PV Bleeding and/or pain in early pregnancy

Possible diagnosis for bleeding and pain are
- Pregnancy of unknown location
  - Possible intrauterine pregnancy, miscarriage, ectopic pregnancy
- Miscarriage
  - Threatened miscarriage
  - Incomplete miscarriage
  - Complete miscarriage
- Ectopic pregnancy
- Non-pregnancy related causes

Other differential diagnoses include
- Gynaecological
  - Adnexal pathology: Corpus luteum cyst pain, ruptured cyst, tubo-ovarian torsion
  - Pelvic infection
- Renal/urinary system
  - Cystitis /UTI /Pyelonephritis
- Gastrointestinal system
  - constipation /appendicitis /diverticulitis etc.

Obtain a thorough general and gynecological history including
- Age
- Menstrual history:
  - LMP, frequency and regularity → Use to calculate period of amenorrhea and therefore estimated gestation
- HPI
  - Bleeding → attempt to estimate duration and flow (number of pads used, clots, flooding), and trend (worsening vs easing)
  - Abdominal/pelvic pain → onset, duration, nature, location - midline or unilateral
Other associated symptoms: nausea, vomiting, light-headedness

- Past gynaecology history:
  - Pap smear history: Any abnormal smears in the past and treatment
  - Contraception
  - Sexual history and PID history
- Obstetric history: Previous pregnancies, outcomes
  - Particularly history of miscarriages, ectopic pregnancies, assisted conception (IVF)
- Significant past medical and surgical history, allergies, medications and relevant social/family history, smoking, D&A

Examination
- General appearance
- Vital signs, UA
- Abdominal examination for tenderness and masses.
- Gynaecological examination (speculum/vaginal exam) should be performed in all cases of PV bleeding
  - Inspect cervix for bleeding, dilatation, masses
    - Products of conception at external so should be gently removed with a sponge holding forceps and sent for histopathology (Especially if heavy bleeding is present, or patient is bradycardic and hypotensive)
  - Inspect lower genital tract for bleeding and abnormal masses
- If relevant, swabs should be collected for culture, chlamydia and gonorrhoea PCR (High vaginal and endocervical).

Investigations
- FBC
- G&H (cross match if unstable or actively bleeding)
- Quantitative serum hCG
- Urinalysis +/- M/C/S
- Pelvic ultrasound

Management
- Perform the ABCs of resuscitation
- The O&G registrar should then be consulted. Management options include
  - Outpatient management: EPAC follow up
  - Admission: observation, surgical intervention
- Inform the surgical registrar should there be a suspicion of an acute abdomen
- **Rhesus negative mother** with no anti-D antibodies
  - will need anti-D in consultation with O&G
  - Anti D is given as an intra-muscular injection, 250IU for all the first trimester singleton pregnancy complete, confirmed miscarriages. Other cases to be discussed with O&G


<table>
<thead>
<tr>
<th>Miscarriage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 – 20% of all clinically recognised pregnancies will end up in a miscarriage</td>
</tr>
<tr>
<td>• Majority of them are due to chromosomal or genetic abnormalities and often are random events</td>
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<tr>
<td>• Majority of women will give birth to normal foetus in the subsequent pregnancy</td>
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<tr>
<td>Pain with positive pregnancy test with or without bleeding should create the suspicion of an ectopic pregnancy</td>
</tr>
<tr>
<td>Conduct history taking and investigations as per pain/PV bleeding in pregnancy</td>
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<tr>
<td><strong>Management</strong></td>
</tr>
<tr>
<td>See Procedure for management of early pregnancy loss (intrauterine pregnancy) on intranet.</td>
</tr>
<tr>
<td>• Expectant management ➔ EPAC</td>
</tr>
<tr>
<td>o It is not necessary for all women who have a miscarriage to have a D &amp; C. It is safe to manage a miscarriage conservatively</td>
</tr>
<tr>
<td>o The earlier the gestation, the more likely conservative management will succeed</td>
</tr>
<tr>
<td>o There is no increased risk of infection with conservative management and antibiotics are not usually necessary</td>
</tr>
<tr>
<td>o Refer to EPAC for ongoing management</td>
</tr>
<tr>
<td>• Medical management ➔ EPAC</td>
</tr>
<tr>
<td>o Can be arranged through EPAC</td>
</tr>
<tr>
<td>o Involves the use of the prostaglandin Misoprostol to stimulate the uterus to contract and completely expel the pregnancy tissue</td>
</tr>
<tr>
<td>o Ongoing follow up and review is required through EPAC</td>
</tr>
<tr>
<td>• Surgical management</td>
</tr>
<tr>
<td>o Dilatation and Curettage (D &amp; C) performed under general anaesthetic</td>
</tr>
<tr>
<td>o Hemodynamically stable patients may have an elective procedure (➔ EPAC)</td>
</tr>
<tr>
<td>o Whereas hemodynamically unstable patient may require emergency management (➔ ED)</td>
</tr>
</tbody>
</table>

