

## ■ CORRESPONDENCE

Anesthesiology  
1996; 84:236  
© 1996 American Society of Anesthesiologists, Inc.  
Lippincott-Raven Publishers

### Pancreatitis after Propofol Administration: Is There a Relationship?

*To the Editor:*—In the past 8 months at the hospital where I practice anesthesia, pancreatitis has developed in four patients after surgery. None of these cases involved abdominal surgery. In two of the patients, who were relatively healthy and nonalcoholic, aged 58 and 77 yr, respectively, respiratory distress syndrome developed after the onset of pancreatitis, and the patients died. The other two patients experienced several weeks of abdominal discomfort—nausea and vomiting, were diagnosed as having pancreatitis, and subsequently recovered.

This Correspondence and its reply are accompanied by a Case Report. Please see: Leisure GS, O'Flaherty J, Green L, Jones DR: Propofol and postoperative pancreatitis. *ANESTHESIOLOGY* 1996; 84:224-7.

These patients had in common induction of anesthesia with propofol followed by intravenous succinylcholine before tracheal intubation and desflurane for maintenance of anesthesia. I am not suggesting that these cases of pancreatitis were caused by any single drug or combination of drugs. However, I believe that anesthesiologists should be aware of these case reports, and should they treat any cases of pancreatitis, should report them to the Food and Drug Administration.

**Thomas W. Wingfield, M.D.**  
President  
Gaston Anesthesia Associates, P.A.  
P.O. Box 12845  
Gastonia, North Carolina 28052

(Accepted for publication August 17, 1995.)

Anesthesiology  
1996; 84:236-7  
© 1996 American Society of Anesthesiologists, Inc.  
Lippincott-Raven Publishers

*In Reply:*—Zeneca has evaluated all cases of pancreatitis reported in temporal association with the administration of Diprivan. As a result of this evaluation and a review of the scientific relationship between lipids and acute pancreatitis, we do not believe a causal relationship between Diprivan and the occurrence of acute pancreatitis is likely.

Although Wingfield mentions four cases of pancreatitis, he reported to Zeneca three cases of postoperative pancreatitis and indicated in his letter to *ANESTHESIOLOGY* that the Food and Drug Administration (FDA) had "several reports" of acute pancreatitis associated with Diprivan. In discussion with the FDA, we determined that the total number of spontaneous reports of pancreatitis is eight. Three cases were from the intensive care unit, and five were postoperative. The cases from the intensive care unit were found to have contributory medical histories of biliary stones or alcohol abuse, two of the most common causes of pancreatitis. Of the five reports of postoperative pancreatitis, three were from Wingfield, and the others were from different sources. The estimated exposure to Diprivan is approximately 40 million anesthesia patients in the United States.

We were afforded the opportunity to visit Gastonia Hospital on April 6, 1995. Physicians from Zeneca reviewed the charts and records of the patients reported by Wingfield. We found that the patient undergoing hip replacement had a history of bilateral pedal edema, anemia, and increased triglycerides and underwent a 4-h procedure with 1,300 ml of blood loss and hemodynamic instability and, postoperatively, oliguric renal failure, metabolic acidosis, and renal di-

alysis within the first 24 h. The other patient, aged 77 yr, had an unresolved upper respiratory infection for 1 month before surgery and underwent a 45-min anesthetic procedure with lumpectomy and axillary node dissection. Both patients denied a history of alcohol use.

A feature common to all of these postoperative pancreatitis cases is that Diprivan was used only for induction of anesthesia and not maintenance of anesthesia. In 3,324 anesthesia patients in our clinical trial database, up to 9,900 mg Diprivan was administered to a single patient, and no cases of pancreatitis were reported. Long-term maintenance of anesthesia, with much higher lipid dosages, has not been associated with the development of pancreatitis in our clinical trial database or in the more than 5,000 Diprivan articles in the literature. Thus, acute postoperative pancreatitis seen after Diprivan induction dosages of 100-150 mg seems unlikely to be causally related to Diprivan.

The relationship between acute pancreatitis and lipid administration has been shown to be dose-dependent, requiring the occurrence of high lipid plasma levels exceeding 30 mmol/l<sup>1</sup> or 1,000-2,000 mg/dl.<sup>2,3</sup> These plasma concentrations of triglycerides were not achieved after a single bolus injection of Diprivan (3.1 mg/kg), when triglyceride concentrations changed from a baseline of 1.2 to 1.5 mmol/l 5 min after injection.<sup>4</sup>

These data lead us to conclude that a causal relationship between Diprivan and the reported cases of postoperative pancreatitis after bolus induction dosages is unlikely. Pancreatitis is not commonly