

RETICULOCYTE MATURATION Erythropoiesis in normal man was studied during periods of phlebotomy-induced anemia of differing severity. Such a study permitted a comparison of marrow-production measurements over a wide range of marrow-production levels. As long as the serum iron remained above 50 $\mu\text{g}/100$ ml, measurements of plasma iron turnover provided a good index of marrow production at all levels of erythrocyte manufacture. Contrastingly, absolute reticulocyte count correlated poorly with other measurements. This was the result of the prolongation of the time required for circulating reticulocytes to lose reticulum, which correlated with the severity of the anemia. For clinical application of the reticulocyte count as a measure of marrow production, an adjustment must be made for this alteration in the maturation time of circulating reticulocytes. (Hillman, R. S.: *Characteristics of Marrow Production and Reticulocyte Maturation in Normal Man in Response to Anemia*, *J. Clin. Invest.* 48: 443 (March) 1969.)

LACTATE METABOLISM The conversion of lactate by the isolated pig liver was studied, using reduced blood flow rates and reduced oxygen saturation. The liver retained the ability to metabolize lactate when perfused with fully-oxygenated blood at flow rates only 10 per cent of normal. However, with flow rates 20 per cent of normal and decreased oxygen saturation (below 50 per cent), lactate was not cleared. Studies of human patients in shock indicate that when lactate is administered, it is cleared satisfactorily. Lactated Ringer's solution is suitable for use in shock and acidosis. (Johnson, J., Bielanski, E., and Eiseman, B.: *Lactate Metabolism during Marginal Liver Perfusion*, *Arch. Surg.* 99: 75 (July) 1969.)

CAROTID SINUS STIMULATION The circulatory effects of carotid sinus nerve (CSN) stimulation in seven patients with coronary artery disease were evaluated. Measurements were made during rest and during exercise. In resting patients CSN stimulation decreased mean arterial pressure (23 per cent), cardiac output (8 per cent), total peripheral resistance (14 per cent), and heart rate (9 per cent).

CSN stimulation during exercise decreased arterial pressure and total peripheral resistance without changing cardiac output. Forearm vascular resistance decreased in both conditions, while forearm blood flow was unchanged. The finding that CSN stimulation dilates resistance vessels but not capacitance vessels suggests that the capacitance bed does not participate in baroreceptor reflexes under physiologic circumstances. (Epstein, S. E., and others: *Circulatory Effects of Electrical Stimulation of the Carotid Sinus Nerves in Man*, *Circulation* 40: 269 (Sept.) 1969.)

ANEMIA Hemodynamic studies of seven severely anemic (Hb 1.9 to 3.8 g/100 ml) children, during both air and oxygen breathing, were done. During air breathing, cardiac index and heart rate were above normal (7.71 l/min/m² and 129 beats/min). With oxygen breathing these values decreased to 6.61 l/min/m² and 119 beats/min, while systemic vascular resistance increased. Despite the decreased cardiac index, oxygen transport to tissues increased because of the increased oxygen dissolved in plasma. It is postulated that anemia leads to tissue hypoxia, which causes vasodilation, lower resistance to blood flow, and a decrease in blood pressure. The decrease in blood pressure stimulates baroreceptors, causing reflex constriction, which maintains blood pressure at nearly normal values. When anemia becomes severe (Hb less than 7 g/100 ml), tissue hypoxia becomes so severe that reflexes cannot maintain blood pressure without an increase in cardiac output, caused by decreased vagal tone and increased myocardial contractility. (Cropp, G. J. A.: *Hemodynamic Responses to Oxygen Breathing in Children with Severe Anemia*, *Circulation* 40: 493 (Oct.) 1969.)

ERYTHROCYTES AND ACD SOLUTION The flexibility and respiratory efficiency of erythrocytes stored in acid-citrate-dextrose (ACD) solution were measured. The rate of packing of stored blood during centrifugation indicated that erythrocytes are relatively inflexible. Observations using spectrophotometry and the rapid-mixing and stopped-flow techniques indicated that the rate of egress of oxygen from oxyhemoglobin in these