DIAGNOSIS OF HYPERTENSIVE DISORDERS IN PREGNANCY DURING ANC AND MGT

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Outline

- Classification of hypertensive disorders in pregnancy
- Burden
- Pet definition, diagnosis and risk factors
- Complications
- Management during ANC
- Shortcomings in diagnosis and mgt

Classification

- The 4 major hypertensive disorders of pregnancy are:
    1. Chronic hypertension
    2. Gestational hypertension
    3. Pre-eclampsia / Eclampsia / HELLP syndrome
    4. Pre-eclampsia superimposed on chronic hypertension

Burden

Globally, 76,000 maternal deaths per year.

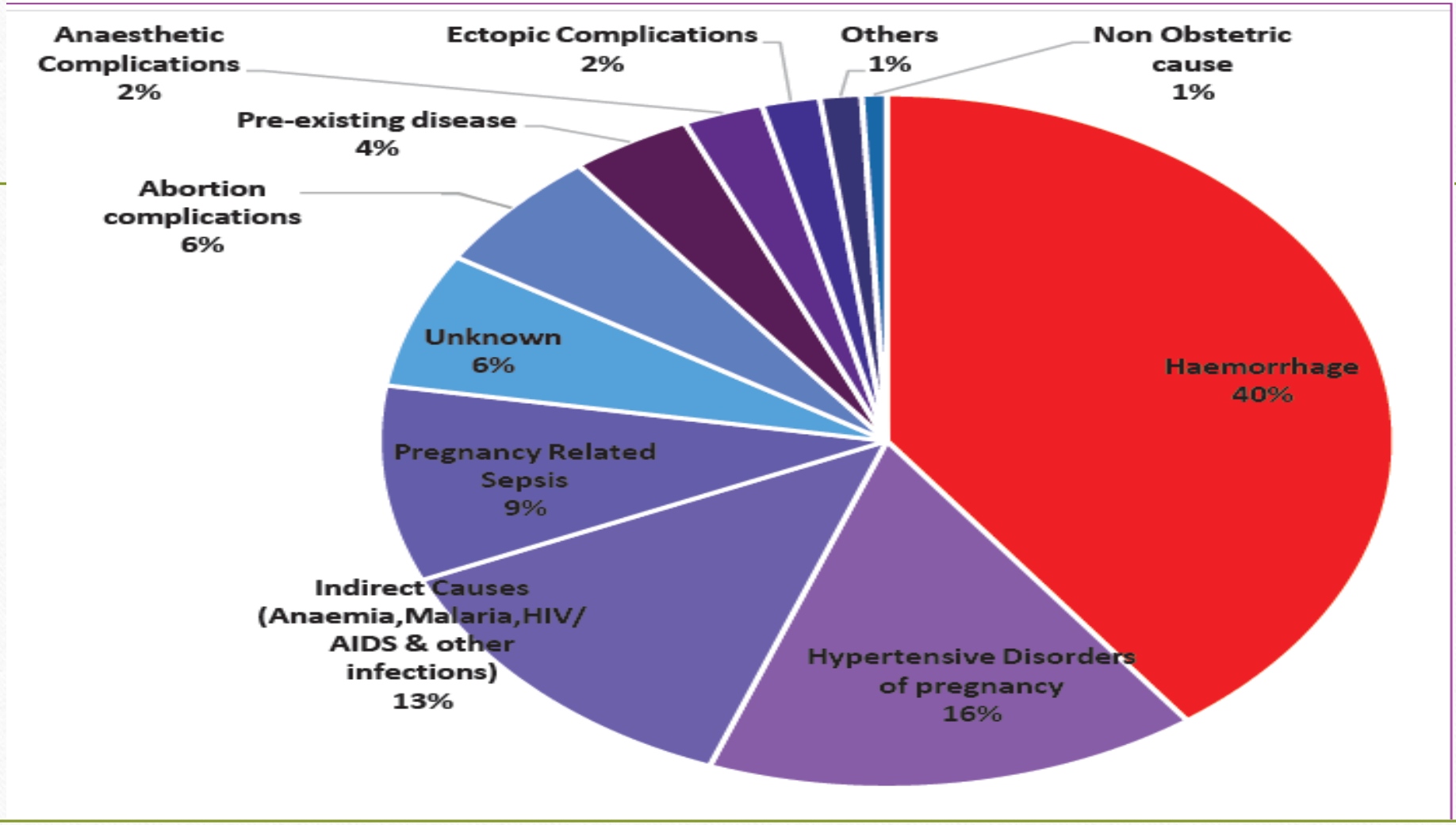
PET contributes over 500,000 new-born deaths per year

