

Peripartum Cardiomyopathy Is an Autoimmune Disease

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PPCM

- First noted in the 18th century
- Pregnancy-associated heart failure 1937
- Defined as PPCM in the 70s, Cook County
 - Cardiac decompensation in the last 2 months of pregnancy and up to 5 months postpartum
- Now also believed to occur earlier
and
- With absence of determinable causes

Prevalence of hospitalization, 2004-2006

- Cardiomyopathy 0.46 per thousand del.
- PPCM 0.18 per thousand del.
 - *Kuklina and Callaghan Obstet Gynecol 2010*

Differential Diagnosis

PPCM	Preeclampsia
CHF/Pulm. ed.	CHF/Pulm. ed.
Left ventr. syst. dysfunction	---



PPCM

- Characterized by its occurrence and recurrence in association with pregnancy
- Typical for autoimmune conditions


PPCM

- Organ-specific autoimmune expression of defect in normal allograft tolerance during pregnancy



Pregnancy

- Is a semi-allograft
- Requiring induction of maternal immune tolerance
- Which can malfunction
- And cause (amongst others) autoimmune abnormalities

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- We consider PPCM to represent a cardiac-specific autoimmune response, caused by abnormal allograft tolerance



Failure of Allograft Tolerance

- At first HLA encounter
- At peak HLA exposure



Heart can be target of tissue-specific immune response following allotransplant

- *Platzbecker et al Bone Marrow Transplant 2001*

- Acute heart failure
- ↓ in left ventricular function

After allogeneic blood stem cell transplant with GVHD, grade III

Other Evidences

- ↑ Anti-myosin IgG Abs. after cardiac transplants with acute rejection
 - *Warrack et al. Biochem Biophys Res Commu 1999*
- With poorer transplant outcomes
 - *Morgun et al. J Heart Lung Transplant 2004*
- Anti-endothelial Abs. with chronic rejection
 - *Ferry et al. Transplant Immunol 1997*



PPCM

- Can, then, be viewed as a heart-specific GVHD-like immune reaction



PPCM

- Responsive to prolactin inhibition?
- Actually supportive of autoimmune etiology



Elevated Prolactin Is Associated

- With abnormal autoimmunity
 - *Vera-Lastra et al. Autoimmune Rev 2004*
- Reduction improves clinical diseases
 - *Peeva et al. Biomed Pharmacotherap 2004*

Recovery from PPCM

- Reported in MOST with standard supportive care (though not all)
- But questionable whether complete
 - *Lampert et al. Am. J. Obstet Gynecol 1997*
- Treatments directed at pathophysiology/etiology may have better results

Potential Treatments for PPCM

- IV-Ig (improves left ventr. function?)
 - *Latif et al. Am J Cardiol 1993*
- Carvedilol
 - *Tatli and Kurum. Canad J Cardiol 2005*
- Pentoxifylline
 - *Sliwa et al. Am J Cardiol 2002*
- Extracorporeal immunoabsorption
 - *Caforio et al. Autoimmunity 2008*
- Anti-GVHD/rejection drugs

