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BACKGROUND INFORMATION

APH complicates 2-5% of pregnancies and is defined in some literature as any bleeding into or from the genital tract after the 20th week of pregnancy. Identifiable causes of APH are recognised in 50% of cases, and in the other 50% of cases the cause for the APH is indeterminate or unknown. Blood loss is often underestimated and the amount visible may only be a portion of the total volume of the haemorrhage (e.g. with a concealed placental abruption), therefore clinicians immediately need to assess not only the amount of blood loss, but also observe for signs of maternal clinical shock and fetal compromise or demise.

Women with a history of APH are at increased risk for adverse perinatal outcomes including small for gestational age and growth restricted fetuses, therefore initiation of serial ultrasounds is recommended. Other risk factors include increased risk for oligohydramnios, premature rupture of membranes, preterm labour and increased rates of caesarean section. Women diagnosed with placental abruption or placental praevia are at increased risk for postpartum haemorrhage.
APH from unknown causes before 34 weeks gestation is associated a 60% risk of delivery within a week if accompanied by contractions. Without accompanying contractions the risk is still 13.6%, therefore administration of corticosteroids is important.

**KEY POINTS**

1. On admission the triage midwife in the Maternal Fetal Assessment Unit (MFAU), the Coordinator of the Labour and Birth Suite and the Obstetric Registrar/Consultant should be advised of any women who presents with an APH which may lead to maternal or fetal compromise.

2. A ‘CODE BLUE – MEDICAL’ call should be initiated if a women presents with an APH and is haemodynamically unstable, or if significant haemorrhaging is occurring which can lead to clinical shock.

3. Speculum examination shall be use to assess the vagina and cervix and identify cervical dilatation. Digital examination should be avoided for women with an APH until placenta praevia is excluded.

4. All women presenting with an APH should not be discharged home until review by the registrar or Consultant.

**CAUSES OF A.P.H.**

Causes include:
- Placental site bleeding
- Local causes from the genital tract
- Unknown causes

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**DEFINING THE SEVERITY OF AN APH**

There are no consistent definitions of severity of an APH, however RCOG defines blood loss by a combination of volume and signs of clinical shock to guide management²:

- **Spotting** – staining, streaking or blood spotting noted on underwear or sanitary protection
- **Minor Haemorrhage** – blood loss less than 50 ml that has settled
- **Major Haemorrhage** – blood loss of 50 – 1000 ml, with no signs of clinical shock
- **Massive Haemorrhage** – blood loss greater than 1000 ml and/or signs of clinical shock
INITIAL ASSESSMENT

If a woman presents with an APH and is haemodynamically unstable call ‘CODE BLUE MEDICAL’ – prevents delay in management. Initiate immediate resuscitation measures.

Inform the Haematology Consultant.

Initial assessment will indicate if urgent intervention is required and includes:

- emergency management
- blood loss
- presence of pain or contractions
- maternal cardiovascular condition
- fetal wellbeing
- uterine tone
- triggering factors
- pathology or ultrasound results which may indicate probable cause

EMERGENCY MANAGEMENT

If initial assessment indicates the woman is haemodynamically unstable or the blood loss indicates potential maternal and fetal compromises initiate a ‘CODE BLUE MEDICAL’.

See:

- Basic Life Support
- Advanced Life Support

Resuscitation shall / may include:

- Insertion of two large bore 16gauge cannula\(^6\)
- Monitoring of O\(_2\) saturation levels
- Application of oxygen as required
- Collection of venous blood samples e.g. full blood picture(FBP\(^2\)), group and cross-match 4 units (or more if required)\(^2\)^6, coagulation studies\(^6\), urea, electrolytes (U&Es) and liver function tests (LFTs)\(^2\), and may include arterial blood gases\(^7\)
- Commencement of fluid replacement e.g. intravenous therapy / blood products / plasma expanders\(^6\)
- Analgesia
- Insertion of an indwelling catheter (IDC)\(^6\)
- Preparation for theatre or delivery\(^6\)
- Informing the haematologist\(^6\)
- Inform the paediatrician if birth is anticipated

MATERNAL WELL-BEING

Perform baseline observations on admission:

- Temperature, blood pressure (BP), pulse
- Blood loss
- Uterine activity / abdominal tone
- Pain
- Urine output – perform urinalysis, and commence measurement of output if significant blood loss. An indwelling catheter may be considered if accurate hydration and elimination measurements are required.
**HISTORY TAKING**

**Blood loss**
Documentation should include the amount, colour, consistency, and pattern of bleeding. Apply a clean sanitary pad. Weighing the pad before use and following changing of the pad provides a more accurate measurement of ongoing blood loss.

