

# 5-HT<sub>3</sub> Receptor Antagonists Cut Nausea, Vomiting in C-Section

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — Administering the 5-HT<sub>3</sub> receptor antagonists ondansetron or granisetron to women undergoing cesarean delivery with neuraxial anesthesia significantly reduces intraoperative and postoperative nausea and vomiting, compared with placebo, according to a meta-analysis of nine randomized, double-blind trials.

Intraoperative nausea and vomiting are “emerging in obstetrical anesthesia practice as a major

problem,” Dr. Terrence K. Allen, an anesthesiologist at Duke University, Durham, N.C., noted. “It’s different from the general surgical population because, obviously, those patients are asleep,” he said.

Previous systematic reviews have shown the efficacy of these agents in reducing nausea and vomiting after surgery with general anesthesia. The nine individual studies of 5-HT<sub>3</sub> receptor antagonists in women who were administered neuraxial anesthesia for cesarean delivery produced inconsistent results, so the researchers grouped them in a

meta-analysis, Dr. Allen said in a poster presentation at the annual meeting of the American Society of Anesthesiologists.

The medication was administered intraoperatively following clamping of the umbilical cord or delivery of the baby in eight studies in the meta-analysis, and postoperatively in one study. Dr. Allen and his coinvestigator, Dr. Ashraf S. Habib, combined the data on ondansetron and granisetron and the dose ranges used in the studies because recent consensus guidelines report no evidence of differences in efficacy between these subgroups.

Results showed that the 5-HT<sub>3</sub> receptor antagonists significantly reduced the relative risks for nausea and vomiting, compared with placebo. They reduced the risk for intraoperative nausea by 38%, the risk for intraoperative vomiting by 46%, the risk for postoperative nausea by 49%, and the risk for postoperative vomiting by 49%, he reported.

Nausea and vomiting make surgery and anesthesia a little more unpleasant, Dr. Allen said. The study’s results have affected practice at his institution.

Dr. Allen and Dr. Habib, also of Duke University, have no financial relationships with the companies that make the medications studied. ■

# Prenatal Alcohol Exposure Tied to Conduct Problems

BY MARY ANN MOON  
Contributing Writer

Prenatal alcohol exposure appears to cause later conduct problems in childhood, reported Dr. Brian M. D’Onofrio of Indiana University, Bloomington, and his associates.

In contrast, the later attention and impulsivity problems seen in children who were exposed to alcohol in utero appear to be caused by other factors correlated with maternal drinking rather than to the alcohol exposure itself, the researchers said.

Dr. D’Onofrio and his associates used data from a large longitudinal study of adolescents and young adults to examine the relation between drinking in young women and behavior in their offspring. The survey, funded by the U. S. Bureau of Labor Statistics, covered a racially diverse sample of over 6,000 subjects assessed annually from 1979 through 1994 and then biannually since then (*Arch. Gen. Psychiatry* 2007;64:1296-304).

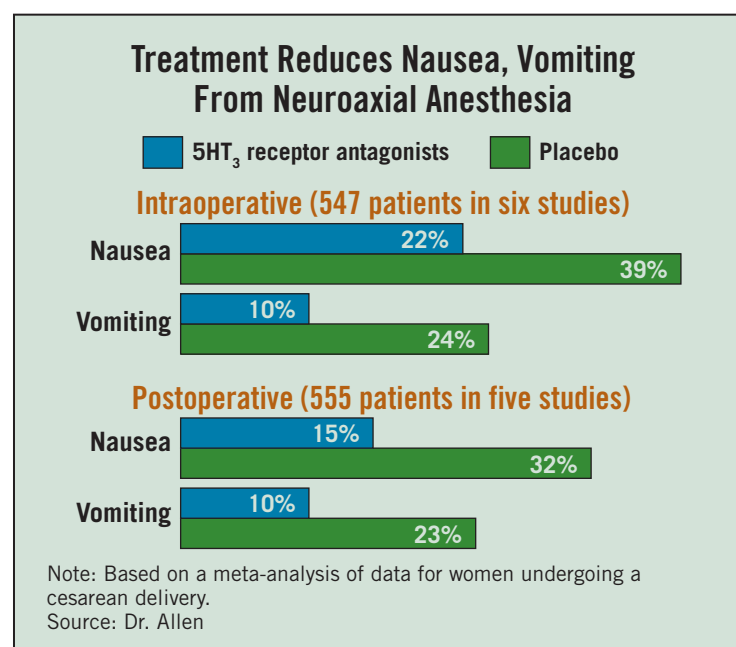
Dr. D’Onofrio and his associates analyzed data on a subsample of 4,912 young female subjects who had at least one child aged 4-11 years by the 2004 assessment. The women had furnished information on their substance use both before they had

become pregnant and during their pregnancies. They then reported on their children’s conduct problems and attention/impulsivity problems using the Behavior Problem Index.

