

VENTRICULAR ARRHYTHMIAS It is futile to attempt to control arrhythmias in the presence of hypotension. Ventricular and atrial arrhythmias that failed to respond to cardiac depressants often reverted when the blood pressure was raised to normal levels with norepinephrine. Presumably the increased coronary blood flow results in improved myocardial stability. The value of pressor amines in the control of ventricular tachycardia appears to lie in their ability to accelerate the basic idioventricular pacemaker, thereby suppressing ectopic activity. This effect may be the result of a shortened responsive phase or improved coronary blood flow. (Underhill, W. L., and Tredway, J. B.: *Treatment of Paroxysmal Ventricular Tachycardia with Isoproterenol*, *Ann. Intern. Med.* 60: 680 (Apr.) 1964.)

MYOCARDIAL FUNCTION Perfused rat hearts were subjected to a pH range from 8 to 6.9 produced by altering only the bicarbonate concentration of the perfusate. Gross deterioration of myocardial function was seen at pH 6.9. Insignificant functional changes were seen between pH 7.1 and 8. Glucose uptake and lactate production at pH 8 were twice as great as that at pH 7.1. Amplitude of contraction and electrocardiogram were unaffected in this range. Acidosis without hypoxia does not produce serious functional changes in myocardial function. (Opie, L. H., Kadas, T., and Gevers, W.: *Effect of pH on the Function and Glucose Metabolism of the Heart*, *Lancet* 2: 551 (Sept. 4) 1963.)

PULMONARY EMBOLISM The two lungs of rabbits were separately perfused: The left pulmonary artery was tied off proximally and blood was circuited from the right auricle via roller pump into the left pulmonary artery, distal to the ligation. The right lung was perfused via the natural circulation. Various emboli: barium sulfate particles, glass beads and thrombus material, were injected into the right pulmonary artery. Right pulmonary arterial pressure rose abruptly while pressure in the artificially perfused left pulmonary artery remained always unchanged. Neither pulmonary reflexes nor liberation of serotonin or other humoral effects were in-

involved in creating a contraction of the total pulmonary vascular bed, particularly not in the artificially perfused lung. Only mechanical narrowing of the pulmonary vascular bed was responsible for the pathophysiological sequelae of pulmonary embolism. Reflexes originate from the heart since electrophysiological studies employing leads from the vagus nerve demonstrate considerable impulses originating in the right heart in cases of larger emboli, leading to marked volume and pressure changes in the main pulmonary artery, right ventricle and right auricle. (Eisenreich, H.: *Investigations Concerning Pulmonary Reflexes in Pulmonary Embolism*, *Thoraxchirurgie* 11: 448, 1964.)

BLOOD PRESSURE Blood pressures in the brachial and femoral arteries were recorded consecutively and simultaneously by the intra-arterial method in 50 supine subjects. Statistically adequate results for the groups indicated that they may be used interchangeably and that all measured components of the blood pressure in the brachial and femoral arteries are essentially the same. (Pascarelli, E. C., and Bertrand, C. A.: *Comparison of Blood Pressures in the Arms and Legs*, *New Engl. J. Med.* 270: 693 (Apr. 2) 1964.)

(ABTRACTOR'S NOTE: These observations tend to nullify the comparative values published in the booklet of recommendations for blood pressure determination published by the American Heart Association.)

HYPOTENSION A theory for adrenergic cellular receptor mechanism distinguishes two types of receptors: (1) alpha receptors associated with sympathetic excitatory functions and (2) beta receptors associated with sympathetic inhibitory functions including cardiac inotropic and chronotropic sympathetic receptors. Nethalide is an effective antagonist of beta receptors and was given to two patients with prolonged hypotension requiring continuous vasopressor therapy. It was clinically effective in allowing the withdrawal of metaraminol therapy and the maintenance of normotension. If hypotension is an imbalance in the peripheral sympathetic nervous system this could be either beta-receptor hypersensitivity or alpha receptor fatigue. Thus block-

ing adrenergic beta-receptors with nethalide would cause exogenous and endogenous catecholamines normally reacting with vasodilating receptors to be shifted to excitatory (vasoconstrictor) receptors. (Luria, M. H., and others: *Successful Therapy of Prolonged Hypotension with an Adrenergic Beta-Receptor Blocking Agent*, *Circulation* 29: 494 (Apr.) 1964.)

