

Evidence Table

The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynyk and Fineout-Overholt (2011).

I Evidence obtained from a systematic review of all relevant randomised control trials.

II Evidence obtained from at least one well designed randomised control trial.

III Evidence obtained from well-designed controlled trials without randomisation.

IV Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case- series

V Evidence obtained from systematic reviews of descriptive and qualitative studies

VI Evidence obtained from single descriptive and qualitative studies

VII Expert opinion from clinicians, authorities and/or reports of expert committees or based on physiology

Melynyk, B. & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing & healthcare: A guide to best practice (2nd ed.)*. Philadelphia: Wolters Kluwer, Lippincott Williams & Wilkins.

National Health and Medical Research Council (2009). *NHMRC levels of evidence and grades for recommendations for developers of guidelines* (2009). Australian Government: NHMRC.

http://www.nhmrc.gov.au/_files_nhmrc/file/guidelines/evidence_statement_form.pdf

OCEBM Levels of Evidence Working Group Oxford (2011). *The Oxford 2011 Levels of Evidence*. Oxford Centre for Evidence-Based Medicine. <http://www.cebm.net/index.aspx?o=1025>

Evidence Table continued

Reference	Evidence Level	Key findings, outcomes or recommendations
Van der Griend, B; Lister, N; Mackenzie, I; Martin, N; Ragg, P; Sheppard, S and Davidson, A (2011) Postoperative mortality in children after 101,885 anaesthetics at a paediatric hospital	VI	Anaesthesia related mortalities is higher in children with heart disease and in particular those with pulmonary hypertension. Entire peri operative process needs to be looked at if deaths are to be prevented.
Carmosino, M; Friesen,R; Doran, A and Ivy, D (2007) Perioperative complications in children with Pulmonary Hypertension undergoing non cardiac surgery or cardiac catheterisation	VI	Article shows relevance of ensuring a comprehensive preoperative assessment of PAH patients is made. Status of PAH (sub,sys or supra systemic) effects the risks associated with undergoing an anaesthetic for a surgical procedure.
Kipps, A; Ramamoorthy, C; Rosenthal, D and Williams, G (2007) Children with cardiomyopathy: complications after non cardiac procedures with general anaesthesia.	VI	For patients with severe ventricular dysfunction it is recommended that early consideration of intensive care support occur to optimise cardiovascular therapy monitoring. With appropriate levels of peri procedural care even patients with severe ventricular dysfunction can be managed successfully. Describes a multidisciplinary pre procedure assessment and management of patient to optimise clinical status.
Ing, R; Ames, W and Chambers, N (2012) Paediatric cardiomyopathy and anaesthesia	V	Due to advances in treatment and cardiac imaging anaesthesia management of cardiomyopathy patients is constantly evolving. Paediatric cardiomyopathy is rare but comes with significant peri operative risks.
RCH Department of Cardiology, Pulmonary Hypertension Protocol	VII	Provides guidelines for PAH patients having general anaesthesia
Nives,J and Kohr (2010) Nursing considerations in the care of patients with pulmonary hypertension	VII	Nurses have an important role in providing continuity of care to patients with PAH. Nurses are able to anticipate and avoid triggers of a PAH crisis. Nurses are able to facilitate an optimal clinical environment so as to promote pulmonary vasodilation and maximise RV function.

Shukla, A.C and Almodovar, M.C (2010) Anaesthesia considerations for children with pulmonary hypertension.	VII	Optimal scheduling of procedures for patients with PAH should aim to avoid prolonged fasting times. Part of the preparation and planning of any procedure that a PAH patient must undergo should be ensuring the availability of a bed in intensive care.
Price, L; Dick, J; Wort,S and Kavanagh, B (2012) Anaesthesia and surgery in pulmonary hypertension: perioperative management	VII	PAH patients presenting with mild haemodynamic impairment should not be underestimated. When caring for patients with PAH undergoing a general anaesthetic a multidisciplinary team approach is essential along with a clearly defined emergency plan to treat a PAH crisis.
Twite, MD and Robert, H. (2014). The Anaesthetic Management of Children with Pulmonary Hypertension in the Cardiac Catheterization Laboratory.	VII	PAH patients are at increased risk of perioperative complications. It is essential an experienced anaesthesiologist cares for these patients. Also, important to avoid factors that may trigger a PH crisis, but if it does occur, to be appropriately responded to. Good communication is important.
Seyfarth HJ, Gille J, Sabiotzki A, Gerlach S, Malcharek M, Gosse A, Gahr RH, Czeslick E. (2015). Perioperative management of patients with severe Pulmonary Hypertension in major orthopaedic surgery: experience-based recommendations.	VI	Patients with severe PH are at an increased risk when any form of surgery is performed. Stress, pain, mechanical ventilation and trauma induced inflammation can further increase pressure and resistance within the pulmonary arteries and therefore cause right sided heart failure. Choosing an anaesthetic team is just as important as the technique used. Positive outcome can be achieved by individualised care with an interdisciplinary treatment plan.