Surgical Care at the District Hospital

World Health Organization

10

Hypertension in Pregnancy

Key Points

10.1 Hypertension

- Hypertensive disorders in pregnancy include:
  - Pregnancy induced hypertension
  - Chronic hypertension
  - Pre-eclampsia
  - Eclampsia.

- Untreated hypertension in pregnancy can cause maternal and perinatal deaths

- Delivery is the only cure for pre-eclampsia and eclampsia

10.1 Hypertension

- **Hypertension is diagnosed when:**
  - the systolic blood pressure is 140 mmHg

    and/or
  - the diastolic blood pressure is 90 mmHg on two consecutive readings taken 4 hours or more apart.

- **A time interval of less than 4 hours is acceptable if urgent delivery must take place, or if the diastolic blood pressure is equal to or greater than 110 mmHg.**

10.1 Hypertension

- Hypertension is classified as **pregnancy-induced hypertension** if it occurs for the first time:
  - After 20 weeks of gestation
  - During labour and/or within 48 hours after delivery

- If it occurs before 20 weeks of gestation, it is classified as **chronic hypertension**.

- If the blood pressure prior to 20 weeks of gestation is unknown, differentiation may be impossible; in this case, manage as pregnancy induced hypertension.

10.1 Hypertension

Testing for proteinuria

- Presence of proteinuria changes the diagnosis from pregnancy induced hypertension to **eclampsia**.
- Only clean catch mid-stream specimens should be used for testing.
- Catheterization for the sole purpose of testing is not justified due to the risk of urinary tract infection.

10.1 Hypertension

- **Other conditions that cause proteinuria or false positive results include:**
  - Urinary infection
  - Severe anaemia
  - Heart failure
  - Difficult labour
  - Blood in the urine due to catheter trauma
  - Schistosomiasis
  - Contamination from vaginal blood
  - Vaginal secretions or amniotic fluid contaminating urine specimens.

10.1 Hypertension
Clinical Features

- **Pregnancy-induced hypertension is more common among women who are pregnant for the first time.**

- **Women with multiple pregnancies, diabetes and underlying vascular problems are at higher risk of developing pregnancy-induced hypertension.**

- **The spectrum of the disease includes:**
  - Hypertension without proteinuria
  - Mild pre-eclampsia
  - Severe pre-eclampsia
  - Eclampsia.

10.1 Hypertension
Clinical Features

- Mild **pre-eclampsi**a is often symptomless.
- Rising blood pressure may be the only clinical sign. A woman with hypertension may feel perfectly well until seizure suddenly occurs.
- Proteinuria is a late manifestation of the disease.
- When pregnancy induced hypertension is associated with proteinuria, the condition is called pre-eclampsia.

10.1 Hypertension

Clinical Features

- Increasing proteinuria is a sign of worsening pre-eclampsia.

- Mild pre-eclampsia could progress to severe pre-eclampsia; the rate of progression could be rapid.

- The risk of complications, including eclampsia, increases greatly in severe pre-eclampsia.

10.1 Hypertension

Eclampsia

- Eclampsia is characterized by convulsions, together with signs of pre-eclampsia.

- Convulsions can occur regardless of severity of hypertension, are difficult to predict and typically occur in the absence of hyperreflexia, headache or visual changes.

- Convulsions are tonic-clonic and resemble grand-mal seizures of epilepsy. Seizures may recur in rapid sequence, as in status epilepticus, and end in death.

10.1 Hypertension
Eclampsia

- Convulsion may be followed by coma that lasts minutes or hours, depending on the frequency of seizures. 25% of eclamptic fits occur after delivery of the baby.

- Eclampsia must be differentiated from other conditions that may be associated with convulsions and coma.

10.1 Hypertension

Eclampsia

- **Eclampsia must be differentiated from other conditions that may be associated with convulsions and coma:**
  - Epilepsy
  - Cerebral malaria
  - Head injury
  - Cerebrovascular accident
  - Intoxication (alcohol, drugs, poisons), drug withdrawal, metabolic disorders ,Water intoxication
  - Meningitis, encephalitis
  - Hypertensive encephalopathy
  - Hysteria.

10.1 Hypertension

Severe pre-eclampsia and eclampsia

Severe pre-eclampsia is present if one or more of the conditions in column three of the table below are present.

