

popular opinion, but should not be surprising. The "work-reduction" approach to treatment of myocardial infarction has received increasing support. Recently much information consistent with this study has been dispersed concerning the effects of blood pressure, heart rate, and anesthetic agents on myocardial oxygen demands. To be surprised is to overlook the tremendous clinical success halothane has enjoyed in clinical situations characterized by myocardial ischemia.

As with most good research, more questions are raised than answered by the work of Bland and Lowenstein, and the dangers of overinterpretation are real. Many other investigators are now engaged in pursuit of further information in this and closely related fields, and soon will provide further clarification. In the meantime, those of us who like the present results must recall that this study was done in dogs with acute localized disease imposed upon chloralose-urethane anesthesia. It may be a giant step to man with chronic diffuse coronary-artery disease without this baseline anesthetic. Other anesthetic approaches may produce similar or even better results. Attention must also be directed to emergence from anesthesia and to the early postoperative hours, when pain and discomfort may increase myo-

cardial oxygen demands without the protective effect of the anesthetic. This period may be the real stress of an anesthetic experience and certainly needs early investigation. The matter of cardiac volume, and related effects on myocardial wall tension, is raised by the authors. Doses of halothane higher than those used by them have been shown to increase end-diastolic volume. The concentration of anesthetic will also be important in determining the severity of hypotension and the level of bradycardia. Non-critical interpretation of the results of this study might well lead to undesirable conclusions.

It is, of course, now *perfectly obvious* that the proper way to anesthetize patients with ischemic heart disease is to "reduce the determinants of myocardial oxygen demand. It is so obvious as to be true. This new admonition will undoubtedly achieve the same sanctity and respect as the warning to "avoid hypotension, give plenty of oxygen, and avoid myocardial depressants. . . ."

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Drug Abuse

HALOTHANE ABUSE IN HOSPITAL EMPLOYEES Access to centrally acting drugs is a significant problem in the hospital environment. Obvious areas of concern are narcotic-analgesics, barbiturates, and tranquilizers. Less obvious is the fact that the volatile inhalation anesthetics represent an easily concealed and transported substance with both major abuse liability and potential for inducing rapid death. The authors report deaths of three hospital employees (two operating room technicians and one emergency room technician) as a result of halothane inhalation.

One breathed halothane vaporized through gauze. Two rebreathed halothane by the use of either a plastic bag over the head or a "tent-like arrangement of a sheet and pillows." A number of friends of these individuals reported attending parties where halothane "had been passed around for group inhalation." Access to such drugs should be controlled carefully, and education of those likely to misuse these substances is extremely important. (Spencer JD, Raasch FO, Trefny FA: Halothane abuse in hospital personnel. JAMA 235: 1034-1035, 1976.)

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