

NITRIC OXIDE Supporting information

This guideline has been prepared with reference to the following:

Macrae DJ, Field D, Mercier JC, et al. Inhaled nitric oxide therapy in neonates and children: reaching a European consensus. *Intens Care Med* 2004;30:372-80

Nitric oxide is contraindicated in congenital heart disease?

A 2021 review claimed that nitric oxide use is absolutely contraindicated in neonates with ductal dependent congenital heart defects (Chandrasekharan, 2021).

An updated Cochrane systematic review of four randomized trials (Bizzarro, 2014) compared the effects of postoperative inhaled nitric oxide versus placebo and/or conventional management on infants and children with congenital heart disease. The study found that there does not appear to be any significant clinical benefit with the use of postoperative iNO to treat pulmonary hypertension in children with congenital heart disease. There does not appear to be convincing evidence that Nitric oxide is contraindicated in these patients though. The reviewers observed no differences between groups with respect to mortality (P = 0.50), PHTC (P = 0.79), change in MPAP (P = 0.36), MAP (P = 0.40), HR (P = 1.00), or PaO₂:FiO₂ (P = 0.46). Firm conclusions could not be drawn, due to doubt about the validity of some of the studies.

Bizzarro M, Gross I, Barbosa F. Inhaled nitric oxide for the postoperative management of pulmonary hypertension in infants and children with congenital heart disease. *Cochrane Database Syst Rev*. 2014, Art. No.: CD005055

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005055.pub3/full>

Chandrasekharan P, Lakshminrusimha S & Abman SH. When to say no to inhaled nitric oxide in neonates? *Semin Fetal Neonatal Med*. 2021 Apr;26(2):101200

Evidence Level: I

**Last amended December 2021
Last reviewed December 2021**