Benefit of early screening for vascular disorder among extremely preterm infants

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Among extremely preterm infants, early screening for the vascular disorder patent ductus arteriosus before day 3 of life was associated with a lower risk of in-hospital death and pulmonary hemorrhage, but not with differences in other severe complications, according to a study in the June 23/30 issue of *JAMA*.

The ductus arteriosus is a blood vessel in a fetus that bypasses pulmonary circulation by connecting the pulmonary artery directly to the ascending aorta. It usually closes within 72 hours of birth in most normal-term infants. However, failure to close is common in extremely premature infants, resulting in patent (open) ductus arteriosus (PDA), which can result in serious complications. There is currently no consensus for the screening and treatment of PDA. Some neonatologists perform early screening echocardiography (imaging of the heart with ultrasound) for PDA, which allows for diagnosis and treatment at a preclinical stage, according to background information in the article.

JeanChristophe Roze, M.D., Ph.D., of Nantes University Hospital, Nantes, France, and colleagues compared outcomes for preterm infants who received early screening echocardiography before day 3 of life vs. those not screened. The study included infants born at less than 29 weeks of gestation and hospitalized in 68 neonatal intensive care units in France from April through December 2011.

The final analysis included 847 infants who were screened ("exposed" group) for PDA and 666 who were not; 605 infants from each group

could be paired. The proportion of infants who received a treatment for PDA at any time during their hospitalization was significantly lower in the nonexposed group than in the exposed group (43 percent vs 55 percent). Exposed infants had a lower hospital death rate (14 percent vs 18.5 percent). The number of infants needed to be screened to prevent 1 death was 23. Exposed infants also had a lower rate of pulmonary hemorrhage (6 percent vs 9 percent), a life-threatening complication.

No significant differences were observed in rates of necrotizing enterocolitis (severe inflammation due to decreased blood flow that occurs in the intestines of premature infants), severe bronchopulmonary dysplasia (a chronic lung disorder in infants), and severe cerebral (brain) lesions.

The authors note that additional analysis resulted in some ambiguity regarding the interpretation of the results (whether the reduced mortality finding was statistically significant), and longer-term evaluation is needed to provide clarity.

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