

and clinically. Similar massive doses also may help in the treatment of cardiogenic shock. In both conditions steroids reduce peripheral resistance and vasoconstriction, thus improving tissue blood flow. Although definite alpha-blocking activity has not been proven, the response is similar to alpha-adrenergic blockade. In addition, steroids help maintain the integrity of cell membranes and help prevent the release of proteolytic enzymes from lysosomes. With steroid treatment, survival rate in dogs with experimentally-produced myocardial infarction rose from 25 to 65 per cent. Patients with cardiogenic shock also responded well. Doses of 30 mg./kg. of methylprednisolone (Solu-Medrol), 6 mg./kg. of dexamethasone (Decadron), or 150 mg. of hydrocortisone (Solu-Cortef) were necessary to produce this effect. (Dietzman, R. H., and Lillihei, R. C.: *The Treatment of Cardiogenic Shock, Part V, Amer. Heart J.* 75: 274 (Feb.) 1968.)

ABSTRACTOR'S COMMENT: The increase in the survival rate of dogs receiving alpha-adrenergic blockade or steroids is impressive. There is not sufficient data to evaluate the benefits in human cardiogenic shock. The clinical impression is that they might be of some value.

BLOOD VOLUME Plasma volume increased 21 per cent following one week's administration of guanethidine to normal men. A similar increase in plasma volume was seen after phenoxybenzamine. There was no associated sodium retention. Forearm venous sympathetic reflexes were attenuated. The sympathetic nervous system may provide a means whereby blood volume is regulated. (Weil, J. V., and others: *Plasma Volume Expansion Resulting from Interference with Adrenergic Function in Normal Man, Circulation* 37: 54 (Jan.) 1968.)

HEMODILUTION At the terminal stage of bypass the hemodilution technique imposes a time limitation on the prevention of severe metabolic acidosis during bypass. The time limit may be 60 minutes with high hemodilution, 120 minutes with moderate hemodilution, and 180 minutes with low hemodilution. With prolongation of total cardiopulmonary bypass time, care must be exercised in

the treatment and stabilization of all acid-base parameters during and following bypass. The administration of additional Tris buffer at the midpoint of the perfusion and one hour after the operation; adequate counter-measures to prevent respiratory distress; and frequent observation of the acid-base equilibrium is recommended. (Taguchi, K., and others: *Clinical Experiences with Hemodilution in Total Cardiopulmonary Bypass, Surgery* 63: 252 (Feb.) 1968.)

BLOOD STORAGE The addition of adenine and inosine to stored acid-citrated blood can increase the useful storage period to eight weeks. The increased survival is correlated with the adenosinetriphosphate content of the blood. The useful life of bank blood could be extended by the addition of adenine and inosine as the customary expiration date of three weeks approaches. (Strumia, M. M., and others: *The Preservation of Blood for Transfusion. VI. Effect of Addition of Adenine and Inosine on ATP and Posttransfusion Survival of Red Cells of Stored Blood, J. Lab. Clin. Med.* 71: 138 (Jan.) 1968.)

ERYTHROCYTE PRESERVATION Criteria for determining clinical acceptability of preserved erythrocytes include viability, mode of removal of nonviable red cells, and quantity of supernatant hemoglobin in the blood. Other measurements include toxicity of additives, sterility, pH, and extracellular potassium concentration. Supplementation of ACD solution with purine nucleosides increases acceptable storage time. Frozen blood is essentially packed erythrocytes. If coagulation factors are needed, fresh frozen plasma should be used. Preservation of erythrocytes by freezing is more costly than the standard method that uses ACD liquid preservation. Freezing of erythrocytes may be indicated to store rare types of blood, for autotransfusions, to establish a supply of selected red cells lacking the antigens to which recipients are most commonly sensitized, and as a stockpile of selected erythrocytes in anticipation of a military or civilian disaster. (Valeri, C. R.: *Preservation of Human Red Blood Cells, Bull. N. Y. Acad. Med.* 44: 1 (Jan.) 1968.)