	Mild pre-eclampsia	Severe pre-eclampsia
Diastolic blood pressure	<110	110
Proteinuria	Up to 2+	3+ or more
Headache	No	One or more of these conditions may be present
Visual disturbances	No	
Hyperreflexia	No	
Urine output <400 ml in 24 hours	No	
Epigastric or right upper quadrant pain	No	
Pulmonary oedema	No	

10.2 Assessment & Management

Severe Pre-Eclampsia and Eclampsia

- All case of severe pre-eclampsia should be managed actively
- Symptoms and signs of '**impending eclampsia**' (blurred vision, hyper-reflexia) are unreliable and expectant management is not recommended
- Immediate management of pregnant women or recently delivered woman:

  -complaining of severe head ache or blurred vision

  -having Convulsion

  -found unconscious
- **SHOUT FOR HELP**

10.2 Assessment & Management
Severe Pre-Eclampsia and Eclampsia

- Protect the mother by lowering blood pressure and preventing or controlling convulsions.
- Magnesium sulfate is the preferred drug for preventing and treating convulsions.
- Use diazapam only if magnesium sulphate is not available.
- Never leave the woman alone.
- A convulsion is followed by aspiration of vomit may cause death of the woman and fetus

10.3 Delivery

- Delivery should take place as soon as the woman's condition has been stabilized.

- Delaying delivery to increase fetal maturity will risk the lives of both the woman and the fetus. Delivery should occur regardless of the gestational age.

- Get skilled anaesthetic help early; this will also aid the management of hypertensive crises and fits.

10.4 Postpartum Care

- Continue anticonvulsive therapy for 24 hours after delivery or last convulsion, whichever occurs last
- Continue antihypertensive therapy as long as the diastolic pressure is 110 mmHg or more
- Continue to monitor urine output

10.4 Postpartum Care

- Watch carefully for the development of pulmonary oedema, which often occurs after delivery.
- Life threatening complications can still occur after delivery;
- Monitor carefully until the patient is clearly recovering.

10.4 Postpartum Care

Referral for tertiary level care

- **Consider referral of women who have:**
  - Oliguria (less than 400 ml urine output in 24 hours) that persists for 48 hours after delivery
  - Coagulation failure (e.g. coagulopathy or haemolysis, elevated liver enzymes and low platelets [HELLP] syndrome)
  - Persistent coma lasting more than 24 hours after convulsion.

10.5 Chronic Hypertension

- Encourage additional periods of rest.
- High levels of blood pressure maintain renal and placental perfusion in chronic hypertension; reducing blood pressure will result in diminished perfusion.
- Blood pressure should not be lowered below its pre-pregnancy level. There is no evidence that aggressive treatment to lower the blood pressure to normal levels improves either fetal or maternal outcome.

10.5 Chronic Hypertension

- If the woman was on antihypertensive medication before pregnancy and the disease is well controlled, continue the same medication if acceptable in pregnancy

- If diastolic blood pressure is 110 mmHg or more, or systolic blood pressure is 160 mmHg or more, treat with antihypertensive drugs: e.g. methyldopa

10.5 Chronic Hypertension

- If proteinuria or other signs and symptoms are present, consider superimposed pre-eclampsia and manage as pre-eclampsia
- Monitor fetal growth and condition
- If there are no complications, deliver at term
- If there are fetal heart rate abnormalities (less than 100 or more than 180 beats per minute), suspect fetal distress
- If fetal growth restriction is severe and pregnancy dating is accurate, assess the cervix and consider delivery

10.5 Chronic Hypertension

- If the cervix is favourable (soft, thin, partially dilated) rupture the membranes with an amniotic hook or a Kocher clamp and induce labour using oxytocin or prostaglandins

- If the cervix is unfavourable (firm, thick, closed), ripen the cervix using prostaglandins or Foley catheter

- Observe for complications including abruptio placentae and superimposed pre-eclampsia.

10.6 Complications

- Complications of hypertensive disorders in pregnancy may cause adverse perinatal and maternal outcomes.

- Complications are often difficult to treat so make every effort to prevent them by early diagnosis and proper management.

- Be aware that management can also lead to complications.

10.6 Complications

Management

- If fetal growth restriction is severe, expedite delivery
- If there is increasing drowsiness or coma, suspect cerebral haemorrhage
- Reduce blood pressure slowly to reduce the risk of cerebral ischaemia
- Provide supportive therapy
- If you suspect heart, kidney or liver failure, provide supportive therapy and observe

10.6 Complications
Management

- **Suspect coagulopathy if:**
  - A clotting test shows failure of a clot to form after 7 minutes or a soft clot that breaks down easily
  - Continued bleeding from venepuncture sites

10.6 Complications

Management

- A woman who has IV lines and catheters is prone to infection; use proper infection prevention techniques and closely monitor for signs of infection

- If the woman is receiving IV fluids, she is at risk of circulatory overload.

- Maintain a strict fluid balance chart and monitor the amount of fluids administered and urine output.