

# THE EFFECT OF ADRENOCORTICOTROPIC HORMONE ON POST-MORTEM RIGIDITY

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In studying the effects of adrenalectomy, we found that it causes a considerable delay in the development of post-mortem rigidity. Here we have attempted to find which hormone it is whose absence in the adrenalectomized rats produces this effect.

## METHOD

The experiments were carried out on 90 adult rats, all from the same nursery. The adrenalectomy was performed under ether anesthesia. After operation, for one week, 30 of the adrenalectomized animals received intraperitoneal injections either of a 0.5% solution in oil of 5 mg per 100 g body weight of cortisone and the same amount of deoxycorticosterone, or 5 units per 100 g of cortin. Forty of the adrenalectomized group received no hormone therapy after the operation. All the animals were given milk and tap water (without the addition of sodium chloride).

Two hours after the last injection, the rats were decapitated, and the rate of stiffening of the tail measured [2].

## RESULTS

It can be seen from Fig. 1 that adrenalectomy delays post-mortem rigidity.

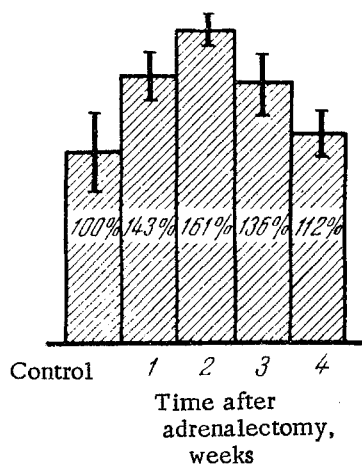


Fig. 1. The effect of adrenalectomy on the time of onset of post-mortem rigidity of skeletal muscle (time for the control rats taken as 100%).

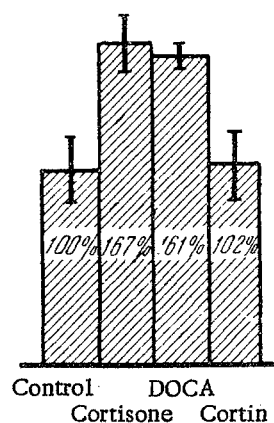


Fig. 2. The effect of adrenocortical hormones on post-mortem rigidity in adrenalectomized rats. Measurements made one week after adrenalectomy (time for the control rats taken as 100%).

The slowest development of rigidity occurred when the rats were killed two weeks after adrenalectomy. When killed after three weeks, rigidity developed somewhat more rapidly; after four weeks its onset occurred approximately at the same time as in the control groups. Evidently, 3-4 weeks after the operation sufficient corticosteroids are being produced [1].