Prenatal exposure strongly correlated with conduct problems, and children with exposure to higher levels of alcohol had more such problems than those exposed to less alcohol. Compared with children who were not exposed to alcohol in utero, those who were exposed to alcohol every day had an increase of 0.35 standard deviations in conduct problems.

This link persisted after the data were adjusted to account for potentially confounding factors such as prenatal exposure to nicotine and other drugs, maternal traits, and genetic and environmental factors. It also persisted in comparisons with siblings and cousins, and in a number of statistical models.

“The results of all models are consistent with a causal association between prenatal alcohol exposure and offspring conduct problems,” the authors said. In contrast, prenatal alcohol exposure did not appear to be causally related to attention/impulsivity problems, although these problems were highly prevalent in exposed children. ■



# Check Pattern Variability First in Fetal Heart Rate Monitoring

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — The first and most important thing to look for in a fetal heart rate pattern is variability, Michael D. Fox, R.N., said at a meeting on antepartum and intrapartum management sponsored by the University of California, San Francisco.

Pattern recognition is the key. Is the heart rate pattern jagged and unpredictable? That’s a sign of moderate variability, which nearly guarantees that the fetus is sufficiently oxygenated. Is the pattern smooth, round, blunted, and flat? That loss of variability, when combined with recurrent heart rate decelerations, flags a baby who may be getting asphyxiated, said Mr. Fox, director of the perinatal resource group at the university.

The conventional method of assessing fetal heart rate-monitoring strips starts with drawing an arbitrary line that the clinician designates as the baseline heart rate, so that everything above it is considered accelerations and everything below it is thought to be decelerations. “I would argue that [the conventional method] is fraught with peril” because it employs the wrong interpretive construct and the wrong cues, he said.

Clinicians get into trouble by focusing too much on various methods to measure the height of the variability complexes on the fetal heart rate-monitoring strip. “It’s not just the height of the variability complexes that are important, but the way they look,” he added.

A jagged and unpredictable pattern on the heart rate-monitoring strip is good: It’s a visual representation of an intact neurologic pathway in the fetus. A progressively smooth, round, blunted and flat pattern is bad: This is a pattern that every baby who dies of asphyxia develops, even if the height of the heart rate oscillations meets previous definitions for moderate variability. A common mistake is to consider smooth, round, blunted oscillations to be moderate variability if they have enough height in the pattern.

Because heart rate accelerations usually occur in association with moderate variability, they are typically jagged and unpredictable in both appearance and timing. Rarely are accelerations regular, rhythmic, or occurring with each contraction.

Recurrent decelerations that get deeper and deeper as labor progresses are no cause for immediate delivery, so long as moderate variability remains present. “These are tracings that we traditionally called nonre-

assuring,” yet 98% of fetuses with this pattern will be free of asphyxia and 99% will have no morbidities, he noted.

That doesn’t mean clinicians needn’t be alert. If you see recurrent decelerations in the presence of moderate variability, then be sure a physician or nurse-midwife is managing the patient at the bedside, prepare the patient for delivery, and notify the rest of the obstetric and neonatal team. “Once you have the capacity to rescue this fetus, these are tracings that can continue to be observed,” he said.

The timing of decelerations in relation

to uterine activity may tell the clinician something about the underlying physiology “but it does not tell you what to do in most circumstances,” Mr. Fox added. “Variability always trumps timing.”

He teaches a four-step process of evaluating a fetal heart rate strip. First, ask if variability is absent, minimal, moderate, or marked. Second, look for decelerations. Third, consider the baseline fetal heart rate. Finally, sum up the evolution of the tracing. Babies with asphyxia don’t regain variability; they continue to lose it over time in association with deeper decelerations. ■

## Video Teaches Pattern Recognition

A free video that teaches recognition of variability and other signs of fetal health on heart rate-monitoring tracings is available to clinicians who “commit to interdisciplinary education”—meaning it will be used to train doctors, nurses, midwives, and anyone else involved in monitoring fetal heart rates, Mr. Fox said.

Funded by Kaiser Permanente, the video “Situational Awareness in Fetal Heart Rate Monitoring” features four

27-minute segments with cases and tracings presented by Mr. Fox, Dr. Julian (“Bill”) Parer, professor of obstetrics, gynecology, and reproductive sciences at the University of California, San Francisco, and other faculty members.

A small shipping and handling fee is charged for each order. Mr. Fox is the distributor. To request a copy, contact him at [perinatal@consultant.com](mailto:perinatal@consultant.com) or (510) 527-5127.