

which had been very severe, rapidly improved, so that by the third day it had completely disappeared. Likewise, the dermatitis and stomatitis rapidly improved.

Pellagrins can be cured while on a maize diet by the administration of a liver filtrate which contains the chick antidermatitis factor but which is free from lactoflavin and rat vitamin B<sub>6</sub>.

### 8925 P

#### Effect of Cortin upon Renal Excretion and Balance of Electrolytes in the Human Being.\*

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Previous attempts to show a positive effect of cortin in normal subjects have met with little success. The present experiments demonstrate that large doses of this hormone produce a prompt effect on the kidney. Sodium, potassium and chloride excretion have been studied in 4 normal subjects and in 2 patients with Addison's disease. All were maintained on a constant diet and liquid intake. Hourly urine specimens were collected during the fasting state with the subject at rest. Cortin was injected intravenously each hour for 4 hours, a total of 80 cat units being injected in each subject. This was approximately 3 times the amount required to maintain a patient with severe Addison's disease for 24 hours. Sodium chloride (0.9%), heated cortin solution and a dilute adrenalin solution were used as control injections. The results are summarized in Table I.

Cortin injections were associated with a marked reduction (average 42%) in the excretion of sodium over a 5-hour period. In patients with Addison's disease similar injections of cortin caused reductions in sodium excretion ranging from 20 to 50% depending on the condition of the patient.

Potassium excretion was increased in the normal subject about 30% for the 5-hour period during which cortin was injected. In the case of one untreated patient there was no increase in potassium excretion during the 5-hour period. With the patients CB<sup>1</sup> and IB<sup>1</sup> the injection of cortin increased the excretion of potassium 66 and 170% respectively during the 5-hour period.

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TABLE I.

Influence of Cortin on Renal Excretion in Normal Human Beings and in Patients with Addison's Disease.

Each subject received 5 cc. of 0.9% NaCl intravenously every hour for 4 hours in experiments "A" and "B". During experiment "B" a total of 80 cat units of cortin were injected with NaCl. Values given below are for total excretion during the 5-hour period after the first injection.

Sub- ject	Urine cc.		Sodium m. eq.		Potassium m. eq.		Chloride m. eq.		Phosphate m. eq.	
	A	B	A	B	A	B	A	B	A	B
A.D.	502	470	32.50	17.11	23.14	30.54	25.48	36.40	40.68	44.18
S.H.	855	836	88.87	42.55	24.63	39.82	60.09	42.35	34.57	29.83
R.M.	830	844	61.57	32.74	36.54	45.01	43.66	29.42	43.57	37.10
G.T.	860	684	49.49	42.10	25.34	26.88	48.63	52.25	38.51	38.42
Patient										
C.B. <sup>1</sup>	373	379	62.20	42.10	6.61	17.96	62.85	47.32		
I.B. <sup>1</sup>	690	381	39.50	30.90	8.49	14.08	35.99	31.96		
I.B. <sup>2</sup>	418	290.5	26.11	13.85	13.84	13.09	31.55	19.37		

<sup>1</sup>Treated with maintenance cortin and NaCl daily.

<sup>2</sup>Untreated.

Some reduction in chloride excretion accompanied the cortin injections in 2 normal subjects and in both patients with Addison's disease.

Electrolyte balance studies were carried out on 8 normal subjects and on 3 patients with severe Addison's disease. The subcutaneous daily injection of from 12 to 30 cat units of cortin produced no effect in the normal subjects.

All 3 patients with Addison's disease showed a marked retention of both sodium (68 to 205 m.eq.) and chloride (66 to 226 m. eq.) following the injection of cortin. Two of these patients had been studied before starting treatment and had been shown to be in a negative balance in regard to both sodium and chloride.

The effect on potassium balance was less marked, although all 3 patients showed a slight negative balance after the injection of cortin.