High Altitude and Intravenous Lidocaine

To the Editor:—In the May 1979 issue, Poulton and James concluded that the intravenous injection of lidocaine decreased cough reflexes in a group of subjects. This information can be useful when an inhalational anesthetic is given with spontaneous ventilation by mask at high altitude.

In Albuquerque, the mean elevation is 5300 feet and the corresponding barometric pressure averages 635 torr. Therefore, a mask induction with nitrous oxide and a volatile agent may be relatively difficult. When 70 per cent nitrous oxide is used, the inspired partial pressure is reduced from approximately 530 torr (at sea level) to 445 torr.

Even after 2–4 mg/kg thiopental, the average mask induction with either nitrous oxide and oxygen or nitrous oxide, oxygen, and enflurane is accompanied by a higher incidence of coughing and bucking in patients than I have observed at sea level. The incidence of coughing on induction is even higher in patients with ventilation-perfusion abnormalities. Fortunately, these problems have been eliminated by the use of intravenously administered lidocaine during a mask induction of anesthesia with spontaneous ventilation.

In their study, Poulton and James used 1.5 mg/kg lidocaine and had satisfactory results. In 1958, Steinhaus and Howland used approximately 4 mg/kg lidocaine over a 4–5 minute period to facilitate anesthetic induction. They saw no electroencephalographic evidence of seizure activity when the lidocaine was given in the presence of a barbiturate.

I have success (lack of coughing during mask induction) in using 0.5–0.75 mg/kg lidocaine after a 2 mg/kg dose of thiopental. These drugs are used to supplement 70 per cent nitrous oxide and enflurane. The low dose of thiopental is used so as not to interfere with the patient's spontaneous respiration.

Steinhau recommended intravenous administration of lidocaine for ear, nose, throat, and endoscopic procedures. I would also use it for patients with ventilation-perfusion abnormalities, and for patients who are having oculovascular procedures. The advantage of intravenously administered lidocaine as a supplement to general anesthesia is that it can be used not only to ease induction, but also in all procedures where it is imperative that bucking and coughing be avoided.

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References

Clinical Implications of Effects of Thoracic Epidural Anesthesia on Endocardial/Epicardial Flow Distribution Ratio Are Not Justified

To the Editor:—Klassen et al. have provided the readers of the Journal with a beautiful pharmacologic and physiologic study of the effect of sympathectomy by means of continuous epidural anesthesia on one aspect of the control of coronary circulation. However, their conclusions, especially as regards the clinical care of patients with ischemic heart disease, are not justified from the results obtained in this highly artificial model. In their introduction they state:

The purpose of our investigation was to examine the effect of reversible sympathectomy induced by epidural cervical anesthesia on myocardial blood flow distribution during myocardial