Literature Briefs

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Briefs were submitted by Drs. C. M. Ballinger, N. Bergman, R. B. Boettner, A. Boutros, D. R. Buechel, H. F. Cascorbi, R. B. Clark, D. Duncalf, W. H. Mannheimer, F. C. McPartland, D. H. Morrow, R. C. Morton, J. W. Pender, A. D. Randall, L. J. Saidman, and A. D. Sessler. Briefs appearing elsewhere in this issue are part or this column.

Circulation

DIGITALIS AFTER MYOCARDIAL INFARCTION Eleven patients in sinus rhythm but showing evidence of poor left ventricular function subsequent to recent myocardial infarction were digitalized by intravenous administration of 0.25 mg strophanthidin or 0.5 mg digoxin. Cardiac output fell an average of 14 per cent after 30 minutes, with no change in pulmonary artery pressure, aortic pressure or peripheral resistance. Later, cardiac output rose, but it had not reached control levels by 60 minutes. Heart rate decreased following digitalization, the average drop being 6 per cent at 60 minutes. The decrease in cardiac output was not due solely to the decrease in heart rate. In one patient an anginal attack may have been precipitated by administration of digitalis. Since no evidence of beneficial hemodynamic actions of acute digitalization were observed in this group of patients, intravenous digitalization may be contraindicated in patients of this type following myocardial infarction. (*Balcon, R., Hoy, J., and Sowton, E.: Haemodynamic Effects of Rapid Digitalization Following Acute Myocardial Infarction, Brit. Heart J. 30: 373 (May) 1968.*)

BLOOD SUBSTITUTES The effects of four colloidal blood substitutes on blood volume, blood coagulation and renal function were studied one hour after initiation of severe hemorrhagic shock in dogs. The solutions and their molecular weights were: 6 per cent dextran, 75,000; 10 per cent dextran, 40,000; 3½ per cent modified gelatin, 35,000; 5.6 per cent oxypolygelatin, 30,000. After rapid bleeding of 4.8 per cent of body weight, mean blood pressure was reduced to approximately 33 per cent of the control value. After infusion of a volume equal to the blood loss, mean blood pressure reached 90 per cent of the control value with 5.6 per cent gelatin; 94 per cent with 6 per cent dextran; 99 per cent with 10 per cent low-molecular-weight dextran; 89 per cent with 3.5 per cent gelatin. Circulating blood volume was re-established best with 10 per cent dextran (12 per cent of control) and 6 per cent dextran (112 per cent of control). The effects of blood pressure and blood volume persisted for more than four hours. After arterial hemorrhage the coagulation time was shortened by 33 per cent due to increased coagulability during shock. With continuing shock, this hypercoagulability changed to a phase of decreased coagulability, possibly due to consumption coagulopathy. After replacement with blood substitutes, the coagulation time was further prolonged, by mere dilution or possibly by increased plasmin activity, to more than 270 per cent of control with low-molecular-weight dextran and significantly less with the other blood substitutes. Low-molecular-weight dextran also had the greatest effect in depressing renal function. It is concluded that low-molecular-weight dextran should be used less as a volume expander but primarily as an agent in the treatment or prevention of thrombi in the microcirculation. (*Lutz, H.: The Effect of Colloidal Blood Substitutes in Hemorrhagic Shock of the Dog, Z. Ges. Exp. Med. 146: 383 (April) 1968.*)