

# Literature Briefs

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Briefs were submitted by Drs. Peter P. Bosomworth, M. T. Clarke, H. S. Davis, Deryck Duncalf, Martin Helrich, G. Hohmann, J. J. Jacoby, F. C. McPartland, S. J. Martin, S. R. Oech, R. E. Ponath, Alan D. Randall, Wallace Ring, H. S. Rottenstein, and P. H. Sechzer. Briefs appearing elsewhere in this issue are a part of this column.

**REFLEX HYPOTENSION** In 38 patients circulatory parameters were monitored before anesthesia, after ether anesthesia and following a standard peritoneal stimulation during ether anesthesia. The production of hypotension by this method was unpredictable and occurred in only eight of the 38 patients. Analysis of the data of these eight patients indicated the drop in blood pressure was predominantly systolic and due primarily to a marked fall in stroke volume (–24 per cent) and cardiac output (–35 per cent), with an inconsistent decline in pulse rate (–15 per cent). The slight drop in total peripheral resistance (–8 per cent) was not statistically significant. Cause of the reduced stroke volume is not clear but may be the result of a reflex originating in pressure sensitive receptors in the abdomen and mediated through inhibition of the sympathetic outflow or, less frequently, augmentation of the parasympathetic. A negative inotropic cardiac effect is thus largely responsible for the hypotension although selective peripheral vasodilatation cannot be discarded as a contributing factor. (Vandam, L. D., Schweitzer, H. J., and Kubota, Y.: *Circulatory Response to Intra-Abdominal Manipulation During Ether Anesthesia in Man*, *Circulat. Res.* 11: 287 (Aug.) 1962.)

**MYOCARDIAL ION EXCHANGE** Arteriovenous potassium differences were measured by flame photometry of serial blood samples from the femoral artery and coronary sinus in vagotomized dogs. The effect of strophanthidin, epinephrine, methoxamine,

mephentermine and potassium chloride infusions on myocardial ion exchange was determined. Strophanthidin produced a net loss of potassium ions from the myocardium which was associated with ventricular arrhythmias. The other agents, with the exception of mephentermine, produced a net myocardial gain in potassium ions and reversed strophanthidin-induced ventricular arrhythmias. Mephentermine showed the unique property of not causing an uptake of potassium ions when given alone, yet preventing the potassium ion loss of strophanthidin with resultant reversal of ventricular arrhythmias. Associated hemodynamic changes had no significant effect on ion exchanges. The evidence indicates that catechol amines prevent potassium ion egress from the heart and thereby antagonize the toxic effects of strophanthidin. (Regan, T. J., and others: *Sympathomimetics as Antagonists of Strophanthidin's Tonic and Arrhythmic Effects*, *Circulat. Res.* 11: 17 (July) 1962.)

**SODIUM AND ARTERIAL BED** Tension of dog femoral artery segments *in vitro* is directly related to sodium concentration. In arterial segments mounted in a bath whose sodium ion concentration was monitored, increase in intraluminal pressure caused by norepinephrine, angiotensin and pitressin was associated with a fall of sodium ion in the bath and therefore an uptake by the vessel wall. Reversing this sodium shift resulted in relaxation. (Friedman, S. M., and Allardyce, D. B.: *Sodium and Tension in an Artery Segment*, *Circulat. Res.* 11: 84 (July) 1962.)

**CARDIAC MASSAGE TRAUMA** Closed-chest cardiac massage is not without complications. In two cases ruptured liver and fracture of the rib in children occurred. These injuries can be prevented by proper application of pressures to the sternum. This is particularly important in infants and small children, especially when the size of the chest is small