Patients may present during course of expectant or medical management with pain and heavy PV bleeding. Follow management of heavy PV bleeding as above. May require surgical management.
Ectopic pregnancy and PUL

See procedure: Procedure for ectopic pregnancy and pregnancy of unknown location on intranet.

Pregnancy of Unknown Location (PUL)
A descriptive term applied to the situation where there is a positive pregnancy test but no evidence of either an intrauterine pregnancy (IUP) or an EP on transvaginal scan (TVS).
- PUL is an interim diagnosis, not a final diagnosis
- The final diagnosis is one of 4 categories
  - IUP
  - EP
  - Resolving PUL
  - Persisting PUL
- The earlier in the pregnancy a woman is seen, the more likely her initial assessment will be PUL as the pregnancy is simply too small to see on ultrasound
- The main concern about a PUL is that it may be an EP and therefore cause complications for the woman.
  - Of initial ultrasound PULs, only 7 – 20% will be diagnosed as EP
  - However, of persisting PULs, the majority or 70% are EP

Ectopic pregnancy
An extra uterine pregnancy
- 95% are tubal: Ampullary (70%), Fimbrial (11%), Isthmic (12%) and Interstitial (2%)
- A small proportion could have ovarian, abdominal or cervical ectopic.
- Occurs in about 1-2% of all pregnancies or live births.
It is the leading cause of pregnancy related maternal death in the first trimester.
The natural history of tubal ectopic pregnancy includes: Spontaneous Resolution, Tubal Miscarriage, Tubal Rupture

Risk factors
- Previous ectopic pregnancy
- Previous history of tubal surgery
- Assisted reproduction – IVF
- Previous history of pelvic inflammatory disease (PID)
- Use of intra uterine contraceptive device (IUCD), progesterone only contraceptive previous sterilization

Clinical features
- Symptoms of possible Ectopic Pregnancy
  - Amenorrhea (not universal)
  - Vaginal bleeding, faintness/dizziness
  - Shoulder tip and/or lower abdominal pain
  - Diarrhea or pain on defecation
- Signs of possible Ectopic Pregnancy
  - Lower abdominal tenderness +/- puritanism
  - Cervical excitation tenderness
  - Adnexal tenderness and/or adnexal mass (gentle VE to avoid rupture)
  - Shock/collapse

Differential Diagnosis
- Miscarriage
- Intrauterine pregnancy - corpus luteum / ovarian cyst
Management of ectopic pregnancy

- Options for EP management are surgery (salpingectomy or salpingostomy), methotrexate (MTX) or expectant management
- Most women will need surgery or Methotrexate
- Expectant management is only appropriate for the small number EPs with low and spontaneously falling HCG levels

Medical

- Hemodynamically stable patients with a beta-chg. of <5000 IU and no fetal cardiac activity seen on the USS and no significant abdominal pain are usually suitable for medical treatment.
- These patients need to be managed through the EPAC service.
- They will need FBC, EUC, LFT and beta-hCG on the day zero.
- They will be followed up in EPAC with repeat beta-hCG at day 4 and beta-hCG, LFT, EUC and FBC on day 7.
- Patients who had less than 15% drop of beta-hCG from day 4 to day 7 will need a second dose of methotrexate.
- 10% or less will need surgery but 7% will need reasonably urgent surgery because of heavy internal bleeding mostly due to tubal rupture
- Ongoing follow up is critical for this option.
- Patients must have effective contraception and avoid pregnancy for 3 months

- Therapy: Methotrexate as a 50mg/m², single intramuscular injection.

