

Learning Zone: Peripartum Cardiomyopathy. Dr Helen Kennedy

Title	Peripartum Cardiomyopathy
Relevant Recent Publications	<p><a href="#">Peripartum Cardiomyopathy</a> <i>BMJ</i> 2019; 364: k5287</p> <p><a href="#">Cardiovascular Considerations in Caring for Pregnant Patients</a>: A Scientific Statement From the American Heart Association. June 2020.</p> <p><a href="#">Pathophysiology, diagnosis and management of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Study Group on peripartum cardiomyopathy</a> <i>European Journal Heart Failure</i> 2019; 21(7): 827-843.</p> <p><a href="#">Pregnancy outcomes in women with heart disease: the CARPREG II study</a> <i>Journal of the American College of Cardiology</i> 2018; 71: 2419–30.</p> <p><a href="#">Peripartum Cardiomyopathy</a> <i>Circulation</i> 2016; 133: 1397-1409.</p> <p><a href="#">Obstetric anaesthesia management of the patient with cardiac disease</a> <i>International Journal of Obstetric Anaesthesia</i> 2019; 37, 73-85</p>
OAA webcast (in last 4 years)	<p><b>Cardiac Disease in pregnancy.</b> Prof Cathy Nelson-Piercy Three Day Course in Obstetric Anaesthesia, Church House: Day 2 Tuesday 5<sup>th</sup> November 2019. Password: firework <a href="http://www.oaawebcast.info/tuesday-5th.html">http://www.oaawebcast.info/tuesday-5th.html</a></p> <p><b>Cardiac disease / pregnancy.</b> Dr Katrijn Jansen OA19 Newcastle Day 1: Thursday 23<sup>rd</sup> May 2019 Password: bridge <a href="http://www.oaawebcast.info/oa-19-thursday.html">http://www.oaawebcast.info/oa-19-thursday.html</a></p> <p><b>Cardiac Issues.</b> Dr Vinnie Sodhi Obstetric Anaesthesia Management Day, RCP: Friday 5<sup>th</sup> October 2018. Password: management <a href="http://www.oaawebcast.info/management-2018.html">http://www.oaawebcast.info/management-2018.html</a></p>

	<p><b>Cardiac disease in obstetric patients.</b>  Dr Aisling Carroll  Three Day Course in Obstetric Anaesthesia: Wednesday 8<sup>th</sup> November 2017. Password: bonfire  <a href="http://www.oaawebcast.info/wednesday-8th.html">http://www.oaawebcast.info/wednesday-8th.html</a></p> <p><b>The parturient with cardiac disease.</b>  Dr Fiona Walker  Three Day Course in Obstetric Anaesthesia: Wednesday 9th November 2016. Password: church  <a href="http://www.oaawebcast.info/3dc-16-menu.html">http://www.oaawebcast.info/3dc-16-menu.html</a></p>
OAA posters (in last 4 years)	<p>Obstetric Anaesthesia Conference May 2020 (Birmingham)</p> <p><a href="#">Peripartum management of a patient with dilated cardiomyopathy</a> M Webb</p> <p><a href="#">Peripartum cardiomyopathy: a diagnostic dilemma</a> A Dhadda</p> <p>Obstetric Anaesthesia Conference May 2019 (Newcastle)</p> <p><a href="#">First presentation of peripartum cardiomyopathy with Out-Of-Hospital cardiac arrest in late puerperium</a> E Poimenidi</p> <p><a href="#">Peripartum cardiomyopathy - Bromocriptine as a novel and effective treatment</a> G Longobardi</p> <p><a href="#">A case of severe peripartum cardiomyopathy successfully managed with extracorporeal membrane oxygenation</a> C Griffiths</p> <p>Obstetric Anaesthesia Conference May 2017 (Brussels)</p> <p><a href="#">A review of peripartum cardiomyopathy cases presenting over a three-year period</a> P Dhar</p>
MBRRACE-UK	<p><a href="#">MBRRACE Slide Presentations:</a></p> <p>Saving Lives – Overall messages for cardiovascular disease care – Nov 19</p> <p>Saving Lives – Cardiac arrhythmia, SADs and myocardial disease – Nov 19</p> <p>Saving Lives – The pathology of cardiovascular deaths – Nov 19</p> <p>Saving Lives – Dissection, ischaemia, myocardial &amp; congenital disease Dec 2016</p>

