Literature Briefs

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Literature Briefs were submitted by Drs. L. Bachman, R. Clark, R. Dunbar, M. Gold, A. Sessler, and W. Stevens. Briefs appearing elsewhere in this issue are part of this column.

Anesthesia

AUTONOMIC BLOCK The relative influences of the sympathetic and parasympathetic nervous systems on the resting heart rate were studied in 12 young healthy male patients. Total sympathetic blockade by spinal anesthesia to a C8–T1 sensory level caused a 10 per cent decrease in heart rate and a 20 per cent decrease in mean arterial pressure. Atropine (0.04 mg/kg), given intravenously after the spinal anesthesia had been well established, caused the heart rate to increase 40 per cent and the blood pressure to increase 5 per cent above the prespinal values. These data indicate that both autonomic components influence the resting heart rate, with the parasympathetic influences predominating. (*O'Rourke, G. W., and Greene, N. M.: Autonomic Blockade and the Resting Heart Rate in Man, Amer. Heart J. 80: 469 (Oct.) 1970.*)

CELL PROTECTION BY ANESTHESIA Light anesthesia for 24 hours with either halothane or nitrous oxide significantly reduced the destruction of normal murine hematopoietic stem cells by arabinosyl cytosine, as judged by results using the spleen colony-forming unit assay. Neither anesthetic affected the extent of reduction of lymphoma colony-forming units by ara-C. Halothane, in combination with vinblastine, similarly protected normal hematopoietic cells but not lymphoma cells. Halothane alone had no significant effect on either normal or lymphoma colony-forming cells, whereas nitrous oxide by itself reduced lymphoma colony-forming cells to 9 per cent of the number found in control mice. Since protection of normal cells was seen with combinations of different anesthetics and different phase-specific chemotherapeutic agents, these results may indicate a general phenomenon whereby anesthetics decrease the selectivity of cytotoxic drugs by protecting normal cells against them. (*Bruce, D. L., Lin, H. S., and Bruce, W. R.: Reduction of Colony Forming Cell Sensitivity to Arabinosyl Cytosine by Halothane Anesthesia, Cancer Res. 30: 1803 (June) 1970.*)

Circulation

INTRAVENOUS GLUCAGON IN MAN The central and peripheral vascular hemodynamic effects of 2 or 5 mg intravenous glucagon were studied in 29 patients who were either in the acute phase of myocardial infarction or had chronic rheumatic heart disease. The inotropic action of the drug was evident from an increase in cardiac output secondary to an increase in heart rate and stroke volume. Pulmonary arterial pressure and vascular resistance fell. Systemic vascular resistance fell a mean of 19 per cent from control values, while mean arterial pressure rose an average of 8 per cent. The authors postulate that the systemic effect is mediated via a central action of the drug. The hemodynamic effects were rapid in onset, reached a peak in the first 10 minutes, and dissipated within 30 minutes of injection. Glucagon had a prominent inotropic effect in the presence of myocardial infarction (cardiac output rose 42 per cent) but was less predictable in patients in whom output was limited by chronic rheumatic heart disease (mitral stenosis and aortic insufficiency). Occasionally, glucagon produced undesirable increases in left atrial pressure in patients with mitral stenosis. Blood sugar levels rarely exceeded