patient and options of conserving or removing the tube.***

### **Follow-up regime after Salpingotomy**

While trophoblast remains in the tube it has a capacity to rupture.

- Check HCG 48 hour after surgery. (level ought to be <35% (1/3rd) of pre-operative level).
- Follow-up at weekly intervals until serum hCG level is <20 iu/L.
- If hCG level is rising or plateauing consider further treatment with Methotrexate or surgery if hCG levels >5,000

### **Medical management of Ectopic Pregnancy:**

Published studies have shown a success rate varying from 52% to 94% for single dose methotrexate.

### **Systemic Methotrexate Treatment in Ectopic Pregnancy**

Methotrexate is given intramuscularly as a single dose calculated from patient body surface area ( $50 \text{ mg/m}^2$ ).

## Treatment Protocol

1. Discuss options for management – expectant / surgical / medical.
2. Satisfy eligibility and exclusion criteria.
3. Counsel the patient and explain treatment protocol. Give information leaflet (see appendix B).
4. Organise base line blood tests, FBC, blood group, LFTs and U&Es
5. Check blood results, prescribe anti-D immunoglobulin if Rhesus-negative.
6. Record the patient's **height and weight** on the drug chart. (this is necessary to allow pharmacy to double check the prescribed methotrexate dose)
7. Prescribe **IM methotrexate at a dose of 50mg/m<sup>2</sup>** on the stat side of the drug chart.
  - The BSA can be calculated using the nomogram (see appendix A).
  - The calculated dose should be rounded to the nearest 5mg as pharmacy stock limited doses of prefilled syringes (70mg, 75mg, 80mg, 85mg and 90mg only). For doses outside this range please contact pharmacy.
8. Supply of the prefilled syringe of methotrexate is obtained:
  - By sending the drug chart to pharmacy during their working hours.
  - From the emergency cupboard outside of pharmacy working hours (The dose of methotrexate should be **independently double checked** by an appropriate practitioner).
9. Methotrexate is a cytotoxic and should be administered in accordance with the Cytotoxic Handling Policy.
10. The prefilled syringe of methotrexate should be administered IM into the buttock or lateral thigh. Let patient rest up to two hours. Check for any local reaction. If local reaction noted consider anti-histamine or steroid cream (very rare).
11. Arrange follow-up

## Regime

- Day 1 FBC, LFTs, U &Es, serum hCG and Methotrexate
- Day 4 serum hCG.
- Day 7 serum hCG, FBC, LFTs and U&Es
- Day 7 blood results should be reviewed by a senior doctor with regard to resolution, need for a second dose or surgical treatment. Expect a fall of > 15% between day 4 day 7 bHCG levels.
- Thereafter blood tests should be repeated once weekly until levels of hCG drop below 20 iu/L.
- If hCG fall is <15% offer a second dose of methotrexate.
- If hCG levels rise or patient becomes symptomatic admit for clinical review with a view for laparoscopy.
- Give patient information leaflet on methotrexate. (appendix B)

## Information for Clinician

1. Up to 75% of patients may complain of pain on days 3 – 7 (thought to be due to tubal miscarriage).
2. hCG levels may initially rise days 1 – 4 (up to 86% of patients).
3. Mean time to resolution is 35 days.
4. A second dose of Methotrexate may be given at 7 days if hCG levels fail to fall by more than 15% between day four and day seven. (14% of medically treated women will require more than one dose of methotrexate)
5. Risk of tubal rupture is 7% and the risk remains while there is persistent hCG.

6. Folinic acid rescue is not required for this single dose regime.
7. Folinic acid is recommended if patient develops side effects( sore mouth, ulcers).Dose is 15mg tablet 6 hrly \* 6 doses ,24hr after second dose of methotrexate.
8. TVS should be offered before discharging patient from EPU when the hCG has fallen <20iu.

## **Outcome**

- 90% successful treatment with single dose regime.
- Recurrent ectopic pregnancy rate 10 – 20%.
- Tubal patency approximately 80%.

## **Expectant Management of Ectopic Pregnancy**

- Not all ectopic pregnancies progress and pose a risk to the mother. Spontaneous resolution of tubal ectopic pregnancies has been well documented in a number of reports.
- The risk of rupture in a woman with an ectopic exists until the hCG level has fallen to <20 iu/L. Expectant management often involves frequent hospitalisation and/or follow up. Both the physician as well as the patient must be well motivated to accept the long recovery time.

## **Follow-up:**

- Monitor serum hCG levels twice weekly for first week and expect a 50% fall, and weekly thereafter until < 20 iu/L.
- rescan weekly till HCG < 20iu ( expect a reduction in the size of the adenaxal mass by 7 days)

## **PUL**

### **Positive pregnancy test and scan findings of**

No intrauterine sac or adenaxal mass.

Possible diagnosis:

- Complete miscarriage
- Ectopic pregnancy
- Very early IUP.

### **Clinical picture normal**

- Detailed history: LMP, Menstrual cycle pattern, any h/o passing clots with abdominal and pelvic pain.
- Blood for hCG, progesterone, gr and save.



- make patient aware of the need to return if pain increases.
- Make an appointment for serial  $\beta$ -hCG two days later in EPAU or ward 20 if visit falls on a weekend.
- Follow EPAU Flowchart when 'Inconclusive scan' ( appendix C)
- Telephone numbers to be provided for ward 20 and EPAU with appointment details before the patient leaves the unit in case of **increased** pain or **heavy** bleeding and need of advice.
- Document the plan of management in the patient's notes
- If there is evidence of a small early gestational sac (EGS) ,it is no longer classified as an inconclusive scan and  $\beta$ -hCG assays are not required.

### At Follow Up visit

- Review the previous blood results and any ultrasound findings. Expect a 66% rise in the hCG levels over 48 hrs interval.
- Review patient and her clinical symptoms
- Serum  $\beta$ -hCG assay every 2-3 days until a diagnosis is established.
- Discuss case with Senior Clinician( consultant) after three visits.
- When the serum hCG is >1000- 1500 IU/L then rescan to assess for evidence of an early intrauterine pregnancy or an ectopic pregnancy
- Interpretation of the serial serum hCG results will dictate the management plan

Follow up until a diagnosis is made of either; *early intrauterine pregnancy (IUP) viable or non-viable, complete miscarriage, ectopic pregnancy or pregnancy of unknown location (PUL)*.

### References

1. Royal College of Obstetricians and Gynaecologists. The management of tubal pregnancy. Greentop guidelines No. 21 (RCOG 2004, revised 2010)
2. Sowter M, Frappell J. The role of laparoscopy in the management of ectopic pregnancy. Rev Gynaecol Practice 2002;2:73–82.
3. Silva P, Schaper A, Rooney B. Reproductive outcome after 143 laparoscopic procedures for ectopic pregnancy. Fertil Steril 1993;81:710–5.
4. Stovall and Ling. Single dose Methotrexate: An Expanded clinical trial. AM J O & G 1993: 168; p 1759-1765.
5. Pansky et al. Local Methotrexate injection. A non-surgical treatment of ectopic pregnancy. AM J O & G 1989: 161; 393-396.

## Directorate of Women & Child Health

### Checklist for Clinical Guidelines being Submitted for Approval by Quality & Safety Group

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Chair of Group or Committee supporting submission:	Mr Andy Allman
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\* To be completed by Author and submitted with document for ratification to Clinical Governance Facilitator