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Drugs

LOCAL ANESTHETICS Cinchocaine, amethocaine, cocaine and procaine block the calcium-evoked release of catecholamines from the adrenal medulla. The block is dose-dependent and parallels the anesthetic potency of these agents. This effect on the cell membrane of the chromaffin cells is analogous to the effect of these local anesthetic agents on the cell membrane of peripheral nerves; that is, blocking the influx of potassium in one instance and calcium in the other. This block can be overcome with high concentrations of calcium. These agents also block acetylcholine-evoked release of catecholamines from the adrenal medulla. This response, however, is not dose-dependent, and cannot be reversed with high concentrations of calcium, and the dose necessary for blockade does not correlate with the anesthetic potency of the agents. These agents are structurally similar to acetylcholine and may act in this instance by competitive inhibition. (*Jaanus, S. D., Miele, E., and Rubin, R. P.: Analysis of the Inhibitory Effect of Local Anesthetics and Propranolol on Adrenomedullary Secretion Evoked by Calcium or Acetylcholine, Brit. J. Pharmacol.* 31: 319 (Oct.) 1967.)

EPINEPHRINE AND ADRENERGIC BLOCKADE Effects of a three-hour epinephrine infusion were studied in three groups of sheep which were either untreated, premedicated with an alpha-adrenergic blocking agent (phenoxybenzamine), or premedicated with both alpha- and beta-adrenergic blockers (phenoxybenzamine + propranolol). In untreated sheep, the immediate effects of epinephrine infusion were similar to those observed in other species, whereas in phenoxybenzamine-pre-treated animals responses were those of beta-adrenergic stimulation. In animals pre-treated with both alpha and beta blockers, immediate responses to epinephrine was virtually absent. Twenty-four hours later, untreated and phenoxybenzamine-treated animals were hypotensive, but there was no evidence of diminished blood or plasma volumes or myocardial failure. Sheep treated with both alpha and beta blocking drugs had delayed severe hypotension and died unless given adrenal cortical steroids during the night. (*Halmagyi, D. F. J., and others: Effect of Adrenergic Blockade on Consequences of Sustained Epinephrine Infusion, J. Appl. Physiol.* 23: 171 (Aug.) 1967.)