Sublingual Administration of Heparin. (18767)

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There is general agreement on the advantages of heparin as an anticoagulant. However, the methods of administration used to date have not been entirely satisfactory(1,2). It occurred to one of us (J.L.) that some of the disadvantages of these methods, notably the pain on intramuscular injection, the frequency of injection, and the necessity of sterilization, might be avoided by use of the sublingual route. Accordingly, this method was tried and found effective.

Method. Sublingual wafers containing 125 mg of sodium heparin were prepared. The Lee-White 3 tube technic(3) was used for the determination of coagulation time. The pellet of heparin was then placed in the sublingual pouch, where it rapidly disintegrated. Absorption was usually complete in 10 min. The coagulation time was determined prior to the administration and at one-half, one, 2, 3, 4, 6, and 7 hours after the administration of the pellet.

Results. The results obtained are shown in Fig. 1. A therapeutic level is obtained within one-half hr, and maintained for 4 hr.

Discussion. This method makes available a practical means for the easy administration of heparin. In addition, there is no known toxicity for this substance(4) and overdosage is not a problem because of the short duration

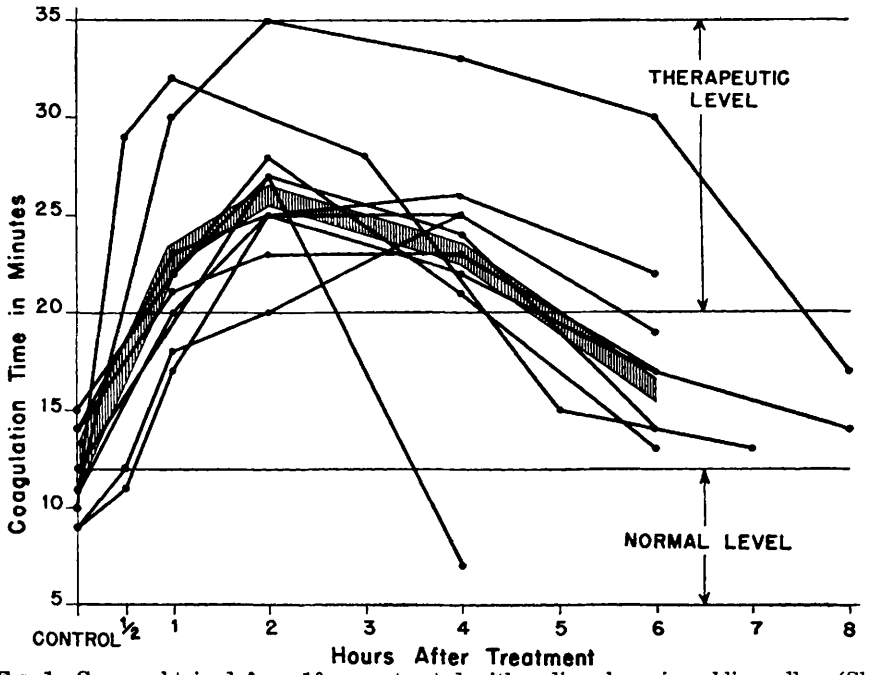

FIG. 1. Curves obtained from 10 cases treated with sodium heparin sublingually. (Shaded area is composite curve of avg.)

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of the anticoagulant effect.

The method fulfills a need expressed by Wright(5) and others for "an anticoagulant which can be taken by mouth and can produce an anticoagulant effect within one hr."

The importance of such a drug in the treatment of frostbite is indicated by the work of Lange(6) and others. The value of initiating such treatment in the field before the hospitalization of a frostbitten soldier is obvious. We believe that by virtue of its rapid effect and ease of administration, the sublingual route may well become the method of choice for the early anticoagulant treatment of myocardial infarction(7), pulmonary embolism, and thrombophlebitis, and in vascular surgery. Further study is indicated to properly assess its place in the anticoagulant armamentarium for the treatment of thrombo-embolic diseases.

Conclusion. Sodium heparin is a practical and effective anticoagulant when administered sublingually. By this method, the coagulation time of the blood was consistently prolonged to the therapeutically effective levels for 4 hr.

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Clinical and Metabolic Study of 17-Hydroxycorticosterone (Kendall Compound F); Comparison with Cortisone.* (18768)

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Additional investigation of Kendall's Compound F was prompted by the probability of its being an important constituent of the adrenal cortex(1,2), its close structural similarity to cortisone, and its effectiveness in rheumatic disorders(3). The present study was undertaken primarily in order to compare the clinical and metabolic effects of 17-hydroxycorticosterone-21-acetate† (Cpd. F) with those produced by cortisone acetate,† employing similar conditions and methods to those previously reported(4).

Case report. A.C., a 38-year-old woman, was admitted to the metabolic ward of the Presbyterian Hospital with active rheumatoid arthritis of 14 years' duration. The diagnosis was made on clinical and laboratory grounds, and was substantiated serologically. After a preliminary period on a constant diet and fluid intake, she received 50 mg of Cpd. F intramuscularly at 12-hour intervals for 24 days. The steroid was then replaced by a placebo (cholesterol suspension†) for one week, following which cortisone was administered intramuscularly at the same intervals and dosage.

Results. (Fig. 1). The administration of both Cpd. F and cortisone was associated with slight insomnia, a moderate degree of increased mental "speed-up" and emotional

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† Supplied through the courtesy of Dr. Augustus Gibson of Merck & Co., Rahway, N. J.

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