	All links can be accessed <a href="#">here</a>
National guidelines	<p><a href="#">Cardiac Disease and Pregnancy</a> RCOG Good Practice Guideline no.13 June 2011</p> <p>RCPSG: <a href="#">Addressing the Heart of the Issue</a>: Good clinical practice in the shared obstetric and cardiology care of women of childbearing age.</p> <p><a href="#">Intrapartum care for women with existing medical conditions or obstetric complications and their babies</a> NICE guideline [NG121] March 2019</p> <p><a href="#">Intrapartum care: existing medical conditions and obstetric complications</a>. Quality standard [QS192] February 2020</p>
International Guidelines	<p>2018 ESC Guidelines for the Management of Cardiovascular Diseases During Pregnancy: Section 8. Cardiomyopathies and heart failure: 8.1 Peripartum cardiomyopathy. Full guideline available <a href="#">here</a></p> <p><a href="#">Pregnancy and Heart Disease 2019</a> ACOG: American College of Obstetricians and Gynaecologists. Practice Bulletin No. 212</p>
Audit / QI suggestions	<p>Raising the Standards: RCoA Quality Improvement Compendium: Obstetrics 7.9 Timely anaesthetic involvement in the care of high-risk and critically ill women (<a href="#">page 260</a>)</p>
FRCA questions	<p>No previous FRCA question on Peripartum Cardiomyopathy Please find example CRQ below</p>
Simulation suggestion	

### Cardiomyopathy Example CRQ

**a) What are the diagnostic criteria for peripartum cardiomyopathy? (4 marks)**

- Heart failure developing towards the end of pregnancy or up to five months post-partum
- Absence of another identifiable cause of cardiac failure
- Absence of cardiac symptoms or disease prior to late pregnancy
- Left ventricular dysfunction - defined as an ejection fraction less than 45% or reduced fractional shortening of less than 30%

**b) What are the risk factors for peripartum cardiomyopathy? (4 marks)**

- Maternal age >30 yrs
- Multiparity
- Ethnic group – e.g. African descent
- Obesity
- Multiple pregnancy
- Pregnancy associated hypertensive disorders
- Essential hypertension
- Tocolytic therapy with  $\beta$ -agonists
- Cocaine use

**c) What are the anaesthetic management aims during labour for a woman with peripartum cardiomyopathy, and how can these be achieved? (12marks)**

Anaesthetic Aims	Management strategies
<b>Maintain myocardial perfusion</b>	
<ul style="list-style-type: none"> <li>- avoid hypotension</li> <li>- avoid tachycardia</li> <li>- avoid arrhythmia</li> </ul>	Consider invasive blood pressure monitoring Smooth induction of general anaesthetic Titrated combined spinal epidural technique Maintain intravascular volume ECG monitoring and early intervention
<b>Reduce myocardial workload</b>	
<ul style="list-style-type: none"> <li>- avoid catecholamine surges</li> </ul>	Early epidural Opiates to attenuate response to laryngoscopy Good intra and post-operative analgesia e.g. Continue epidural post-operatively
<b>Optimise cardiac output</b>	
<ul style="list-style-type: none"> <li>- maintain preload</li> <li>- maintain/increase contractility</li> <li>- prevent increased afterload/ reduce systemic vascular resistance.</li> </ul>	Consider cardiac output monitoring Avoid prolonged Valsalva – consider instrumental second stage of labour Neuraxial anaesthesia achieves this better than general anaesthesia Avoid aortocaval compression Neuraxial anaesthesia Try to avoid ergometrine

Suggested resources:

Ratnayake G, Patil, V. Anaesthetic Management in Peripartum Cardiomyopathy. *Journal of Anaesthesia and Intensive Care Medicine* 2018; 6(1): 555677. DOI:

10.19080/JAICM.2018.06.555677

Available at: <https://juniperpublishers.com/jaicm/pdf/JAICM.MS.ID.555677.pdf>

Ibrahim IR, Sharma V. Cardiomyopathy and anaesthesia. *BJA Education* 2017; 17(11): 363-369. DOI: 10.1093/bjaed/mkx022

Available at: <https://academic.oup.com/bjaed/article/17/11/363/3868553>

Burt C, Durbridge J. Management of cardiac disease in pregnancy. *BJA Education* 2009; 9(2): 44-47. DOI: 10.1093/bjaceaccp/mkp005

Available at: <https://academic.oup.com/bjaed/article/9/2/44/299573>

Ray P, Murphy GJ, Shutt LE. Recognition and management of maternal cardiac disease in pregnancy. *British Journal of Anaesthesia* 2004; 93(3): 428-439. DOI: 10.1093/bja/ae194

Available at: [https://www.bjanaesthesia.org.uk/article/S0007-0912\(17\)35890-7/fulltext](https://www.bjanaesthesia.org.uk/article/S0007-0912(17)35890-7/fulltext)