

postoperative week characterized by febrile illness associated with splenomegaly, and the appearance of abnormal lymphocytes in the peripheral blood, anorexia and weakness. (4) An increasing number of surgeons have used no homologous blood at all for priming pumps. They claim better perfusion of the microcirculation, a reduction of red cell sludging, less alteration of hemostasis, complete avoidance of the risk of post-transfusion hepatitis, the postperfusion lymphocytic syndrome, isoimmunization, and the homologous blood syndrome. As far as can be determined, hematocrit levels as low as 20 to 25 per cent are tolerated during extracorporeal circulation. The physiological stress of rapid hemodilution at the onset of the procedure appears to be minor. (5) There is no single simple answer to the question of the applicability of hemodilution and the modification of the priming fluid in all situations. Whether to use whole blood, hemodilution, or total substitution or whether to modify the perfusate in some particular respect must be decided by the individual surgeon and his consultant group. (6) Serious postoperative bleeding is no longer of great importance. Currently the estimated incidence is 1 per cent and except in incidences of severe protracted shock, most of the serious bleeding that does occur is the result of ineffective local hemostasis at the time of surgery. (7) When sufficient electrolyte solution is added to the pump to reduce the hematocrit to 25 per cent, fibrinogen, prothrombin and factor V concentrations are lower but there is less fibrinolysis than when whole blood is used as the perfusate. When dextran is used as the perfusate, the levels of fibrinogen and factor VIII are significantly lower. (8) The type of pump oxygenator seems to have relatively little effect on changes observed in the plasma coagulation factors. Use of the membrane oxygenator is associated with almost complete disappearance of platelets in the donor's blood before bypass but during bypass the platelet count in the blood in the circuit usually rises to normal. Reduction in the number of platelets is related to the volume of donor blood used, especially if it was collected more than twenty-four hours before use. (9) The patients who die during or after sur-

gery usually have variable levels of factors V and VIII, prothrombin, fibrinogen, and platelets, suggesting that intravascular coagulation has occurred. This stresses the importance of maintaining high levels of heparin in the blood of patients with inadequate circulatory flow. (10) Most investigators still report plasma hemoglobin levels to be increased at the conclusion of extracorporeal circulation. These vary directly with the duration of the pump procedure. It is increased when 5 per cent dextrose and water is used as a diluent and decreased when Pluronic F6S is added. (*Committee on Blood and Transfusion Problems, Division of Medical Sciences, National Academy of Sciences-National Research Council: The Use of Blood and Blood Substitutes for Extracorporeal Circulation, Transfusion 6: 355 (July) 1966.*)

DEXTRAN Low molecular weight dextran has a high colloid osmotic pressure and increases plasma volume markedly by withdrawing water from the interstitial fluid compartment. The reduction in blood viscosity is associated with a marked increase in the microcirculation. This may prevent the formation of toxic substances from tissues which might otherwise be damaged by ischemia. Dextran appears to coat the erythrocyte surface and "crowd out" protein substances which tend to sludge blood. The increased intravascular volume caused by dextran may aid in maintaining the normal moderate tone of the small vessels, part of which is dependent on myogenic response to internal pressure. (*Schnitzweiss, R., and others: Prevention of Hypotension Following Release of Aortic Occlusion, Surgery 60: 628 (Sept.) 1966.*)

DEXTRAN Low molecular weight dextran given to 3 subjects for from 4 to 12 days for treatment of vascular occlusions, without hypotension or dehydration, resulted in acute renal failure in all and in one fatality. On renal biopsy the renal tubules were found to be engorged with dextran. (*Morgan, T. O., and others: Renal Failure Associated with Low-molecular-weight Dextran Infusion, Brit. Med. J. 2: 737 (Sept.) 1966.*)