الجمعية اللبنانية للتوليد والأمراض النسائية
Lebanese Society of Obstetrics & Gynecology
Société Libanaise d'Obstétrique & de Gynécologie

Lebanese Society of Obstetrics & Gynecology

Guidelines for Diagnosis and Management of Preeclampsia

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Definition of preeclampsia

A pregnant lady, of more than 20 weeks of gestation, with:

- Systolic blood pressure (SBP) **≥ 140** mmHg or
  Diastolic blood pressure (DBP) **≥ 90** mmHg
- **AND at least ONE of the following:**
  - Proteinuria
    - ≥300 mg per 24 hours urine collection or
    - Protein/creatinine ration ≥0.3 or
    - Dipstick reading ≥1+
      (only if other methods are not available)
  - Thrombocytopenia
    (platelet count < 100.000/microlit)
  - Renal insufficiency (serum creatinine > 1.1 mg/dl)
  - Elevated liver enzymes to twice normal levels
  - Pulmonary edema
  - Cerebral or visual symptoms

Epidemiology

- Incidence: 10% worldwide
- Is a leading cause of maternal and perinatal morbidity and mortality

Initial management
Ask for **symptoms of severe preeclampsia**: - Severe persistent right upper quadrant abdominal pain or epigastric pain unresponsive to medications. - Cerebral or visual disturbances (headache, blurred vision,)
Blood pressure monitoring
Laboratory tests for: •CBCD •Creatinine •Liver enzymes •LDH •Urine protein (24 hrs collection or protein/crea ratio)
Biophysical profile Obstetrical ultrasound; EFW, AFI / NST
Anti-hypertensive drugs if SBP≥160 or DBP≥110 Labetalol, Hydralazine, calcium channel blocker, .. (see following protocols) **Target range: 140-150/90-100**
MgSO4 in case of severe features, till 24 hrs postpartum (see following protocol)
Bethamethasone or Dexamethasone For fetal lung maturity in preterm pregnancies.

<table>
<tr><th>LABETALOL</th><th>HYDRALAZINE</th></tr>
<tr><td>Labetalol 20mg IV over 2 min</td><td>Hydralazine 5or10 mg IV over 2 min</td></tr>
<tr><td>↓</td><td>↓</td></tr>
<tr><td>Repeat BP in 10 min
If still SBP≥160 or DBP≥110:</td><td>Repeat BP in 20 min
If still SBP≥160 or DBP≥110:</td></tr>
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<tr><td>Repeat BP in 20 min
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<tr><td colspan="2">Obtain emergency consultation from MFM specialist, internal medicine, critical care, anesthesiologist,…</td></tr>
<tr><td colspan="2">Give additional antihypertensive medications per specific order</td></tr>
<tr><td colspan="2">Once BP threshold is obtained, repeat BP
Q10 min for 1hr then Q15 min for 1hr then Q30 min for 1hr then Q1 hr for 4hrs</td></tr>
<tr><td>Warnings:
- Hold IV labetalol for maternal pulse < 60 bpm
- Maximum cumulative dose of Labetalol should not exceed 220mg per 24 hours.
- Avoid IV Labetalol with active asthma, heart diseases, congestive heart failure.
- Use with caution with history of asthma.
- Institute fetal surveillance if viable.
- It may causes neonatal bradycardia.</td><td>Warnings:
- Maximum cumulative dose of Hydralazine should not exceed 25mg per 24 hours.
- Hydralazine increases the risk of maternal hypotension.
-Institute fetal surveillance if viable.</td></tr>
</table>

Oral NIFEDIPINE

Nifedipine 10mg PO

Repeat BP in 20 min
If still SBP≥160 or DBP≥110:

Nifedipine 20mg PO

Repeat BP in 20 min
If still SBP≥160 or DBP≥110:

Nifedipine 20mg PO

Repeat BP in 10 min
If still SBP≥160 or DBP≥110:

Labetalol 40mg IV over 2 min

Obtain emergency consultation from MFM specialist, internal medicine, critical care, anesthesiologist,…

Give **additional antihypertensive medications per specific order**

Once BP Threshold is obtained, repeat BP
Q10 min for 1hr then **Q15 min for 1hr** then **Q30 min for 1hr** then **Q1 hr for 4hrs**

Warnings:
- Capsules should be administered orally and not punctured or otherwise administered sublingually.
- Oral Nifedipine has been associated with an increase in maternal heart rate and may overshoot hypotension.
- Avoid IV Labetalol with active asthma, heart diseases, congestive heart failure.
- Institute fetal surveillance if viable.