Second leading cause of death MD (16% Vs H’ge 40 %)in Uganda

Busoga, PET accounts for 21.1% Vs 45.3%

3.2.5 Causes of maternal deaths

Figure 7: Causes of Maternal Death, (n=1137) FY 2022/20223



Causes of death by region

Table 6: Causes of maternal deaths by region FY2022/2023

Regions	Haemorrhage	Hypertensive Disorders of Pregnancy	Indirect Causes (Anaemia, Malaria, HIV/AIDS & other infections)	P
Acholi	25.4%	6.0%	11.9%	
Ankole	32.2%	23.0%	6.9%	
Bugisu	33.0%	16.5%	13.8%	
Bukedi	52.3%	13.6%	6.8%	
Bunyoro	44.2%	7.8%	19.5%	
Busoga	45.3%	21.1%	11.6%	
Kampala	37.9%	22.0%	10.7%	
Karamoja	27.3%	9.1%	27.3%	
Kigezi	44.4%	13.9%	8.3%	
Lango	34.0%	4.3%	21.3%	
North Central	57.4%	19.8%	6.9%	
South Central	41.8%	22.4%	6.0%	
Teso	35.0%	13.3%	16.7%	
Tooro	37.3%	7.5%	22.4%	
West Nile	42.4%	10.9%	17.4%	
National	39.9%	15.7%	12.8%	

(iii) Complications during Pregnancy

Table 15: Showing complications experienced during pregnancy FY2022/2023

Perinatal Death Type	Complications d					
	APH	HTN in pregnancy	PROM	DM in pregnancy	Anaemia in pregnancy	U pre
Fresh Still Birth (764)	21.7%	10.6%	8.6%	2.4%	7.6%	2
Macerated still Birth (934)	7.9%	11.0%	5.9%	2.4%	5.8%	2
Neonatal Death (2257)	15.1%	15.3%	10.8%	2.6%	4.8%	2
Total (3955)	**14.7%**	**13.4%**	**9.2%**	**2.5%**	**5.6%**	**2**

Pre-eclampsia

- A pregnancy complication of high blood pressure
- Can occur even after delivery
- Multisystem progressive disorder affecting liver, kidneys, brain, lungs and how blood clots

Complication of pregnancy after 20 WOA

With	
Hypertension	≥140/90 (2X reading 4-6 hrs apart with rest in btn)
	Systolic Bp ≥ 30 mmHg Diastolic Bp ≥ 15 mmHg - from ANC booking Bp
Proteinuria	Urine dipstick for protein: ≥ 2+
	24 hour urine albumin ≥ 300mg

Do you have a Bp machine?

Can you take Bp correctly?

Can you interpreted Bp readings

Are you able to consult when need be?

Pre-eclampsia classification

Current classification

Pre-eclampsia with severe features

- Pre-eclampsia without severe features

Previous classification

- Severe pre-eclampsia
- Mild pre-eclampsia

Risk factors for preeclampsia

High risk factors

- Previous pregnancy with preeclampsia, especially early onset and with an adverse outcome
- Multifetal gestation
- Chronic hypertension
- Type 1 or 2 diabetes mellitus
- Chronic kidney disease
- Autoimmune disease with potential vascular complications (antiphospholipid syndrome, systemic lupus erythematosus)

Moderate risk factors

- Nulliparity
- Obesity (body mass index >30 kg/m2)
- Family history of preeclampsia in mother or sister
- Advanced maternal age (≥35 years)
- Previous adverse pregnancy outcome e.g., stillbirth, IUGR, abruption placentae etc.
- Interval >10 years between pregnancies
- Change of partner
- In vitro conception

Pre-eclampsia with severe features

- Any of these findings in a patient with preeclampsia:

  - doubling of serum creatinine concentration in absence of other renal disease
  - Systolic BP ≥160 mmHg or diastolic BP≥110 mmHg on ≥2 occasions
  - Impaired liver function as indicated by elevated liver transaminases at least twice upper limit or severe persistent RUQ or epigastric pain unresponsive to medication & not accounted for by alternative diagnoses, or both
  - Progressive renal insufficiency (serum creatinine >1.1 mg/dL or 90 μmol/L)

Pre-eclampsia with severe features cont'd

- Thrombocytopenia (platelet count <100,000/µL) with or without DIC, hemolysis

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- Pulmonary oedema (SPO_2 < 90%)
- Persistent cerebral or visual disturbances
- Neurological complications e.g severe headache, scotomata
- Uteroplacental dysfunction (IUGR, abnormal umbilical artery Doppler wave form or stillbirth)

HOW TO RULE OUT SEVERE FEATURES

- The severe features can be:
  - Symptoms
  - Physical examination findings
  - Laboratory findings
  - Imaging findings

