

News

The University of Texas Health Science Center at Dallas
5323 Harry Hines Boulevard Dallas, Texas 75235 (214)688-3404

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CONTACT: Tommy Joy Bosler
Office: 214/688-3404
Home: 214/688-1773

****Nitrous oxide in emergency medical care to be debated at ASA convention

(Editors Note: The use of nitrous oxide to relieve pain in emergency medical situations will be a controversial topic at The American Society of Anesthesiologists' convention in San Francisco October 12-16. It is a practice endorsed by the American College of Emergency Physicians but opposed by some anesthesiologists. Dr. A.H. Giesecke, chairman of the Southwestern Medical School's Department of Anesthesiology and director of anesthesiology at Parkland Memorial Hospital in Dallas, is an advocate of the use of nitrous oxide on both humanitarian and medical bases.)

DALLAS--An accident victim being rushed to the hospital by ambulance is likely to be suffering pain. Today he may also be the one who administers the analgesia to relieve that pain on the way to the emergency room.

"For the past six years, we have found that allowing a patient to inhale a 50-50 mixture of nitrous oxide and oxygen through a mask he holds over his mouth and nose provides relief from pain in most cases, and does it safely," says Dr. Adolph Giesecke, chairman of the Department of Anesthesiology at The University of Texas Health Science Center at Dallas.

Self-administration of a nitrous oxide/oxygen mixture to relieve pain in the field (out of the hospital) is used by Emergency Medical Services in major cities across the United States. Its use was endorsed by the American College of Emergency Physicians in 1984. But now the practice is being challenged by some anesthesiologists through a resolution to be considered by the American Society of Anesthesiologists at its mid-October convention.

"From the humanitarian point of view, it has always been desirable to relieve the patient's pain. But from the medical point of view it was difficult to find an analgesic that would be quick enough and safe enough to use during a brief ambulance ride," says Giesecke, who is also director of anesthesiology at Parkland Memorial Hospital, the main trauma center for Dallas County.

Ideally, a pain reliever used in emergency situations needs to take effect quickly, and the effect needs to dissipate just as quickly so that it doesn't mask the patient's symptoms when he arrives at the hospital. It shouldn't affect the patient's blood pressure or heart rate unduly, and it shouldn't render the patient unconscious. In addition, it should work in a variety of medical emergencies, and have a fail-safe delivery system.

"In the case of the nitrous oxide/oxygen mixture used by most EMS systems, the 'fail-safe' mechanism is self-administration by the patient," says Giesecke. "If the patient inhales enough to become drowsy, his grip on the mask loosens, air seeps in around the edge and the negative pressure that activates the flow of the gas is broken."

The 50-50 mixture of nitrous oxide and oxygen has been used for emergency pain relief in the field since 1969 in Britain and since 1975 in the United States. However, it has been used even longer in hospital labor and delivery rooms. And nitrous oxide/oxygen has been used for dental work since about 1860, fostering a host of laughing-gas jokes.

Clinical trials by emergency medicine services have found that self-administered nitrous oxide/oxygen, supervised by paramedics in situations authorized by the EMS base physician, is safe and 90 percent effective in a number of situations. It works

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well for muscle or bone injuries, labor and delivery, burns, fractures, acute urinary retention, kidney stones, and chest pain secondary to angina or heart attack. In many instances, its ability to relieve anxiety is as important as its ability to block pain.

The only negative side effects noted were nausea or vomiting in fewer than five percent of cases.

There are a some situations in which nitrous oxide/oxygen should not be used, and paramedics and their supervisors look out for these: head, chest or abdominal injuries, facial and jaw injuries, the presence of excessive alcohol or other mood-altering drugs, chronic lung disease or high blood pressure.

The American Society of Anesthesiologist will consider a resolution opposing the use of nitrous oxide in emergencies at its annual convention later this month. "I am concerned that there is a move afoot among anesthesiologists to try to block the use of this very effective pain reliever by emergency technicians in the field," said Giesecke.

The ASA expresses concern about its use in situations where it could prove harmful, about equipment failure and about the fact that its use can cause unconsciousness when inhaled over periods of time up to two hours. The association's statement declares that the administration of nitrous oxide/oxygen is clearly the practice of anesthesia.

"I am against the proposed resolution," says Giesecke. "They are citing cases where the drug has been misused. The modern large-city EMS has safeguards against misuse. Furthermore, the short time involved in transporting patients to the hospital and the fact that it is self-administered keeps the 50-50 mixture in the class of analgesic rather than anesthetic.

" We are not trying to render the patient unconscious, only ease his pain," concludes Giesecke. "I hope to persuade a sufficient number of my fellow anesthesiologists to the same point of view."

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Note: Dr. Giesecke will stay at the Meridien Hotel in San Francisco during the convention.

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