Surgical

- Indications for surgery (rather than methotrexate):
  - Is hemodynamically unstable
  - Suspected tubal rupture (persistent severe abdominal pain, >300mL free peritoneal fluid, sizeable drop in Hob)
  - Is in severe pain (mild pain is normal)
  - Has a preference for surgery
    - Doesn’t want the more time-consuming follow up required after MTX or is likely to be poorly compliant or can’t get to the ED easily in an emergency
    - Can’t agree to wait 3 months before conceiving again
    - Wants sterilisation
    - Doesn’t want to run the risk of needing
      - Emergency surgery for ruptured ectopic
      - Blood transfusion – the risk is slightly higher after MTX than with more elective surgery
  - Has had a previous ectopic in that tube
  - Has contraindications to MTX
    - Breastfeeding another child
- Significant medical conditions
  - Immunosuppression including corticosteroid therapy
  - Serious intercurrent infection
  - Severe disease of liver, kidneys, lungs
  - Bone marrow suppression
  - Active stomach or bowel ulceration. If the patient has, for example, ulcerative colitis which is currently quiescent, a single dose of MTX may be reasonable but consultation with her gastroenterologist is necessary
- Sensitivity to MTX
  - Has an EP where the chance of successful MTX treatment is less
    - HCG > 5000 IU/L, Fetal cardiac activity
- Laparoscopy is the gold standard for surgical management of EP
  - Salpingectomy is preferred to salpingostomy because of the increased risk of recurrence and persistent trophoblastic disease

**Expectant management**
- Spontaneous resolution will occur in approximately 10-18% of ectopic pregnancies
- Criteria for expectant management are strict
  - Woman is asymptomatic
  - HCG < 1000 IU/L
  - HCG level is steadily declining (not plateauing)
  - Tubal mass < 3cm
  - No signs of tubal rupture and little haemoperitoneum (< 100mL) on TV scan
  - Woman is clinically stable
  - Woman is prepared to come for regular follow up
- It is rarely recommended. O&G registrar and specialist input required prior to recommending this option
Hyperemesis gravidarum

About 1% of women have HG where vomiting is associated with up to 5% weight loss and need for admission

- While total hCG is not usually increased, in some cases the hCG is structurally abnormal pregnancy of unknown location

Sequelae of severe HG

- Electrolyte imbalance.
- Wernicke’s encephalopathy (vitamin B1 deficiency)
- Vitamin B6 and B12 deficiencies can also occur
- Mallory Weiss tear or reflux esophagitis
- VTE
- Muscle wasting
- Depression and family stress (> 60%) request for termination
- TFT abnormalities (usually of no significance)
- No increase in miscarriage or stillbirth but significant increase in elective termination and increase in LBW if HG extends throughout pregnancy

Investigations

- Bloods:
  - FBC, EUC, LFT
  - TFT abnormalities (usually of no significance)
- Urine:
  - MSU, regular UA
- Ultrasound:
  - Dating plus exclude twins and molar disease

Management

- Isotonic IV fluids
- Vitamin B complex (especially Vitamin B1 100mg IV stat and then weekly)
- Antiemetic: Metoclopramide, Ondansetron, Doxylamine
- Antacids: Ranitidine
- VTE prophylaxis
- Psychological support for patient and family ++
- Non-pharmacological methods such as small meals, bland food, ginger – while useful for mild N&V, not so useful for severe cases
- On ward: Fluid balance, maternal weight, 4-hourly obs
Pelvic inflammatory disease (PID)

