Hypertensive disorders in pregnancy - Diagnosis, Evaluation and Management

Guideline submitted to Nepal Society of Obstetricians & Gynaecologists (NESOG)

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Introduction

- Hypertensive disorders in pregnancy is one of the most rapidly advancing fields in medicine.
- The last few years have seen an enormous number of randomized clinical trials and Meta analyses which have served to increase the knowledge and understanding of hypertension.

Introduction

- **Maternal Mortality Rate of Nepal**
  - 229 per 100,000 live births
  - Eclampsia was the second leading direct cause which has increased from 11% in 1998 to 21%.

Nepal Maternal Mortality and Morbidity Study (NMMS 2008/2009), USAID,DFID,SSMP/NEPAL, MOH/NEPAL

Introduction

- This guideline contains recommendations for diagnosis, evaluation and management of hypertensive disorders during pregnancy ante partum, intrapartum and postpartum period.
- It also contains recommendations for those with chronic hypertension willing to conceive as well as the management for those after a pregnancy complicated by hypertension.

Objectives

- To standardize the approach to diagnosis, evaluation and management of hypertension in pregnancy in the pre-, during and post-delivery period in order to improve the outcome for the mother and child.

Methodology

- Agreement with NESOG
- Formation of the team members/advisors
- Literature search/review online &reference books
- Several sittings and discussions on preparing the outline of Guideline preparation
- Distribution of the chapter of the guideline to the members of the team to prepare the outline and the content.

Methodology

- These guidelines are based on those issued by the National Institute of Clinical Excellence (NICE) , British Hypertension Society, other international guidelines and scientific evidence from recent major trials.

Methodology

- They were discussed with experts in various hospitals and institutes, keeping in mind the cost effectiveness, accessibility and availability of the treatment.
- However, the final treatment may vary from one individual to another depending on the situation and existing facilities available at that point of time.

Content of the Guideline

- Acknowledgement
- Introduction
- Objectives
- Methodology
- Pathogenesis
- Diagnosis
- Classification
- Management
  - Gestational hypertension
  - Pre eclampsia and eclampsia
  - Chronic hypertension
  - Superimposed Hypertension
- Bibliography
- Annexes

Pathogenesis

- Pre-eclampsia -- multisystem disorder.
- The pathophysiology is still unclear. Many consider the placenta being the pathogenic focus for all manifestations, because delivery is the only definitive treatment of the disease.
- Pathologic changes in this disorder are primarily of ischemic nature affecting the placenta, kidney, liver, brain and coagulation system.

Diagnosis

All pregnant women who present with hypertension require a thorough history-taking, physical examination and investigation.

The aim of the assessment is:

- To classify hypertension in pregnancy
- To determine the severity of the disease
- To find out the involvement of the end organs
- To plan further management of the case

Diagnosis

- The classification of the hypertensive disorders of pregnancy is based on the two most common manifestations: hypertension and proteinuria.
- The guideline describes the correct method of measurement of blood pressure, urine protein estimation & baseline investigations of women who develop hypertension during pregnancy and those women who enter pregnancy with hypertension.

Classification

Classification: (Working group of the NHBPEP—National High Blood Pressure Education Program 2000)

Gestational hypertension

- Systolic BP ≥140 or diastolic BP ≥90 mmHg for the first time during pregnancy after 20 weeks
- No proteinuria
- BP returns to normal 12 weeks postpartum
- Final diagnosis made only postpartum
- May have other signs and symptoms of preeclampsia, for example, epigastric discomfort or thrombocytopenia

Classification

- **Preeclampsia**
  - Minimum criteria:
    - BP ≥140/90 mmHg after 20 weeks gestation
    - Proteinuria ≥300 mg/ 24 hours or ≥ 1+ dipstic

Classification

Increased certainty of preeclampsia:

- BP ≥160/110 mm Hg
- Proteinuria 2.0 gm/24 hours or ≥ 2+ dipstick
- Serum Creatinine >1.2 mg/dl unless known to be previously elevated
- Platelet <100,000/µl
- Microangiopathic hemolysis - increased LDH
- Elevated serum tranaminase levels- AST or ALT
- Persistence head ache or other cerebral or visual disturbance
- Persistence epigastric pain

Classification

- **Eclampsia**
  - Seizures that cannot be attributed to other causes in a women with preeclampsia
- **Superimposed Preeclampsia on Chronic hypertension**
    - New onset proteinuria ≥ 300mg/24 hours in hypertensive women but no proteinuria before 20 weeks' gestation
    - A sudden increase in proteinuria or blood pressure or platelet count< 100,000/µl in women with hypertension and proteinuria before 20 week' gestation

Classification

- **Chronic Hypertension**
  - BP ≥140/90 mmHg before pregnancy or before 20 weeks gestation not attributable to gestational trophoblastic disease or
  - Hypertension first diagnosed after 20 weeks gestation and persists even after 12 weeks postpartum

Management

- Guideline includes the management separately for each type of hypertension:
  - Gestational hypertension
  - Pre-eclampsia (non-severe/severe) & eclampsia
  - Chronic hypertension
  - Superimposed hypertension

Management

- For each type of disorder following title is given:
  - Definition
  - Risk factors
  - Preventive measures
  - Initial assessment of the patient
  - Determine the severity of the disease
  - Criteria for admission and outpatient management
  - Appropriate antihypertensive used during ante-partum period

Management

- Monitoring for fetal and maternal wellbeing in ante-natal period.
- Criteria for discharge in antepartum period.
- Time of follow up visit in antepartum period.
- Determination of time /mode of delivery.
- Monitoring during intra-partum period.
- Appropriate antihypertensive during post-natal period.

Management

- Follow up: Immediate postpartum and long-term period.
- Discharge criteria in post natal period.
- Advice on contraception post partum
- Re-classification of the disease
- In cases of chronic hypertension pre-pregnancy counseling and appropriate management

Management

- Bibliography
- Annexes
  - Boxes of recommendation for different antihypertensive drugs used in pregnancy
  - Preparation of Magnessium sulphate
  - Regimen for prophylactic/therapeutic treatment for eclampsia.

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