DEXTRAN Perfusion of Macrodex (dextran) to the circumflex coronary artery oxygenated at 1 or 3 atmospheres pressure leads to ventricular fibrillation and edema of the perfused region in dogs. This may be due to the higher viscosity. On the other hand, perfusion of oxygenated Rheomacrodex at normal atmospheric pressure could maintain heartbeat and blood pressure at levels near the normal as long as exsanguination was not performed. Perfusion at 3 atmospheres absolute pressure during 200 minutes enabled heart function to bear the work load of the circulation. Thus a variation in the molecular properties of dextran could induce ventricular fibrillation or reverse hypodynamic pressure changes after coronary occlusion and insure an apparently undisturbed heart function. (Petropoulos, P. C., and Meijne, N. G.: *Comparative Results of the Cardiac Function During Perfusion of a Main Coronary Artery with Lower or Higher Molecular Weight Dextran Under Normal and Hyperbaric Oxygenation*, *J. Thor. Cardio. Surg.* 47: 651 (May) 1964.)

HUMAN CORPSE BLOOD Transfusion of anemic patients with blood drawn from human corpses (without ACD solution or other additives) has long been performed in Russia but only recently successfully performed and reported in the United States. In most cases of sudden death the blood undergoes a peculiar type of fibrinolysis which obviates the need for anticoagulant solutions. Blood was usually administered as packed cells. No significant alterations in the stored blood or in the recipients were noted. Interest in this procedure in the United States has lagged because of the need to draw the blood within six hours after death of donor, an autopsy must be completed, suitable donors are sporadic and the yield has not been large (1-4½ pints per phlebotomy in this study).

(Kevorkian, J., and Marra, J. J.: *Transfusion of Human Corpse Blood Without Additives*, *Transfusion* 4: 112 (Mar.-Apr.) 1964.)

CEREBRAL BLOOD FLOW Cerebral blood flow and oxygen consumption were measured by the nitrous oxide method and radioactive krypton techniques and correlated with frequency analysis of resting electroencephalogram in both healthy community volunteers and psychiatric patients having various degrees of chronic brain damage. The healthy group showed no correlation between the electroencephalogram and cerebral blood flow and oxygen consumption; whereas, the senile group did show a positive correlation between electroencephalogram changes and cerebral blood flow, cerebrovascular resistance and oxygen uptake. The resting electroencephalogram abnormalities indicate the existence of derangements of cerebrovascular physiology. (Obrist, W. D., and others: *Relation of Electroencephalogram to Cerebral Blood Flow and Metabolism in Old Age*, *Electroenceph. Clin. Neurophysiol.* 15: 610 (Aug.) 1963.)

CEREBRAL BLOOD FLOW Before craniotomy, postural changes from horizontal to the erect position had no effect on internal carotid blood flow of monkeys. The same changes under halothane anesthesia produced postural hypotension and decreased internal carotid blood flow. Craniotomy in the sitting position may result in a rapid and dangerous decrease in cerebral blood flow. (Galindo, A., and Savolainen, U. P.: *Craniotomy and Internal Carotid Blood Flow*, *Ann. Surg.* 159: 437 (Mar.) 1964.)

ACIDOSIS Occurrence of severe metabolic acidosis in six patients after abdominal operation was demonstrated. Arterial blood pH was found to range as low as 7.04, P_{CO_2} as low as 19 and standard bicarbonate as low as 11.0 mEq. per liter. The acidosis was corrected with sodium bicarbonate; amounts varying from 152 to 437 mEq. were required for correction. In 18 months metabolic acidosis was detected in 60 patients, 42 of whom required correction with sodium bicarbonate. Occasionally acidosis alone is responsible for