A disease that commonly occurs during the reproductive years
May be (mostly) sexually or non-sexually acquired
- Chlamydia is isolated in most cases, gonococcus and anaerobes also can also cause PID
- If untreated, can lead to chronic PID, pain, infertility and risk ectopic pregnancy

Risk factors
- Multiple sexual partners, without barrier contraception
- New sexual relationship
- Termination of pregnancy or gynaecological surgery
- Recent IUCD insertion

Presentation
- Abdominal pelvic pain
- Fever
- Abnormal vaginal discharge or bleeding
- High WCC and neutrophilia and elevated CRP
- US may show findings of tubo-ovarian abscess or hydro salpinx

Differential diagnosis
- Cystitis /UTI /Pyelonephritis
- Appendicitis
- Ovarian Cyst accidents such as rupture or torsion
- Ectopic pregnancy or miscarriage

Investigations:
- FBC, CRP, hCG, MSU for culture + chlamydia and gonorrhoea PCR
- Vaginal examination for swab collection (HVS for culture, endocervical swab for chlamydia and gonorrhoea PCR
- Vaginal examination may elicit cervical motion tenderness, adnexal tenderness and abnormal discharge.

Management of PID (See Also Therapeutic Guidelines via CIAP)
- Severe PID (as inpatient)
  o Ceftriaxone 1g IV daily for 48 hrs plus
  o Azithromycin 500mg IV daily plus
  o Metronidazole 500mg IV BD
    o Severe or immediate penicillin allergy who can’t have ceftriaxone
      ▪ Gentamicin 5mg/kg IV daily (max 2 doses)
      ▪ Clindamycin or Lincomycin 600mg IV TDS
  o When substantial clinical improvement change to a choice of oral therapies as per Australian Therapeutic Guidelines (eTG)
- Mild to moderate PID (as outpatient)
  o Azithromycin 1g PO single dose stat plus
  o Ceftriaxone 500mg IV/IM single dose stat plus
  o Metronidazole 400mg PO BD for 14 days AND either Azithromycin 1g PO single dose 1 week later OR Doxycycline 100mg BD for 14 days (not pregnant or breast feeding)
- Preventing reinfection is therefore critical
- It is **mandatory** to make sure the partner is investigated and treated properly and the best way to do this is via Parramatta Sexual Health Clinic at 158 Marsden St Parramatta (98433124).
- You should give the partner a referral which, without mentioning any names says: 'The partner of the person bearing this referral was recently treated for PID. Please review and treat him as necessary'. Provide any positive test results from the woman to guide care.
  - Always collect **first pass urine** (at least 1-2 hours after last void) and/or cervical swabs for PCR and culture **before** starting antibiotics. It's first-pass because the infection is usually in the urethra, not the bladder.
  - Test of cure for chlamydia and gonorrhoea infections are not routinely recommended unless symptoms do not resolve, suspected poor compliance or in pregnancy (should not be performed less than 3 weeks after treatment as PCR will still be positive until then).
  - Test of reinfection must be offered 3 months following treatment
    - Critically important because: Reinfection rate 13.9% for chlamydia. Reinfection rate 11.7% for gonorrhoea.
Ovarian cysts and torsion

Ovarian cysts are common and rarely cause pelvic pain.

- Note that ovulating women make a ‘cyst’ every cycle that may be up to 2-3cm in size prior to ovulating
- Common differentials include:
  - Cyst haemorrhage, rupture
  - Torsion: Ovarian torsion is primarily a clinical diagnosis, with support of other investigations (→ refer to O&G registrar urgently, if clinical suspicion present)
  - Malignancy

**Simple cyst**
- <5cm in size in a premenopausal woman can be managed conservatively
  - provide adequate symptomatic management
  - requires follow up with GP /Gynae clinic
- >5cm in size, regardless of menopausal status
  - consult with O&G registrar
  - likely needs gynaecology clinic follow up at the next available clinic