MAGNESIUM SULFATE

Loading dose: 4-6g IV bolus in 100 ml over 20 min then
Maintenance dose: 2gIV/hour till 24 hours postpartum
If no IV access for loading dose: 10g 50% solution IM (5g in each buttock)

Contraindications: Pulmonary edema, renal failure, Myasthenia gravis

<u>Admit for termination of pregnancy, in case of:</u>

- **37 weeks or more**
- **Presence of severe features of preeclampsia**:
  - SBP ≥ 160 mmHg or DBP ≥ 110 mmHg
    on 2 occasions at least 4 hours apart.
  - Thrombocytopenia
    (platelet count < 100.000/micoliter)
  - Elevated liver enzymes to twice normal levels
  - Severe persistent right upper quadrant abdominal pain or epigastric pain unresponsive to medications.
  - Progressive renal insufficiency
    (serum creatinine > 1.1 mg/dl or doubling)
  - Pulmonary edema
  - New onset cerebral or visual disturbances
- **Eclampsia**
- **Suspected abruption**
- **34 weeks or more PLUS any of the following:**
  - True labor or Rupture of membranes
  - Estimated fetal weight <5th percentile
  - Oligohydramnios (persistent AFI <5 cm)
  - Persistent Biophysical profile 6/10 or less

Management of mild gestational hypertension or preeclampsia without severe features.

- 37 weeks of gestation or more
  Or
- 34 weeks of gestation with:
  - Labor
  - Rupture of membranes
  - Abnormal maternal-fetal tests results
  - Estimated fetal weight less than 5th percentile
  - Suspected abruptio placenta

No

- Inpatient or outpatient management
- Maternal evaluation: twice weekly
- Fetal evaluation:
  - Twice weekly NST test if preeclampsia
  - Weekly NST if gestational HTN

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- 37 weeks of gestation or more
- Worsening maternal or fetal condition
- Labor or premature rupture of membranes

YES →

YES (from first box) →

- Delivery

Management of severe preeclampsia at less than 34 weeks

-Observe in labor and delivery for first 24-48 hours.
-Corticosteroids, magnesium sulfate prophylaxis
-Antihypertensive medications
-Ultrasonography, monitoring of fetal heart rate, symptoms & lab tests

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Contraindications to continued expectant management:

- Eclampsia
- Pulmonary edema
- Disseminated intravascular coagulopathy
- Uncontrollable hypertension
- Nonviable fetus
- Abnormal fetal test results
- Abruption placentae
- Intrapartum fetal demise

→ Delivery once maternal condition is stable.

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Presence of additional expectant complications:

- Greater than or equal to 33 weeks and 5 days of gestation
- Persistent symptoms
- HELLP or partial HELLP syndrome
- Fetal growth restriction
- Severe oligohydramnios
- Reverse end-diastolic flow of fetal umbilical artery
- Labor or premature rupture of membranes
- Significant renal dysfunction
- Central nervous system manifestations

→ -Corticosteroids for fetal lungs maturation

- Delivery after 48 hours

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Expectant management

-Facilities with adequate maternal and neonatal intensive care resources
-Fetal viability
-Inpatient only and stop magnesium sulfate
-Daily maternal-fetal tests
-Vital signs, symptoms, blood tests
-Oral antihypertensive drugs

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-Achievement of 34 weeks of gestation
-New-onset contraindications to expectant management
-Abnormal maternal-fetal test results
-Labor or premature rupture of membranes

→ - Delivery

Eclampsia

- Magnesium sulfate IV loading dose of 4 -6 g
- Followed by maintenance dose of 2 g/hour for 24 hours (unless lower dose warranted)

Postpartum preeclampsia

- If BP≥150/100 (either systolic or diastolic elevation), on 2 occasions, 4hours apart:

→ antihypertensive therapy is recommended

- If BP ≥ 160/110 (either systolic or diastolic elevation)

→ treatment should started within 1 hour

Criteria for discharge:

- Normalized blood pressure
- Normalized blood test
- 72 hrs monitoring of BP in hospital and 7-10 days in case of symptomatic patient
- Patient instructions on the symptoms and signs of preeclampsia

References:

-Hypertension – pregnancy induced – Practice guidelines. ACOG, DNLM: 1, WQ 244, 2013.

-Maternal Safety Bundle for Severe Hypertension in Pregnancy – ACOG- 2017.

- Emergent Therapy for Acute-Onset, Severe Hypertension During Pregnancy and the Postpartum Period. Committee Opinion No 692 -2017