HEALTH HOLDING
HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Obstetrics and Gynecology		
Document:	Multidisciplinary Policy and Procedure		
Title:	Management of Severe Pre Eclampsia		
Applies To:	All Obstetrics and Gynecology Staff		
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1. PURPOSE:

1.1 This protocol describes the procedures and management of pre-eclampsia.

2. DEFINITIONS:

2.1 The most recent terminology is that se by the National High Blood Pressure Education Programme Working Group (year 2000).

Disease	Criteria of diagnosis
Gestational hypertension	Blood pressure is 140/90 after 20 weeks gestation in a woman with previously normal BP and no proteinuria.
Pre Eclampsia (PET)	Blood pressure is 140/90 after 20 weeks gestation in a woman with previously normal BP and proteinuria (0.3gm/24 hour urine specimen).
Superimposed pre Eclampsia	A woman with hypertension without proteinuria before 20 weeks who developed new onset proteinuria. A woman with hypertension and proteinuria before 20 weeks who developed either sudden increase in proteinuria, sudden increase in BP, platelet count <100.000/ml.
Chronic hypertension	BP 140/90 before pregnancy or diagnosed before 20 weeks gestation. Hypertension first diagnosed after 20 weeks and persistent after 12 weeks post-partum.

2.1.1 **Mild Pre Eclampsia**: it is characterized by:

2.1.1.1 Two reading of diastolic BP of 90-110mm of Hg at least 4 hours apart after 20 weeks.

2.1.1.2 Proteinuria up to +2 (1g/L).

2.1.2 **Severe Pre Eclampsia:**

2.1.2.1 It is considered severe when Diastolic BP ≥ 110 mm of Hg or systolic BP ≥ 170mm of Hg.

2.1.2.2 Signs and symptoms of severe pre Eclampsia in addition to hypertension and proteinuria is:

2.1.2.2.1 Severe headache.
2.1.2.2.2 Visual disturbances.
2.1.2.2.3 Epigastric pain ± vomiting.
2.1.2.2.4 Clonus.
2.1.2.2.5 Oliguria less than 500ml/ 24 hours.
2.1.2.2.6 Pulmonary edema.
2.1.2.2.7 Papilledema.
2.1.2.2.8 Liver tenderness.
2.1.2.2.9 IUGR.
2.1.2.2.10 Proteinuria greater than 5 gms/24 hours.

2.1.2.2.11 Elevated ALT >70 IU/L.
2.1.2.2.12 Thrombocytopenia.
2.1.2.2.13 Imminent Eclampsia.

3. POLICY:

3.1 Pre-eclampsia is a progressive multi systemic disorder that may lead to maternal and neonatal morbidity and mortality. Hence, patient should be admitted to labor ward for further evaluation.
3.2 The physician must involve the senior registrar or Consultant, Anaesthesiologist and Pediatrician and plan of management should be made and written clearly in the file.
3.3 Delivery is the only cure for pre-eclampsia most patients with severe preeclampsia will require delivery once the situation is controlled.
3.4 Decision regarding the timing and mode of delivery are based on a combination of maternal and fetal factors.
3.5 Patients with severe hypertension or other signs of maternal or fetal deterioration should be delivered within 24 hours. Irrespective of gestational age or lung maturity.
3.6 Foetuses greater than 34 weeks or those with documented lung maturity (if available) can be delivered within 24 hours after stabilization.
3.7 Expectant management with close monitoring of the mother and fetus reduces neonatal complications for foetuses less than 34 weeks, but must be carefully balanced with maternal wellbeing.
3.8 If the gestation is below 32 weeks, caesarean section is more likely as the success of induction with prostaglandin is reduced.
3.9 All inductions of labor with severe pre-eclampsia to be performed on high dependency care unit labor ward (including Prostin method).

4. PROCEDURE:

4.1 **General measures:**
4.1.1 Obstetrician, Anesthetist, Pediatricianand labor ward co-ordinator informed – to allow involvement at an early stage. The involvement of all senior staff should be documented in the medical notes detailing the time called and on arrival.
4.1.2 Reduced activity is necessary but not complete bed rest.
4.1.3 Protein, calories should be included in the diet. Sodium and fluid should not be restricted.
4.2 **Management for mild pre-eclampsia:**
4.2.1 If the gestational age 38 weeks or more, assess the cervix and expedite delivery.
4.2.2 If the gestational age less than 38 weeks and signs unchanged or normalized, patient can be followed in the antenatal ward.
4.3 **Management of severe pre-eclampsia**
4.3.1 **Maternal assessment and monitoring**:
4.3.1.1 The woman should be assessed, managed in a quiet room in a high dependency care type situation.
4.3.1.2 Ideally there should be one on one nursing care, at least initially, when stability of the condition is being assessed.
4.3.1.3 Critical care flow chart should be commenced to record physiological monitoring, investigation results and all treatments.
4.3.1.4 Vital signs (BP, respiratory rate and pulse), deep tendon reflexes and neurologic checks every 15 to 60 minutes till stable.
4.3.1.5 Foley's catheter, urine output and dipstick check for protein every hour.
4.3.1.6 Intravenous:D5 lactated ringer at 50 to 80 ml/hr to maintain urine output >30ml/hr. total intake (IV and oral) should not exceed 80ml/hr.
4.3.1.7 When complications such as pulmonary edema or renal failure present, fluid status should be monitored intensively by using central venous line.