Complex cyst, bilateral cysts, presence of ascites will also require O&G registrar consultation
- Cyst of any size with significant free fluid in the pelvis or doppler indication of torsion in someone with the history of pain needs to be seen by the O&G registrar

Ovarian torsion occurs when the adnexa rotate around the infundibulo-pelvic ligament or ovarian ligament therefore occluding the venous +/- arterial supply to the organ
- Most torsion occurs in the presence of an ovarian mass (usually >5cm in diameter)
- It may occur in pre-menarchial girls

Common findings include
- Lower abdominal pain and tenderness
- Low grade fever, mild nausea and vomiting
- Leukocytosis
- Ultrasound is ~50% sensitive in detecting torsion, and diagnosis should be based on clinical findings

Any person presenting with a suspected ovarian torsion should be referred to the O&G registrar for urgent review
- Definitive management of an ovarian torsion is surgical: laparoscopy with de-torsion
Heavy menstrual bleeding/Menorrhagia

The definition is >80ml bleeding per cycle
- History of passing clots, excessive number of soaked pads changed and any symptoms of anaemia may indicate menorrhagia
- History and examination must include an assessment of amount of blood loss.
- It is important to ask the Pap smear history (differential diagnosis of cervical mass)
- Use of hormonal medications or contraception
- Pallor, tachycardia, postural drop in blood pressure and enlarged uterus (fibroid uterus) on examination may be found.
- A speculum exam should be done to assess amount of bleeding and to examine the cervix
- FBC, G&H, beta hCG (to rule out pregnancy), T4/TSH, coags and pelvic USS

Management
Aim to reduce or arrest acute bleeding
- Perform the ABCs of resuscitation
- Obtain bloods: FBC, coags, G&H
- Involve the O&G reg in the management
- Progestogen tablet can be started as Primolut 10mg TDS or QID initially
  - The dose can then be tapered once bleeding stops until seen as an outpatient.
- Tranexamic acid 1g TDS orally can be added to the progestogen
- Other options include oestrogen therapy, but is rarely used and requires prior O&G registrar review of the patient

Long term medical management
- Investigate for and exclude secondary causes (structural, hormonal, malignancy)
  - The patient should be treated accordingly, once the primary cause is determined
- Dysfunctional Uterine Bleeding is a diagnosis of exclusion.
  - NSAIDS such as Naproxen sodium or Mefanemic acid from the onset to the end of each period may be used.
  - Tranexamic acid 1g tds from the start to the end of each period may be used
  - Combined oral contraceptive pill is useful in many cases especially if there is associated dysmenorrhoea or oral progestogens.
  - Mirena intrauterine device (IUD) is effective in menorrhagia.

Surgical management
- Is discussed at the gynaecology clinic
- It will vary from endometrial ablation, myomectomy to hysterectomy depending on the diagnosis and patient preference.
**Emergency contraception**

Emergency contraception (EC) is used after unprotected sexual intercourse or when contraception may have not worked properly, to reduce the risk of an unintended pregnancy.

Emergency contraception is available through the community pharmacies without a prescription (LNG-ECP form only)

Options include:

1. A 1.5mg single dose levonorgestrel emergency contraceptive pill (LNG-ECP), licensed for use up to 72 hours (three days) after unprotected sex; available from pharmacies as an over the counter medication
2. Insertion of a copper intrauterine device (IUD) within 5 days of unprotected sex, which also provides very effective long term contraception (prescription required, and insertion by a trained Medical practitioner)

It is important to establish if a history of sexual abuse has occurred

- appropriate forensic examination maybe required, social work referral, STD screening, treatment for PID +/- hep B vaccine and follow up organized
- Please liaise with the ED Registrar or consultant in all cases.

Exclude current pregnancy by performing a serum/urine hCG

Follow up

- Pregnancy test repeated in 3-4 weeks to exclude pregnancy. This can be done by her GP
- Referral to Family planning NSW or a GP is required to discuss long term contraception needs
- Discuss pap smears and encourage screening
Obstetric emergencies will generally be referred directly to delivery suite. The following guidelines are for an RMO assessing an obstetric patient in ED.

