Literature Briefs

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Briefs were submitted by Drs. N. Bergman, A. R. Boutros, D. R. Buechel, R. B. Clark, M. I. Gold, W. H. Mannheimer, F. C. McPartland, D. H. Morrow, R. C. Morton, J. W. Pender, A. D. Randall, H. Roe, P. H. Sechzer, A. D. Sessler, and M. Soetens. Briefs appearing elsewhere in this issue are part of this column.

Circulation

PULMONARY HYPERTENSION After pneumonectomy, pulmonary artery pressure may rise by 30 to 40 per cent. In pneumonectomized dogs, after an exchange of 15 per cent of the blood volume by an infusion of 10 per cent dextran (mol. weight 60,000), an additional pressure rise of about 20 per cent, which lasted two hours or more, was noted. In contrast, an exchange of 15 per cent of the blood volume by a 3.5 per cent gelatin solution resulted in minimal pressure increases after pneumonectomy. The pulmonary hypertension was thought to be due to an initial hypervolemia, but gradually changed from a volume hypertension to a resistance hypertension. Hypervolemia could be excluded as a cause, as demonstrated by volumometry and typical pressure curves with high diastolic pressures. After pneumonectomy, the other lung cannot compensate by additional expansion of the capillary bed. According to Poiseuille's law, an increase in viscosity must result in an increase in resistance. The viscosity of dextran 60,000 is more than three times the viscosity of blood. In clinical practice, infusion with plasma substitutes of high viscosity should be avoided to prevent hypertension caused by increased resistance. This is important after pneumonectomy or operations which reduce the size of the lungs and lead to an increase of pressure in the pulmonary circulation. (*Hartel, W., Schmelke, K., and Kohlkepp, E.: The Effect of Plasma Volume Expanders on the Pulmonary Artery Pressure after Pneumonectomy, Thoraxchirurgie 16: 243 (June) 1968.*)

DIURETICS IN PULMONARY EDEMA The diuretic effects of intravenous ethacrynic acid or intramuscular mercaptomerin as an adjunct to the treatment of acute pulmonary edema were compared in two comparable groups of randomly selected patients. Although ethacrynic acid induced noticably greater diuresis and natriuresis in the first three hours, these differences were not significant at the end of six hours. The diuretic response to mercaptomerin was evenly distributed around a mean of 1,239 ml per six hours. In contrast, the response to ethacrynic acid was biphasic, with six patients failing to respond (mean diuresic 287 ml per six hours) and the remaining 13 voiding an average of 2,506 ml per six hours. The rate of clinical improvement was independent of the rapidity of diuresis. These data, therefore, cast doubt on the necessity for the use of the most rapidly acting diuretics in the treatment of acute pulmonary edema. (*Lesch, M., and others: Controlled Study Comparing Ethacrynic Acid to Mercaptomerin in the Treatment of Acute Pulmonary Edema, New Eng. J. Med. 279: 115 (July) 1968.*)

KININS AT BIRTH The concentrations of bradykinin in specimens of cord blood of 562 newborn infants at birth were about six times higher than blood levels in adult subjects. The cord arterial blood contained kininogen (inactive kinin precursor) and kallikrein (inactive kinin-releasing enzyme). At birth the temperature of umbilical arterial blood decreases. Plasma kallikrein could be activated by decreasing the temperature of infant cord blood from 37 to 27 C. Other techniques for activating plasma kallikrein were also studied.