Tailoring treatment for preterm infants born with heart defects

September 27 2019, by Leigh MacMillan

Credit: CC0 Public Domain

The nonsteroidal anti-inflammatory drug indomethacin is routinely used to treat patent ductus arteriosus (PDA), a persistent opening between the aorta and pulmonary artery that is a common complication in preterm infants. Clinical response and toxicity to indomethacin are highly variable. About one in four infants treated with indomethacin requires

subsequent surgical ligation, and adverse effects include kidney and gastrointestinal dysfunction.

Prince Kannankeril, MD, MSCI, and colleagues sought to identify risk factors for indomethacin failure—indomethacin treatment followed by surgical ligation—in preterm infants with PDA. They investigated clinical factors and four candidate genetic variants in a multicenter cohort of 144 preterm infants who received indomethacin to treat PDA.

In the journal *Pharmacogenomics*, the researchers report that gestational age, surfactant use and a variant in the gene CYP2C9, which encodes a protein that metabolizes indomethacin, were each associated with indomethacin failure.

The study identifies clinical and genetic predictors of indomethacin response, which will help tailor treatment of PDA in preterm infants.

More information: Sydney R Rooney et al. CYP2C9*2 is associated with indomethacin treatment failure for patent ductus arteriosus, *Pharmacogenomics* (2019). DOI: 10.2217/pgs-2019-0079

Provided by Vanderbilt University