Control or treatment of hypertension

- Threshold for treatment of hypertension in pregnancy is a SBP ≥140 mmHg and/or a DBP ≥90 mmHg
- This applies whether hypertension is chronic, gestational, or due to pre-eclampsia[1]
- Antihypertensive medications do not prevent eclampsia or disease progression
- Intended to prevent end organ damage mainly CVA / stroke
- Hypertension is classified as severe (BP≥160/110mmHg) or non severe (BP ≥140/90 mmHg to 159/109mmHg)

Treatment of non severe (mild) hypertension

- Drugs of choice are oral labetalol, nifedipine, or methyldopa or a combination
- Dosages should be titrated accordingly with response
- Should be lowered gradually over hours to days
- Target blood pressure is (130-139)/80-89 mmHg

Expectant management of preeclampsia

- Most patients with preeclampsia with severe features are delivered promptly to prevent maternal & foetal complications

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- Preeclampsia is progressive & no medical treatment to prevent progression exists except $MgSO_4$ to prevent eclampsia
- Delivery is always in the best interest of the mother
- However, preterm delivery may not always be in the best interest of the newborn
- Delaying delivery to increase fetal maturity & reduce neonatal morbidity & mortality can be considered under certain circumstances

Expectant management of preeclampsia cont'd

- The risk of expectant management is severe maternal end-organ damage
- Fetal risks include progressive growth restriction & demise
- Shared decision-making weighing risks & benefits of expectant management
- No direct maternal benefit from expectant management
- Mother is taking a significant risk to her own health to delay delivery
- Decision should be clearly documented & revisited at regular intervals
- There must be no absolute contraindication to expectant management

Components of expectant management for pre-eclampsia without severe features

- Outpatient care
- Weekly follow-up in ANC at minimum by a medical officer
- Assess for development of severe symptoms
- BP control as discussed
- Weekly laboratory tests (Platelets, AST, ALT, serum creatinine at minimum)
- Weekly obstetric USS for BPP, UA Doppler studies, NST, foetal growth
- Corticosteroid for those <34 WOG
- Teach mother to monitor foetal movement & return immediately if reduced
- Daily home BP monitoring if feasible & when to return
- If severe features develop, admit & deliver immediately
- If no severe features develop, deliver at 37WOG
- Strict bedrest is not recommended

Long term complications

Pre-eclampsia survivors are at an increase risk of the following

- Recurrent pre-eclampsia, fetal growth restriction, preterm delivery, abruptio placentae, and stillbirth in subsequent pregnancy
- Chronic hypertension, cardiovascular disease (CVD, including coronary heart disease, stroke, and heart failure)
- Chronic kidney disease
- Diabetes mellitus
- Depression, anxiety and PTSD

Antenatal prevention or risk reduction of preeclampsia

- Administer low dose aspirin 150mg once daily for a mother with any one of the high-risk factors or a mother with any two of the moderate risk mothers
- Start from 11 weeks of gestation but before 16 weeks of gestation
- Preferably taken at night
- Stop the aspirin at 36 weeks of gestation
- Calcium can also be given to population of low dietary calcium intake

Summary of approach to a pregnant woman with hypertension

- Thorough history to look for severe features
- Thorough physical exam to look for severe features
- Laboratory investigation to look for severe features
- Obstetric ultrasound scan for foetal growth and foetal well being
- Determine if patient has pre-eclampsia
- If patient has pre-eclampsia determine if its with or without severe features

Summary of approach to a pregnant woman with hypertension cont'd

- Treat hypertension appropriately
- Determine if at term or not
- If at term, deliver immediately (initiate delivery within 24 hours)
- If not at term, determine if there is indication for immediate delivery
- If no indication for immediate delivery, offer expectant management
- Terminate expectant management if indication for immediate delivery develops
- If no indication for immediate delivery develops, deliver at 37 weeks

Shortcomings in diagnosis and mgt of PET

1. Poor attitude of health workers – no time to listen to mothers. Improve
2. Lack of functional Bp machines – managers should respond positively
3. Heavy workloads – proper duty allocation
4. Poor monitoring behavior – health workers need commitment
5. Failure to interpret abnormal Bps – let us use protocols properly
6. Failure to consult where necessary – learn to consult on time

Shortcomings in diagnosis and mgt of PET cont'd

7. Mothers come late for first ANC – more sensitization on benefit of early ANC 1

8. Myths by communities – intensify health education

9. No videos on PET for mothers to learn more –

10. Lack of supplies to manage PET – ensure birth preparedness plan

Take home

- Improve availability of screening and diagnostic equipment for hypertensive disorders e.g urine dipstick, Bp machines

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- Scale up mentorship/simulation trainings on management of PET
- Avail guidelines of PET management at all levels of care
- Avail adequate stocks of anti-hypertensives and anti-convulsants
- Step up community awareness programs on hypertensive disorders

WE MEET AGAIN TO DISCUSS DIAGNOSIS AND MGT OF PET WITH SEVERE FEATURES

THANK YOU FOR LISTENING

Q & A