4.3.1.8 Lab investigation every 12 hours.
4.3.1.9 Complete blood count and platelet count.
4.3.20 Coagulation screen.
4.3.21 Renal function test.
4.3.22 Liver function test.

4.3.2 **Fetal assessment**

4.3.2.1 Continuous external monitor for contraction and fetal heart rate using CTG.
4.3.2.2 Perform ultrasound for growth, amniotic fluid index and umbilical artery Doppler.
4.3.2.3 Consider corticosteroid for fetuses between 24–34 weeks gestation, either Betamethasone, two doses of 12mg given intramuscularly 24 hrs apart or Dexamethasone four doses of 6mg given 12 hours apart.

4.3.3 **Medications:**

4.3.3.1 Magnesium sulphate.
4.3.3.2 If MAB> 125 or DBP greater than 110, give one of the following to achieve DBP of 90-100 mm of Hg.
4.3.3.3 Hydralazine 5-10mg IV slowly every 15-30 minutes upto accumulative dose of 20mg or 1mg/ hour (maximum 10mg/hour).
4.3.3.4 Labetalol 20-40 mg IV, repeat every 10-20 minutes (total 220mg) or by infusion of 20mg/ hour and double rate every 30 minute until the blood pressure is stable. Maximum dose 32 ml/hour(160mg/hour).
4.3.3.5 Nifedipine 10-20 mg orally, repeat every 20-30 minutes if necessarily.

4.3.4 **Management of labor and mode of delivery:**

4.3.4.1 Discuss with the obstetrician.
4.3.4.2 Caesarean section is preferable if gestation less than 32 weeks.
4.3.4.3 After 34 weeks vaginal delivery should be considered in a cephalic presentation.
4.3.4.4 Vaginal prostaglandins will increase the chance of success.
4.3.4.5 If vaginal delivery is planned the second stage should be short (15–30 minutes active second stage) with consideration given to elective operative delivery.
4.3.4.6 Epidural anesthesia is normally recommended.
4.3.4.7 The third stage should be managed with 5 units IV oxytocin (NOT Ergometrine or Syntometrine).
4.3.4.8 Preload patients with an additional 500ml normal saline (0.9%) before epidural.
4.3.4.9 Consider ventouse/ forceps delivery if diastolic blood pressure >105mm of Hg.
4.3.4.10 All women should have anti–embolic stocking ± Heparin. Unfractionedheparin 5000 IU twice daily should be given until the woman is fully mobile.

4.3.5 **Immediate post natal care:**

4.3.5.1 Women who have received treatment for severe pre eclampsia should be monitored in hospital until the 4th postnatal day and have 4 hourly blood pressure measurements.
4.3.5.2 It is important to predict and anticipate the need for antihypertensive in order to avoid delaying discharge and to prevent severe hypertension.
4.3.5.3 Beta–blockers (e.g. Atenolol, labetalol), alpha adrenergic blockers (e.g. Doxasocin), angiotensin converting enzyme (ACE) inhibitors (e.g. Enalapril, Lisinopril, Ramipril), Calcium antagonists (e.g. Nifedipine, Amlodipine) and diuretics are all safe to use in a woman who is breast feeding.
4.3.5.4 After day 4 women may be discharged when asymptomatic, provided the hematology and biochemistry results are normal or improving and the blood pressure is < 150/100.
4.3.5.5 There should be direct communication with the GP via a phone call or discharge note or via home care.
4.3.5.6 After discharge the woman should have their blood pressure checked AT LEAST ON ALTERNATE DAYS until it is normal or until reviewed by the physician.

4.3.5.7 After pre-eclampsia, blood pressure can take upto 3 months to return to normal. During this time, blood pressure should not be allowed to exceed 160/110 mm of Hg.

4.3.6 **Follow up**

4.3.6.1 Obstetrician to review all women prior to discharge and discuss postnatal management plan. The discussion MUST be documented in the case notes.

4.3.6.2 Those on treatment should have follow up either from their GP or from the hospital. A hospital appointment can be arranged via the pre conception clinic.

4.3.6.3 An opportunity for pre-conceptual counselling should be available for all women having experienced pre-eclampsia.

5. MATERIAL AND EQUIPMENT:

5.1 Sphygmomanometer
5.2 IV cannula
5.3 IV solutions
5.4 Syringes
5.5 Medications
5.6 Gloves

6. RESPONSIBILITIES:

6.1 Physician
6.2 Nurse

7. APPENDICES:

7.1 N/A

8. REFERENCES:

8.1 MOH, Guidelines for Obstetrics and Gynecology, clinical policies and procedures.
8.2 William obstetric, Hypertensive Disorders In Pregnancy, 22nd edition, 2005, page no: 761.
8.3 CBAHI Standard 3rd Edition 2016.

9. APPROVALS:

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