

Doppler Ultrasound May Cut Perinatal Mortality

VITALS

Major Finding: Doppler ultrasound imaging in high-risk pregnancies was associated with a 29% reduction in perinatal mortality, and a 10% reduction in cesareans that was confined to emergency procedures.

Data Source: A Cochrane review of 18 studies comprising more than 10,000 patients.

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BY MICHELE G.
SULLIVAN

The use of Doppler ultrasound imaging in high-risk pregnancies is associated with a significant 29% reduction in perinatal deaths, significantly fewer labor inductions, and a 10% decrease in the rate of cesarean sections,

a Cochrane database review has concluded.

The mortality benefit is probably directly tied to the reduction in cesareans associated with Doppler imaging. "The evidence from this review suggests that better timing of cesarean sections may be the 'cause' of reduced perinatal mortality," wrote Dr. Zarko

Alfirevic of the University of Liverpool (England) and colleagues.

"The overall decrease in cesarean sections appears to be confined to emergency procedures, which leads us to believe that clinicians with no access to Doppler studies are more often faced with a seriously compromised baby in labor," they said.

This review is the first Cochrane update on the topic since 1996. Unfortunately, many of the 18 studies included in the database review had serious methodological flaws, making it difficult to base any strong clinical recommendations on them. "The quality of the current evidence was not [high]; therefore the results should be interpreted with some caution," they said (Cochrane Database Syst. Rev. 2010;CD007529 [doi:10.1002/14651858.CD007529.pub2]).

The studies, comprising more than 10,000 women, were conducted from 1987 to 2003, many of them before the 2001 Consolidated Standards of Reporting Trials (CONSORT) agreement.

At that time, "most studies simply did not report information on random sequence generation and allocation blinding that is nowadays considered essential for quality assessment," the authors wrote. They felt that only three studies had both adequate sequence generation and concealment allocation, and that blinding was adequate in only two. Nine were considered to be free of selection bias.

In considering all 18 studies, the investigators found Doppler imaging was associated with a significant 29% reduction in perinatal mortality, with a number needed to treat of 203.

When the authors examined the association in the subgroups of singleton and multiple pregnancies, they saw lower, but still significant, positive associations with Doppler imaging.

Doppler was also associated with a significant 10% reduction in the rate of cesarean sections. When cesareans were broken down into elective and emergency, the benefit appeared to be confined to emergency procedures, with a 19% risk reduction.

Doppler also significantly influenced the rate of labor induction, with an 11% decrease compared with no Doppler. There was no benefit in vaginal vs. operative births, intubation, or ventilation.

Four trials compared Doppler imaging to electronic fetal monitoring. Two of the four studies were of good quality, but the analysis in these four studies was not well powered, the authors said.

Overall, the two methods were not significantly different in terms of perinatal mortality, stillbirths, or potentially preventable deaths.

The rate of cesarean sections was slightly, but not significantly, lower with Doppler.

The authors concluded that Doppler should be added to fetal monitoring protocols in high-risk pregnancies, but refrained from making other recommendations. ■



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