**Trauma in pregnancy**

*See Procedure: Trauma in Pregnancy on intranet*

### Less than 20 weeks
- Perform assessment as per non-pregnant patient
- Inform the O&G registrar in all cases
- Look for specific injuries that may be relevant to the obstetric patient
  - Abdominal pain and tenderness
  - PVB
- Use ED USS/Doppler to look/listen for fetal heart rate
- Determine Rhesus status and collect blood for antibody status and Fetal Maternal Hemorrhage Quantification
  - Anti-D may need to be given if Rd. negative - liaise with the O&G Registrar

### More Than 20 weeks
- The seriousness is usually indicated by the external injuries and the force of impact
- All cases require an urgent O&G registrar consultation +/- trauma alert through the hospital emergency system (ph. 111)
- The major cause of fetal death is maternal death so caring for the mother is the first priority.
- After 24 weeks remember to tilt the woman on a slight left lateral tilt, unless contraindicated by suspicion of spinal injury
  - This increases her venous return / cardiac output by 25%
  - If there is a risk of cervical spine injury, it may be necessary to tilt the whole patient on a board.
- Remember there are some important physiological changes in pregnancy
  - Increased blood volume and other adaptations means the pregnant woman’s vital signs often don’t start to change until she has lost > 1000mL blood (cf 750mL in non-pregnant) so it’s easy to underestimated blood loss.
  - She has a 10% increased oxygen consumption because of fetus but a 10% reduction in functional residual lung capacity (with no change in respiratory rate or peak flow) so she can become hypoxic more easily.
  - She has a mild respiratory alkalosis with pH 7.44 rather than 7.4, pCO2 30mmHg rather than 40mmHg, pO2 90-100mmHg
  - She has mild metabolic acidosis with HCO3 20mmol/L rather than 24mmol/L which makes buffering further acidosis from trauma more difficult than for non-pregnant woman
  - She has reduced lower oesophageal sphincter tone, reduced gastric motility, increased gastric acidity → greater risk of and consequences from aspiration
- Assess for vital signs, PVB and abdominal tenderness
- Take blood for blood group, antibody screen, and Feto-maternal Hemorrhage Quantification
- Mild to moderate injuries need 4 hours (from the time of injury) of observation
- CTG is done for the gestations more than 25 weeks, generally for a minimum of 6 hours from time of injury unless it is very minor.
Antepartum hemorrhage
- Vaginal bleeding after 20 weeks
- Caused by placental abruption, placenta Previa and non-pregnancy related causes such as cervical ectropion/cancer, vaginal trauma etc.
- All cases require an O&G registrar consult

Management
- IV resuscitation as appropriate
- 16G IV cannula (x2 if severe)
- G&H (X-match 4 units if severe, plus FFP 4 units for every 4-6 units of PC), cogs, FBC and Kleihauer and RBC antibodies.
- IV Saline or Hartmann’s
- Foetal monitoring to be commenced as soon as possible
- Call the O&G team urgently or safely transfer the patient to the birthing unit (BU) after informing the BU staff and the obstetrics registrar.

Cord prolapse
- This is an Obstetric emergency that requires prompt delivery
- Call delivery suite and O&G Registrar immediately (ph. 111 and inform of Obstetric emergency)
- Put the patient in reverse Trendelenburg position
- Establish IV access and collect blood for FBC, G&H
- Avoid any manipulation of the cord
  - This could lead to vasospasm or cord compression however gently replace it in the vagina and cover it with a moist sponge (soaked in lukewarm saline) in order to prevent it from drying
- Transfer the patient to BU or theatre when safe, as directed by the O&G registrar