Note absence of blood clots in the presence of significant bleeding– can indicate clotting abnormalities.

**Pain Assessment**
Note the pattern of pain including the site, time of commencement, frequency, strength and duration. Assess if contractions are present.

**Uterine Tone**
Note the uterine tone – a soft, non-tender uterus may suggest a lower genital tract cause, bleeding from the placenta or vasa praevia. Increased uterine tone (e.g. tense, rigid or ‘woody’) may indicate placental abruption. Only gentle abdominal pressure should used to prevent stimulating further bleeding or uterine activity.

**Triggering Factors**
Note any triggering factors e.g. sexual activity, trauma, exertion. If bleeding occurs with rupture of the membranes then a ruptured vasa praevia should be considered.

**REVIEW OF ULTRASOUNDS AND PATHOLOGY TESTS**
Ensure all ultrasound and pathology results are available as soon as possible – this may require contacting other facilities or medical practitioners and faxing of results. The results should include blood tests, ultrasounds, and cervical pap smears.

**FETAL WELLBEING**
On admission assess the fetal heart rate (FHR) with a doptone as soon as possible. Assess history of fetal movements.

Commence continuous fetal cardiotocograph (CTG) monitoring if greater than 25 weeks gestation when:
- signs of fetal compromise are noted from initial auscultation with the doptone
- there is active bleeding
- uterine activity is present
- uterine tenderness is present

If the gestation is 23 – 25 weeks consult with the Obstetric Registrar prior to commencing CTG monitoring.

The decision for duration and frequency of CTG monitoring is dependant on maternal and fetal condition. Liaise with the Registrar or Consultant for ongoing management.

**ONGOING MANAGEMENT**

**MATERNAL AND FETAL OBSERVATIONS**

The frequency of maternal and fetal observations are determined by the maternal and fetal condition, ongoing bleeding or other problems. Perform more frequently as required.
Maternal Observations

If no ongoing bleeding or signs of maternal or fetal compromise:

- Blood pressure – 4 hourly for 24 hours, then daily.
- Pulse – 4 hourly for 24 hours, then daily.
- Temperature – 4 hourly for 24 hours, then daily.
- Vaginal discharge/loss – 4 hourly for 24 hours, then continue 4 hourly (omit between 2200 and 0600 if the woman is sleeping).
- Uterine activity - 4 hourly for 24 hours, then continue 4 hourly (omit between 2200 and 0600 if the woman is sleeping).
- Abdominal tenderness, pain or rigidity - 4 hourly for 24 hours, then continue 4 hourly (omit between 2200 and 0600 if the woman is sleeping).
- Urinalysis – perform weekly.

If there is significant blood loss, measure and record the urinary output until the maternal condition is stable and medical review determines it is not longer required. Insertion of an indwelling catheter may be considered in some cases.

- Bowels – monitor daily. Significant blood loss may cause dehydration and lead to constipation.

Fetal Observations

If no ongoing bleeding or signs of maternal or fetal compromise:

- FHR - 4 hourly in the first 24 hours (omit between 2200 and 0600 if the woman is sleeping), then perform twice daily thereafter.
- Fetal movements – 4 hourly (omit between 2200 and 0600 if the woman is sleeping)
- CTG monitoring – as ordered by the medical obstetric team.

INTRAVENOUS ACCESS

Site at least one large bore 16 gauge intravenous (IV) cannula if:

- active bleeding continues
- uterine activity or tenderness is present
- a major haemorrhage

Two large bore cannula should be inserted in the event of massive haemorrhage.

Commence monitoring and documentation of fluid intake/output when IVT is commenced, if ongoing blood loss, or if a significant blood loss has occurred.

Removal of the IV Cannula

If there is no fresh blood loss and IVT has not been administered, the IV cannula should remain in situ for 24 hours. Discuss with the medical obstetric team prior to removal of the IV cannula. Timing of removal or replacement will depend on the cause and the clinical situation.

FASTING

Women with a major or massive APH shall be fasted until medical review. Women with a known placenta previa or abruption who have had a minor APH should also be reviewed by medical staff prior to allowing diet and fluids.
BLOOD TESTS

For all women with an APH

- If a woman is Rhesus negative a Kleihauer test should be performed to quantify the magnitude of the feto-maternal haemorrhage, and ensure an adequate dose of RhD immunoglobulin has been given.2, 10
- Do not perform a Kleihauer for an APH in a Rhesus positive women, except in the following circumstances:
  - significant abdominal trauma
  - a CTG with a sinusoidal pattern
  - persistently non-reactive CTG with reduced variability and an ultrasound showing an inactive fetus.

