The pattern of circulatory effects of Forane suggests beta-adrenergic stimulating properties. Increased heart rate and dilatation of muscle vessels are compatible with beta stimulation.[9] Most anesthetics are direct myocardial depressants, as indicated by their effect on the isolated heart.[10] We expected Forane would have a similar effect. Despite this, we found maintenance of cardiac output and contractility (as indicated by I-J wave, pre-ejection period or rate of ventricular ejection) even at deep levels of anesthesia, with little or no elevation of right atrial pressure. In part, these may be reflex responses to lowered mean arterial pressure and concomitant increased venous compliance but, in part, the responses may also reflect beta-stimulating properties of Forane.

Concomitant administration of Forane and nitrous oxide, an agent with weak alpha-adrenergic stimulating properties,[11] would be expected to attenuate the decrease in total peripheral resistance seen with Forane alone. Current studies of volunteers in which the cardiovascular effects of the Forane–nitrous oxide combination are being measured indicate that this is true. Higher arterial pressure is maintained because the decrease in peripheral resistance is less with the combination than with Forane alone at equipotent anesthetic levels. In initial clinical studies we have also found notable increases in arterial pressure with surgical incision. Whether the response is due primarily to the influence of attendant sympathetic stimulation on peripheral resistance or to cardiac output, or to both, is not known.

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Drugs

METHOXYFLURANE TOXICITY Inorganic fluoride and nonvolatile organic fluoride were measured in a patient who had nephrotoxic effects thought to be due to methoxyflurane anesthesia. Concentrations of both fluorides were markedly elevated compared with concentrations in two patients who received methoxyflurane but did not develop nephrotoxic changes. Indirect evidence suggests that the inorganic fluoride concentration was sufficient to account for the nephrotoxic effects. The prolonged elevation of inorganic fluoride observed can be explained on the basis of the breakdown of the nonvolatile organic fluoride to inorganic fluoride and the poor renal clearance of both types. (*Taves, D. R., and others: Toxicity Following Methoxyflurane Anesthesia. II. Fluoride Concentrations in Nephrotoxicity, J.A.M.A. 214: 91 (Oct.) 1970.*)