Breech in labor/partly delivered
This is potentially an Obstetric/Neonatal emergency (if unplanned and occurring in the ED) Call delivery suite and O&G and Neonatal registrar
- Do not attempt breech delivery maneuvers yourself unless the mother is spontaneously delivering
  - If so, receive the baby and clamp the cord and start resuscitating if needed until the obstetric/neonatal team arrive
  - Request patient not to push if possible until the help is available or on transfer
- Establish IV access and collect blood for G&H, FBC
- Ensure a working neonatal resuscitaire is available, and checked
- Aim to transfer to BU when safe, as directed by the O&G registrar

Preeclampsia and eclampsia
Preeclampsia is Gestational Hypertension plus significant proteinuria (>30mg/mmol creatinine on spot urine test or > 300mg/day on 24-hour collection) and/or other features of multisystem compromise including feto-placental compromise
- Severe preeclampsia with hypertension >170/110mmHg is a medical emergency
- Commonly associated with headache, visual disturbance and epigastric pain and vomiting.
- May present with vomiting as only symptom – never disregard vomiting in the third trimester
- There may be brisk knee jerks and ankle clonus

For all cases of pre-eclampsia presenting to the ED, the O&G registrar should be consulted

The potential acute adverse events are:
- Haemorrhagic stroke
- Eclamptic fits
- Placental abruption
- Pulmonary edema
- Renal and hepatic failure
- Thrombocytopenia, DIC and coagulation disorders
- Intrauterine growth restriction

Management of Hypertension
See Procedure: Management of severe hypertension in pregnancy on hospital intranet.
- Collect bloods: FBC, EUC, Coags, LFTs and perform a UA for investigations
- Monitor BP hourly whilst in the ED
- Ensure patient compliance with previously prescribed anti-hypertensives

- Labetalol (PO or IV) is first line antihypertensive for severe hypertension
- Monitor I/O closely and ensure that IV fluid is is carefully considered.
  - It is usually wise to restrict fluid therapy in severely pre-eclamptic patients to reduce the risk of APO, while awaiting O&G registrar review
- Prepare the patient for transfer to the Birth Unit for further monitoring

Management of eclampsia
Eclampsia is a generalized, tonic-clonic seizures in a woman with pre-eclampsia
It may occur after 20 weeks of gestation, and up to one-week post-partum
- **This is an Obstetric emergency** (Activate an ALS through ph. 111 – Mention obstetric patient)
  - Seek senior ED staff assistance immediately. The patient should ideally be triaged to the resus bay
  - Call the Obstetrics registrar/BU staff for help
  - Inform the neonatal registrar if fetus is viable and gestational age is >24 weeks
- Perform the ABCs of resuscitation
  - Protect the airway, administer oxygen
  - Ensure IV access through a large bore cannula
- Prevent/minimize the maternal injury, assess vital signs.
- Collect bloods: FBC, EUC, LFT, Uric acid, coags and G&H
- Perform urinalysis especially for proteinuria
- **1st line management for eclamptic seizure:**
  - Commence MgSO4
    - Loading dose of 4g over 30 min (use premixed bags from pharmacy/birth unit)
    - Followed by 1g/h IV infusion
  - Monitor: BP, PR, RR, deep tendon reflex and neurological check
  - IDC and hourly urine output monitoring
Benzodiazepines may be used as a second line agent to arrest seizure
(MgSO4 has been shown to be more effective than Phenytoin, Benzodiazepines in preventing further seizures)
  - Monitor closely for Mg toxicity, especially in patients with renal failure
  - It is contraindicated in women with Myasthenia Gravis

Management of hypertension
  - IV Labetalol or Hydralazine may be used as per the Management of Severe Hypertension in pregnancy protocol

Continuous monitoring of the fetus if >24 weeks
Transfer the patient to BU as soon as its safe

Rarely, a peri-partum Caesarean Section may be indicated to assist maternal resuscitation of a collapsed patient
  - This should be done by the Obstetric registrar after careful consideration. In the most urgent situations, it may be performed in the ED
  - Neonatal/anaesthetic staff should be on standby to receive the delivered fetus
  - Equipment required: Betadine skin prep, scalpel size 22 or 10