

Effect of anticoagulants on the capillary resistance of internal organs of rats

SIR,—It has been reported that 10 min after an intravenous injection of certain anticoagulants like sodium polyanethole sulphonate (Liquoid) or heparin, the capillary resistance of rat skin decreased (Gábor, Dux & Kiss, 1954; Gábor & Dux, 1954, Gábor, 1960) an effect confirmed for heparin by Kramár (1961).

A method has been developed recently by Dirner, Antal & Gábor (1966) for measuring the capillary resistance in internal organs and we have used it to measure the effect of anticoagulants.

The experiments were made on the ileum, colon and kidney of fasting rats, males or females, weighing 160–200 g, under urethane anaesthesia. Measurements were made before, and 10–20 min after the injection of the anticoagulants. Suction was applied for 30 sec by means of a plexiglass suctioning apparatus, 3 mm in diameter.

TABLE 1. EFFECT OF SODIUM POLYANETHOLE SULPHONATE (LIQUOID) AND OF HEPARIN (1 MG/KG I.P.) ON THE CAPILLARY RESISTANCE (EXPRESSED AS A MEAN FALL IN PRESSURE IN MM HG) OF INTERNAL ORGANS OF RATS

	Ileum ¹	Colon ²	Kidney ³
Sodium polyanethole sulphonate (15 animals)	200 (range 100–500) mm Hg	180 (range 100–300) mm Hg	180 (range 100–400) mm Hg
Heparin (15 animals)	150 (range 100–300) mm Hg	193 (range 100–400) mm Hg	140 (range 100–300) mm Hg

Initial internal pressure range:

- ¹ 200–700 mm Hg for the sodium polyanethole sulphonate- and 200–500 mm Hg for heparin-treated animals.
- ² 400–700 mm Hg for the sodium polyanethole sulphonate- and 600–700 mm Hg for heparin-treated animals.
- ³ 200–700 mm Hg for the sodium polyanethole sulphonate- and 400–700 mm Hg for heparin-treated animals.

The results of the experiments are in Table 1. These results show that the capillary resistance decreased in all animals after the administration of sodium polyanethole sulphate and heparin.

We then attempted to prevent the capillary resistance-lowering activity of heparin with specific antagonists like protamine sulphate or toluidine blue. In 5/5 animals the capillary resistance-lowering action of heparin did not occur after either protamine sulphate (30 mg/kg i.p.) or toluidine blue (10 mg/kg i.v.).

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