

in *Human and Canine Plasma*, *J. Lab. & Clin. Med.* 50: 769 (Nov.) 1957.)

CATECHOLAMINE METABOLISM

Epinephrine, norepinephrine and 3-Hydroxytryptamine were injected intraperitoneally in rats. Chromatographic examination of a 24-hour urine specimen showed that oxymethylation of the phenolic hydroxide (occupying the meta-position of the catechol nucleus with respect to the side chain) had occurred. In addition, a major portion was conjugated with glucuronic acid. Iproniazid increased the percentage of conjugated catecholamine at the expense of the free oxymethylated metabolite. These observations indicate that oxy-methylation of catechol amines occurs prior to oxidative deamination and that this pathway is a principle route of epinephrine and norepinephrine metabolism. Successive replacement of phenolic hydroxyl groups of sympathomimetic amines is known to shift pharmacologic activity from the peripheral to the central nervous system with concomitant loss of pressor action. Many of the physiological actions of epinephrine and norepinephrine may conceivably be mediated through oxy-methylated metabolites. (Axelrod, J., Senoh, S., and Witkop, B.: *O-methylation of Catecholamines in Vivo*, *J. Biol. Chem.* 233: 697 (Sept.) 1958.)

CATECHOLAMINES The properties are described of an enzyme that can carry out O-methylation of catecholamines by transferring the methyl group of S-adrenosylmethionine to the hydroxyl group in the metaposition of epinephrine and other catechols. The enzyme is in the soluble fraction of liver and other organs. It requires a divalent cation and is inhibited by sulfhydryl binding reagents. (Axelrod, J., and Tomchick, R.: *Enzymatic O-methylation of Epinephrine and Other Catechols*, *J. Biol. Chem.* 233: 702 (Sept.) 1958.)

NOREPINEPHRINE A patient with bulbar paralysis of undetermined etiology required continuous intravenous infusions of norepinephrine in concentrations of 8 to 32 ampules per liter to produce and maintain a systolic blood pressure of 100 mm. of mercury. In spite of the high dosage required for two weeks, the patient eventually made a full re-

covery without renal complications or gangrene of the extremities. (Russell, K. P.: *Selected Obstetrical Conferences from the Los Angeles County Hospital*, *West. J. Surg.* 66: 240 (July-Aug.) 1958.)

ETHER Administration of diethyl ether to patients for operation resulted in a marked increase in the plasma concentration of a substance resembling noradrenalin. The concentration of adrenalin was only slightly increased. Since bilateral adrenalectomy did not cause the elevated plasma concentration of noradrenaline to return to normal, the increased quantities of circulating noradrenalin likely do not originate in the adrenal medulla. (Price, H. L.: *Circulating Adrenaline and Noradrenaline During Diethyl Ether Anesthesia in Man*, *Clinical Science* 16: 377 (May) 1957.)

ALDOSTERONE Normal man is capable of oxygenating corticosterone to aldosterone. Further study is needed to establish whether or not this conversion occurs within the adrenal cortex. (Seltzer, H. S., and Clark, D. A.: *Evidence for Conversion of Corticosterone to Aldosterone in Man*, *Proc. Soc. Exper. Biol. & Med.* 98: 674 (July) 1958.)

ADRENAL HORMONES The cardiac effects, both functional and morphologic, of adrenal hormones were studied in thirty heart-lung preparations. Measurements were made of cardiac output, outflow pressure and the electrocardiogram. In the control series, cardiac work, output, and rate fell slightly and gradually in the course of the 70-minute experiments. No macroscopic or microscopic alterations were observed in the postmortem examination of these hearts. The infusion of epinephrine or norepinephrine resulted in a marked rise in cardiac work and rate which dropped below their control values after cessation of the infusion. Hydrocortisone alone did not cause any significant alteration in function. However, all the hearts receiving one of the adrenal hormones presented extensive lesions of the myocardium, valves, and coronary vessels. The lesions were more severe in the hearts in which both adrenal hormones were used. (Nahas, G. G., and others: *Functional and Morphologic Changes in Heart-Lung*