Pre-eclampsia: Guidelines and Emerging Therapeutic Paradigms

Executive Summary · Country Focus: Kenya

Overview

Pre-eclampsia remains a leading cause of maternal and perinatal death across Africa. This session paired current guidance with four cases from a Kenyan referral hospital, focusing on early recognition, prevention, stabilisation and well-planned delivery in resource-constrained settings.

Cases at a Glance

Presentation	Lesson
Severe pre-eclampsia; declined admission; returned postpartum with pulmonary oedema needing ICU	Counselling, admission and postpartum vigilance save lives
Eclampsia, extreme hypertension and severe tongue trauma; emergency tracheostomy with caesarean section	Airway protection and rapid ENT, anaesthesia and critical care input
29 weeks: hypertension, bleeding, thrombocytopenia and partial abruption	Uteroplacental disease can force emergency delivery at any gestation
Chronic hypertension with stroke, intracerebral haemorrhage, acute kidney injury and poor neonatal outcome	Uncontrolled severe hypertension is the direct route to stroke

Diagnosis

Pre-eclampsia is a multisystem disorder, not simply raised blood pressure with proteinuria. It is new hypertension (140/90 mmHg or higher) after 20 weeks with proteinuria (protein:creatinine ratio of 30 mg/mmol or more) and/or maternal organ dysfunction; proteinuria is not required when organ dysfunction is present. The ISSHP definition also counts uteroplacental dysfunction: fetal growth restriction, abnormal umbilical artery Doppler, abruption or fetal death.

Severe features: BP of 160/110 mmHg or higher, platelets below 100×10^9/L, haemolysis, raised creatinine, liver transaminases more than twice normal, pulmonary oedema, severe headache or visual disturbance, epigastric or right-upper-quadrant pain, and HELLP syndrome. A low sFlt-1/PlGF ratio, where available, helps rule out pre-eclampsia for a week.

Prediction and Prevention

- **High risk:** previous pre-eclampsia, multifetal pregnancy, chronic hypertension, type 1 or 2 diabetes, renal disease, autoimmune disease.
- **Moderate risk:** nulliparity, obesity, age over 35, family history, low socioeconomic status, assisted reproduction, long interpregnancy interval.

First-trimester screening combines maternal factors, mean arterial pressure, uterine artery Doppler and biomarkers, but biomarker cost limits its use in Africa. African research is testing models that drop the biomarkers and keep maternal factors and physical measurements.

Aspirin (75–162 mg, commonly 150 mg at night) should start at 12–16 weeks for women with one high-risk or two or more moderate-risk factors to about 36 weeks. **Calcium** 1.5–2 g daily is recommended by WHO where dietary intake is low, as in much of Africa. Statins, LMWH, metformin and L-arginine remain research areas rather than routine care.

Acute Management

Severe hypertension should be treated within 30–60 minutes of confirmation, aiming for about 135/85 mmHg while avoiding precipitous falls that compromise placental perfusion. Labetalol or methyldopa may be used for maintenance, according to local protocol.

Agent	Typical starting regimen	Note
Labetalol IV	20 mg, then 40–80 mg every 10 minutes (maximum 300 mg)	Avoid in asthma
Hydralazine IV	5 mg, repeated every 20 minutes (maximum 20 mg)	Pre-load with fluid cautiously
Nifedipine oral	10 mg immediate-release, repeated after 20–30 minutes	Useful where IV access is limited

Magnesium sulphate prevents and treats eclamptic seizures. Common regimens are Zuspan (4 g IV loading, then 1 g/h) and Pritchard (4 g IV plus 10 g IM, then 5 g IM every 4 hours), continued for 24 hours after delivery or the last seizure. A recurrent seizure is treated with a further 2–4 g IV. Monitor reflexes, respiratory rate (keep above 12/min) and urine output (above 25–30 mL/h). The antidote is 10 mL of 10% calcium gluconate IV over 10 minutes.

Timing and Mode of Delivery

- **Before 34 weeks:** expectant management for selected stable women with intensive surveillance and antenatal corticosteroids.
- **34–36 weeks:** individualised decision based on maternal and fetal status.
- **From 37 weeks:** delivery is recommended for pre-eclampsia without severe features.
- **Any gestation:** deliver promptly for uncontrolled BP, eclampsia, HELLP, pulmonary oedema, abruption or fetal compromise.

Caesarean section is not itself the treatment for eclampsia. Stabilise first (seizure control, BP control and assessment of end-organ function) and then choose the mode of delivery on obstetric grounds.

HELLP Syndrome

HELLP requires stabilisation, magnesium sulphate, fetal assessment and blood-product support, with delivery as definitive treatment. Platelet transfusion is usually advised before caesarean section if the count is below 50 × 10^9/L, and neuraxial anaesthesia is generally avoided at low counts. Platelets may keep falling for 24–48 hours after delivery, so monitoring must continue.

Postpartum Care and Long-Term Health

Pre-eclampsia does not end at delivery. Blood pressure often peaks on days 3–6, and eclampsia can occur postpartum, so women need BP checks, medication review and danger-sign counselling. Nifedipine, amlodipine and enalapril are compatible with breastfeeding, and methyldopa is best stopped soon after birth because of its link with depression. Affected women face higher lifelong risks of hypertension, cardiovascular disease, stroke, heart failure and chronic kidney disease, and a recurrence risk of about 1 in 6, so annual BP and cardiometabolic review is advised.

Contraception is part of maternal safety: long-acting reversible or permanent methods should be offered through informed counselling, with WHO advising an interval of at least 24 months before the next pregnancy to allow risk factors to be optimised.

Care in Resource-Limited Settings

Without advanced tests, outcomes still improve with regular BP checks, danger-sign education, basic laboratory tests, fetal surveillance, early referral and clear inter-facility communication. Complex cases need multidisciplinary input.

Key Takeaways

- Treat pre-eclampsia as a multisystem disease; proteinuria is not required for diagnosis.
- Screen every woman for risk and start aspirin early, with calcium where intake is low.
- Treat severe hypertension urgently and give magnesium sulphate for severe disease; strong basics save lives even where resources are limited.
- Stabilise the mother first; eclampsia alone is not an indication for caesarean section.
- Follow women up after birth and for life, and plan contraception and future pregnancies.