The patent ductus arteriosus of premature neonates should be closed via transcatheter techniques instead of surgical ligation

John P Breinholt
McGovern Medical School, USA

The patent ductus arteriosus (PDA) of premature neonates continues to be a significant clinical problem contributing importantly to both morbidity and mortality. Surgical ligation and medical therapy both have their drawbacks. Medical therapy has a high failure rate and is associated with the renal dysfunction and gastrointestinal morbidities. Surgical ligation has a high success rate, but has been associated with pneumothorax, phrenic nerve palsy and vocal cord paralysis, and scoliosis. While transcatheter PDA closure has been performed for nearly 40 years, it has largely been reserved for children >5 kg. We have focused on the safety and efficacy of PDA device closure in premature neonates <3 kg. The hospital records and catheterization reports of premature neonates were reviewed with attention to procedural details, complications, and short term outcomes. We recorded the results of neonates who received one of two commercially available devices for PDA closure, with a focus on a newly available microvascular plug that enables delivery via a microcatheter. The device is delivered with fluoroscopy and echocardiographic guidance. Complete closure was achieved in all patients. All patients survived the procedure and are currently living. There have been no instances left pulmonary artery obstruction or coarctation of the aorta. This preliminary study demonstrates that transcatheter PDA closure can be successfully performed in preterm neonates using currently available technology with a high success rate and a low incidence of complications. We also describe a novel transvenous approach using a combination of echocardiography and fluoroscopy to avoid arterial access in this fragile patient population.

Biography
John P Breinholt has completed his MD at the University of Utah School of Medicine. He completed his Pediatrics Residency, Pediatric Cardiology Fellowship and advanced training in Pediatric Interventional Cardiology at Baylor College of Medicine and Texas Children’s Hospital in Houston, Texas. He is the Division Director of Pediatric Cardiology at the University of Texas Health Science Center at Houston and the Chief of Pediatric Cardiology at Children’s Memorial Hermann Hospital. He is also the Pediatric Cardiology fellowship Director. He has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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