Peripartum Cardiomyopathy: Recognition and Management

Executive Summary · Country Focus: South Africa

Overview

Peripartum cardiomyopathy (PPCM) is a leading cause of maternal death in South Africa, accounting for about one-third of cardiovascular maternal deaths. This session presented a severe case in a twin pregnancy and reviewed diagnosis, pathophysiology and the BOARD approach to management, with practical guidance for resource-limited settings.

Case at a Glance

Patient	27-year-old, second pregnancy, 37+5 weeks with DCDA twins; no pre-existing disease
Presentation	Acute breathlessness; type 1 respiratory failure, severe metabolic acidosis, severe hypertension, tachycardia
Echocardiogram	LVEF below 20%, severely dilated left ventricle, mild mitral and tricuspid regurgitation: severe PPCM
Acute care	Diuretics, CPAP/NIV and magnesium sulphate; emergency caesarean section once stabilised
Postpartum	ACE inhibitor, beta-blocker and spironolactone. Bromocriptine was considered but withheld because breastfeeding was essential for the family

Definition and Diagnosis

PPCM is new heart failure with LVEF below 45%, with or without LV dilatation, towards the end of pregnancy or after delivery, with no other identifiable cause. It is a diagnosis of exclusion and is no longer strictly limited to the last month of pregnancy and first five months postpartum. An EF above 45% does not exclude it where clinical suspicion is strong, particularly with pre-eclampsia overlap or diastolic dysfunction. A raised BNP or NT-proBNP supports the diagnosis and is a useful screen where echocardiography is scarce. Differentials include pre-existing cardiomyopathy or valve disease, pulmonary embolism, pre-eclampsia with pulmonary oedema, myocardial infarction and amniotic fluid embolism.

Burden and Risk Factors

Global incidence is about 1 in 2,000 births, with wide variation: up to 1 in 100 in parts of Nigeria and about 1 in 1,000 in South Africa. Women of African ancestry have a 3- to 16-fold higher risk. Other risk factors are hypertensive disorders of pregnancy, age over 30 (especially over 40), multiparity, multiple gestation, obesity, smoking, diabetes and prolonged tocolysis.

Pathophysiology

A "multi-hit" model is proposed. Genetic susceptibility (including titin truncating variants, more common in African women) combines with oxidative stress, which activates cathepsin D to cleave prolactin into a 16 kDa antiangiogenic fragment that damages the endothelium and myocardium. Placental sFlt-1 adds to this by blocking VEGF and PlGF, explaining the strong overlap with pre-eclampsia (present in about 22% of PPCM cases against a 5% background).

Management: The BOARD Approach

Component	Key points

B – Bromocriptine	For severe cases (EF below 25%, cardiogenic shock, ICU care). Blocks prolactin release; breastfeeding must stop. Always given with at least prophylactic anticoagulation
O – Oral heart failure therapy	Antenatal: diuretics, beta-blockers (metoprolol, bisoprolol), hydralazine with nitrates. Postpartum: add ACE inhibitor or ARB, MRA and SGLT2 inhibitor (all contraindicated in pregnancy). If breastfeeding, enalapril or captopril are preferred and SGLT2 inhibitors avoided
A – Anticoagulation	Therapeutic LMWH if EF below 35%, LV thrombus or atrial fibrillation
R – Relief	Acute heart failure algorithm: oxygen, NIV, diuresis, and inotropes or mechanical support in shock
D – Delivery	Multidisciplinary, individualised timing and mode; urgent delivery if haemodynamically unstable. Vaginal birth with epidural is reasonable if stable; caesarean for obstetric indications or decompensation

Bromocriptine: Evidence and Alternatives

A European registry of over 500 women found about 53% lower odds of adverse outcome when bromocriptine was added to standard therapy, with no clear advantage of a one-week over an eight-week regimen. ESC guidance suggests 2.5 mg daily for one week in uncomplicated cases, and 2.5 mg twice daily for two weeks then daily for six weeks in severe disease. It is not a treatment for hypertension and is reserved for confirmed severe PPCM. Cabergoline may offer better adherence and tolerability, and a Canadian trial comparing the two is expected to report around 2026–2027. Pyridoxine has no evidence of reducing the harmful prolactin fragment.

Obstetric Dilemmas and Low-Resource Practice

- **Magnesium sulphate** can be used cautiously where pre-eclampsia genuinely coexists, in a restricted volume (for example 8 g in 200 mL saline at 25 mL/h), despite its negative inotropic and hypotensive effects.
- **Antenatal corticosteroids** may worsen pulmonary oedema, creating a real dilemma when preterm delivery is likely.
- **Without echo or CT pulmonary angiography,** treat on clinical grounds using heart failure principles rather than waiting to distinguish PPCM, pulmonary embolism and pre-eclampsia.

Prognosis and Future Pregnancy

In high-income countries about 47% of women recover fully and 9% die. South African cohorts fare worse, with only 21–32% recovering by six months and about 11% mortality. Echocardiography should be repeated at around six weeks, six months and then annually. Women with EF below 35% early on may benefit from a wearable defibrillator, as implantable devices are usually deferred until the chance of recovery has passed.

After recovery to EF above 50%, a further pregnancy still carries about a 10% risk of heart failure relapse or death. With EF below 50%, and especially below 30%, pregnancy is strongly discouraged because relapse risk approaches 50%. Long-acting reversible contraception is preferred, and oestrogen-containing methods should be avoided.

Key Takeaways

- Suspect PPCM in any late-pregnancy or postpartum woman with breathlessness, especially with African ancestry, pre-eclampsia or twins.
- An EF above 45% does not exclude the diagnosis; use BNP and clinical judgement where echo is limited.
- Treat with the BOARD approach, adjusting drugs for pregnancy and breastfeeding.

- Reserve bromocriptine for severe disease, always with anticoagulation, and weigh breastfeeding needs openly.
- Do not delay heart failure treatment while waiting for imaging.
- Follow up long term and counsel every woman on contraception and future pregnancy risk.