

the patient's poor clinical condition and following correction of the acidosis, there may be a remarkable improvement. In other instances, correction of the acidosis may produce only partial clinical improvement. In one patient, consciousness returned as the acidosis was corrected. (Norman, J. N., and Clark, R. G.: *Metabolic Acidosis in General Surgery*, *Lancet* 1: 348 (Feb. 15) 1964.)

ACID-BASE BALANCE Changes in acid-base equilibrium of blood following infusion of hyperosmotic solutions have been studied in nephrectomized dogs with P_{CO_2} held constant. Infusion of hyperosmotic sodium chloride or mannitol consistently leads to a fall in plasma bicarbonate and hence in blood pH. The magnitude of the fall in plasma bicarbonate can be largely accounted for by the magnitude of the osmotically induced transfer of water from the intracellular to the extracellular space. Some transfers of bicarbonate between these two compartments cannot be excluded, but even under rather extreme assumptions, the effect of such transfer on bicarbonate concentration is relatively small compared to the effect of dilution. A corollary of these results is that intracellular pH should rise, since bicarbonate concentration within the cells should rise as water is withdrawn. Although no studies in intracellular pH were performed in these experiments, studies of the acid-base changes in cerebrospinal fluid, another compartment that apparently permits rapid equilibration of water and P_{CO_2} but not of bicarbonate, show that cerebrospinal fluid pH rises as blood pH falls and that this rise is due to an increased concentration of cerebrospinal fluid bicarbonate. (Winter, R. W., and others: *Mechanism of Acidosis Produced by Hyperosmotic Infusions*, *J. Clin. Invest.* 43: 647 (Apr.) 1964.)

OXYGEN DISSOCIATION CURVE At saturations below 80 per cent the oxygen dissociation curve of human fetal blood has been described with considerable accuracy and, as in other mammalian young, is known

to be displaced to the left of that for the adult blood although both curves share a similar shape. Presented data define the oxygen dissociation curve in the physiologic range above 80 per cent saturation. Specific constants have been derived from these data for the equation that describes oxygen dissociation. The oxygen-dissociation curve for fetal-neonatal blood at pH 7.4 is identical with that for adult blood at pH 7.6 (Nelson, N. M., and others: *Further Extension of the In Vivo Oxygen-Dissociation Curve for the Blood of the Newborn Infant*, *J. Clin. Invest.* 43: 606 (Apr.) 1964.)

TISSUE GAS TENSIONS Oxygen and carbon dioxide tensions of tissues were estimated by sampling liquids that were instilled in hollow viscera and permitted to remain until they reached gaseous equilibrium with the surrounding tissue. Under normal conditions, oxygen tension of tissues of the urinary bladder is lower than that of its venous blood. During the breathing of enriched oxygen mixtures, the difference in oxygen tension between the tissues and the venous blood becomes even greater. These differences are attributed to diversion of blood flow from the capillaries to vessels where gas exchange is limited. Implicit in this mechanism which curtails capillary blood flow is the likelihood of impairing the exchange of other substances between blood and tissues. (Bergofsky, E. H.: *Determination of Tissue Oxygen Tensions by Hollow Visceral Tonometers: Effect of Breathing Enriched Oxygen Mixtures*, *J. Clin. Invest.* 43: 193 (Feb.) 1964.)

HYPOTHERMIA In 15 patients undergoing neurosurgery under hypothermia the temperatures were recorded in the brain, esophagus and rectum. The esophageal temperature came closest to the brain temperature, the difference not exceeding 0.4° C. (Lechowski, S.: *Regional Differences of Body Temperature During Intracranial Operations in Hypothermia*, *Der Anaesthetist* 13: 47 (Feb.) 1964.)