

How Benign Is a Patent Ductus Arteriosus (PDA) on Brain Volume in Preterm Infants?

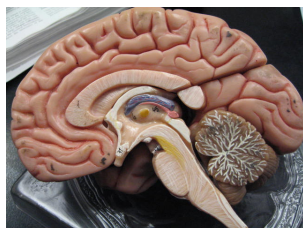
April 11, 2016

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Dr. Lewis First, MD, MS, Editor-in-Chief, Pediatrics

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Article type: [Pediatrics Blog](#)



We are certainly concerned about a patent ductus arteriosus (PDA) that does not close shortly after birth in preterm infants without cyanotic congenital heart disease so as to make sure there is adequate perfusion and oxygenation through the body, but just how much of an effect can a persistent patent PDA really have on an infant's neurodevelopment in the long-term?

Lemmers et al, ([10.1542/peds.2015-3090](#)) provide observation data from 140 preterm infants in three groups—those with PDAs closed quickly with indomethacin, those who eventually needed surgery to close, and matched equivalent age.

Sadly, the PDAs that required surgical closure at a longer time post-birth than those PDAs that closed with indomethacin or controls showed a decrease in brain volume—a worrisome finding to say the least. Although neurodevelopmental outcomes were not reported in this study, we think that this study will trigger investigators to look at comparative outcomes along with brain volumes in children with persistent PDAs to see if presumed decreased oxygenation from prolonged patency of the PDA takes its neurodevelopmental toll.

To add some additional perspective on what this article is telling us, Dr. Rocky Tsang and Lara Shekerdemian ([10.1542/peds.2015-4659](#)) offer a commentary as to whether an added emphasis on earlier closure is needed to protect the immature brain from losing volume and in turn developmental capability. You may want to share this study and commentary with your cardiology and cardiac surgical colleagues so they, like you may consider the benefits versus the risks of needing to close a duct surgically sooner than later.

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