Immunosuppression therapy in the management of peripartum cardiomyopathy: a case series and literature review

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Background

• PPCM is a heart failure syndrome occurring late in pregnancy or during the early post-natal period, it is a diagnosis of exclusion.
• The pathophysiology of PPCM is not fully understood.
  1. Oxidative stress
  2. Systemic angiogenic imbalance
  3. Autoantibodies against cardiac tissue
  4. Viruses
  5. Inflammatory process
Case 1

• 50 year old
• **Presentation and background:** Pulmonary oedema, 12d post emergency CS delivery of IVF (donor egg) twins, following pre-eclampsia.
• **Investigations:** CTPA- negative for PE, ECHO-LVEF 30%.
• **Management:** HF medication, aspirin, IV methylprednisolone x 2.
• **Outcome:** Clinical improvement.
• **Longer term outcome:** ECHO (6 mo post) restoration of normal systolic function.
Case 2

- 37 year old
- **Presentation and background:** Parity 2 gravida 2, pulmonary oedema 8 d post CS.
- **Investigations:** CTPA-negative for PE, ECHO- LVEF 15%.
- **Management:** HF medication, aspirin, IV methylprednisolone.
- **Outcome:** Clinical improvement, ECHO (days post) LVEF 37%.
- **Longer term outcome:** ECHO (1 mo post) LVEF 40-50%, and within two months restoration of normal systolic function.
Case 3

• 31 year old

• **Presentation and background:** 2d post partum (5th pregnancy), pulmonary oedema following a blood transfusion. Known asthmatic.

• **Investigations:** CTPA- negative for PE. ECHO- LVEF 35%, 24 hour urinary collection, MRI adrenal glands.

• **Management:** HF medication, aspirin, IV methylprednisolone.

• **Outcome:** Clinical improvement.

• **Longer term outcome:** ECHO (3 mo post) 45% and within 8 months restoration of normal systolic function.
Case 4

- 41 year old woman
- Presentation and background:
  Preterm labour IVF twins (33/40). Pulmonary oedema following fluid resuscitation post tocolytic induced hypotension. Emergency CS under GA.
- Investigations:
  CTPA small PE. ECHO LVEF 35%. Repeat ECHO (few days post) LVEF 20%, PAP 52mmHg.
- Management:
  HF medication, aspirin, IV methylprednisolone x 2.
- Initial outcome:
  Clinical improvement, MRI (one day post) LVEF of 32%. Late gad-uptake in the mid part of the myocardium. ECHO (1d post) PAP 25-30mmHg. ECHO (5d post) 40%.
- Longer term outcome:
  ECHO (1 mo post) 45%. MRI (5 mo post) LVEF 45%, subepicardial late gad enhancement.
Conclusion

1. All patients had RF for PPCM (age, multiple previous pregnancies, twin pregnancies, pre-eclampsia, tocolytics)

2. All patients demonstrated impressive recovery of cardiac function following high dose immunosuppressive therapy.

3. 3 out of 4 patients fell into poor prognostic category (LVEF <30% at presentation, likelihood of recovery is low)

4. This case series adds to the evidence for the role of immunosuppressants in the management of PPCM.