  Note: the Kleihauer test is not sensitive for diagnosing placental abruption.2

- Ensure a copy of all booking blood results are available. If the blood test results are not able to be sourced, then collect additional blood for these tests.

Minor APH

Perform a FBP and Group and Hold. If the platelet count is abnormal, perform a coagulation screen.2

Major or Massive APH

Perform:
- FBP2
- Cross-match 4 units2
- Coagulation Screen2
- U&Es, LFTs2

Placenta Praevia

Perform a group and hold weekly and / or after each readmission to hospital. May require a cross-match to be done weekly depending on the clinical situation.

Note: if a woman has been given a blood transfusion the cross-match and group and hold sample will expire after 72 hours.

ULTRASOUND ASSESSMENT

Check recent ultrasound reports for placental location.
Perform ultrasound examination to determine placenta location, fetal well-being and presence of retroplacental clot.

Serial ultrasound appointments for fetal growth should be commenced for women with an APH caused by placental abruption or unexplained APH.2

Note: sensitivity of ultrasound for detection of retroplacental clot is poor. However, when the ultrasound suggests abruption, the likelihood is high.2, 11

VAGINAL ASSESSMENT

Speculum examination may be used to assess vaginal bleeding. Digital examination to assess the vagina and cervix must only be performed after placenta praevia is excluded.
CORTICOSTEROID ADMINISTRATION
Administer a single course of antenatal corticosteroids to women at risk of preterm delivery between 24 and 34 weeks gestation.
See Clinical Guideline Use of corticosteroids

MATERNAL POSITION AND ACTIVITY
- On admission position the woman on her side during clinical assessment.
- Clinically stable women - advise maternal bed rest with toilet privileges until there has been no fresh bleeding for 24 hours.
- Initiate measures to prevent thrombosis e.g. wearing knee high compression stockings continuously until fully mobile.12 Promote frequent leg exercises until fully mobile.

PAEDIATRIC CONSULTATION
Arrange Paediatric consultation if preterm birth is anticipated.

DISCHARGE
All women prior to discharge should be informed to contact KEMH immediately if any further bleeding or abnormalities present.2 Provide advice as discussed in ‘Patient Education’ within this document.

All women with an APH - diagnosed placental abruption2, unexplained APH2, placenta praevia, or a cervical abnormality are not suitable to attend a low risk midwives clinic. Future antenatal appointments should be adjusted accordingly.

Spotting
Provided the clinical assessment reassures there are no complications or the presence of a placenta praevia, and the woman is no longer bleeding, she may return home. Ensure a follow-up antenatal clinic appointment is made.

Minor APH
Women with ongoing bleeding should remain in hospital.2 If there is no bleeding for 24 hours the woman may usually be discharged home with antenatal clinic follow-up. However, the decision for timing of discharge is made on an individual basis with obstetric team Consultant review.

Major or Massive APH
Timing of discharge depends on diagnosis and the individualised clinical situation. The obstetric team Consultant shall review the patient and decide timing for discharge. Follow-up arrangements will depend on the outcome of the APH e.g. GP or antenatal clinic follow-up.

MATERNAL EDUCATION
- If KEMH is contacted by a woman experiencing an APH, the telephone assessment should include evaluation of the risk of maternal and fetal compromise. If it is determined the risk is significant, she should be advised to come to hospital by ambulance. Advise her to bring any soiled clothing or sanitary pads with her. This will enable a more accurate assessment of the volume of blood loss.5
- Women who smoke, use cocaine or amphetamines should be counselled as to their increased risk for placental abruption when using these substances.2 Intervention strategies and referrals to support services should be offered.
- Arrange for ‘Parent Education’ staff to provide antenatal education for women with long term hospital admission or as required.
• Advise women with placenta praevia to avoid penetrative sexual intercourse, and that vaginal and rectal examinations should be avoided.²

• Inform all women who are discharged home to immediately contact KEMH if:
  - further bleeding occurs²
  - abdominal pain occurs²
  - reduced fetal movements occur²
  - any abnormalities or concerns

• Confirm follow-up arrangements. Antenatal appointments may need to be readjusted if review is required earlier or if the woman has been attending a low risk midwives clinic.

DOCUMENTATION

• Prepare ‘Baby Notes’ if birth is expected. Update the perinatal database record.
• Complete documentation on the:
  - MR 004 Obstetric Special Instruction sheet
  - MR 285.01 Observation Sheet and Response Chart
  - MR 810 Medication Chart
  - MR 250 Progress Notes
  - MR 410 Neonatal History

REFERENCES