Nitrous Oxide Underused in U.S. for Labor Pain

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San Francisco — A simple technique to help manage labor pain is used commonly in the United Kingdom, Scandinavia, and Canada, but is offered to few U.S. women—nitrous oxide, or so-called "laughing gas."

Administered as a 50/50 blend of oxygen and nitrous oxide, the gas has proved safe for mothers, their babies, and health care personnel in the vicinity of use, Judith T. Bishop said at a meeting on antepartum and intrapartum management sponsored by the University of California, San Francisco.

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It's relatively weak as an analgesic, yet useful. One woman who delivered at the university described how it felt to use nitrous oxide during labor by saying, "It still hurts, but I don't care," recalled Ms. Bishop, a certified nurse-midwife and professor of ob.gyn. and reproductive sciences at the university.

"I've heard that more than once. It's not too dissimilar from some reports from women who are using nonpharmacologic methods," she noted. "They may have rated their pain somewhat highly, but their satisfaction and their ability to cope was improved."

Her institution has large holding tanks of oxygen and nitrous oxide that get piped into every labor and delivery room. Three cables control the flow—one for each gas, and one to scavenge the gas from the environment and remove it from the room.

The mother controls the application of the gas. She's given a mask and some instructions on its use by the anesthesiologist, midwife, or obstetrician, with ongoing supervision by a nurse. The full effect of nitrous oxide can be felt in 50 seconds.

Because it's simple and fast to start or stop, nitrous oxide is particularly useful through the second stage of labor for multiparous women who arrive in time to deliver but too late to get an epidural, she said. Nitrous oxide also can be used during perineal repair of women who didn't get an epidural.

Very few U.S. medical centers offer nitrous oxide during labor, for reasons that are unclear. "Many, many places are asking us for information about nitrous oxide. We have a protocol for nurses and certified nurse-midwives to administer" nitrous oxide, Ms. Bishop said. The University of Washington is the only other medical center that she knows of that offers nitrous oxide for labor pain.

Dr. Mark A. Rosen, director of obstetric anesthesia at the university and author of a review of nitrous oxide during labor, said in an interview that he has taken informal polls while lecturing at other institutions and conferences. When he asks how many physicians have nitrous oxide available during deliveries at their hospitals, he said, very few raise their hands.

His systematic review of 11 randomized controlled trials of nitrous oxide for labor pain reported that more than half of laboring women in the United Kingdom and Finland use nitrous oxide, which is widely employed and considered safe in Canada, Australia, New Zealand, and many other parts of the world when supervised by physicians, nurses, or midwives (Am. J. Obstet. Gynecol. 2002;186:S110-26).

He also assessed eight controlled trials and eight observational studies for potential adverse outcomes and performed a nonsystematic review of studies on occupational exposure. Potential side effects

FDA Has Consumer Health Web Page

The U.S. Food and Drug Administration has launched a Web page, Consumer Health Information for You and Your Family (www.fda.gov/consumer), and a related e-newsletter, FDA Consumer Health Information (www.fda.gov/consumer/consumerenews.html). The Web page provides links to information about the various products that FDA regulates, including food, human and animal drugs, medical devices, and vaccines. The e-newsletter replaces the agency's print magazine. ■

from nitrous oxide include maternal nausea, vomiting, or poor recall of labor, but it does not seem to affect the fetus, as seen with narcotics.

"Nitrous oxide is not a potent labor analgesic, but it is safe for parturient women, their newborns, and health care workers in attendance during its administration. It appears to provide adequately effective analgesia for many women," he concluded.

An estimated 6% of U.S. women in labor used nitrous oxide in the decade leading up to 1986, but by the 1990s the use of nitrous oxide in labor had nearly disappeared in the United States, his report noted. "I really don't understand why this simple but weakly effective analgesic doesn't have more use in the United States," Dr. Rosen said.

Ms. Bishop suggested that habit and tradition have more to do with its use than science. "We develop our own routines within practices, institutions, and countries. It is really not in most cases about what's 'right' or 'best,' just what the decision-makers decide," she said.

Before she and Dr. Rosen arrived at the university, the director of obstetric anesthesia was an Englishman.

"I imagine he had good experience with nitrous oxide and was comfortable with it," she speculated. Dr. Rosen trained under his predecessor and also spent some time in England.

A midwife colleague at the University of Michigan told Ms. Bishop that use of nitrous oxide for labor started in Michigan in 1978 when a British physician became chair of obstetric anesthesia. "Its use became quite popular," but the chair's successor in 1995 removed it as an option, she said.

"We tend in the United States to go with the higher-tech approach to health care—doctors, not midwives, and epidurals, not nitrous oxide—dropping off lower-tech options even though they may still serve a purpose," Ms. Bishop noted.

Market forces also may play a role in the demise of U.S. use of nitrous oxide for labor, midwife and epidemiologist Judith Rooks suggested in a recent editorial (Birth 2007;34:3-5). "Obstetric use of nitrous oxide in America is similar to that of any older, inexpensive, off-patent, unglamorous, safe and reasonably effective but not highly potent drug. Nitrous oxide is like an 'orphan' drug—little known outside of dentistry, lacking elan and pizzazz, with no companies or influential professional groups that stand to profit by its greater use," she wrote.

"There is no 'nitrous lobby,' " Ms. Bishop added. ■