

# MASSIVE DOSES OF CORTISONE IN THE CONTROL OF ACUTE LUPUS CRISIS IN SYSTEMIC LUPUS ERYTHEMATOSUS

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WE have reported elsewhere<sup>1</sup> the life-saving effect of massive dosages of cortisone and/or ACTH in the acute lupus crises which have, in the past, fatally complicated the course of systemic (acute or subacute disseminated) lupus erythematosus. The present brief report further exemplifies the value of this treatment. It also records the largest doses of cortisone yet given. A rationale for such treatment is suggested also.

## Case Report

A 12 year old girl was admitted to the Cleveland Clinic on August 22, 1950, complaining of joint pains of 6 months' duration, and of chills, fever, malaise and weight loss as well as a rash over the bridge of her nose which had been present for 3 weeks. A positive L.E. test<sup>2</sup> confirmed the diagnosis of acute systemic lupus erythematosus.

The clinical manifestations subsided under treatment with cortisone supplemented briefly with ACTH. She was discharged for home care on a maintenance dosage of 50 mg. of cortisone administered orally twice a day, a low sodium diet (0.5 Gm. sodium) and 3 Gm. of potassium chloride daily. Joint pains and malaise recurred in about 2 weeks and, during the next 3 months, were checked only by means of gradually increased doses of cortisone, finally approximating a total of 170 mg. daily.

Because of this difficulty the patient was readmitted with the purpose of re-establishing control with ACTH. Treatment with ACTH (120 to 160 mg. daily) and gradually diminishing doses of cortisone (300 to 60 mg. daily) was begun in divided doses on the second hospital day. This therapy proved inadequate, presumably because of adrenal irresponsiveness to ACTH and the severity of the disease. This drug was discontinued at the end of 10 days and cortisone resumed at a level of 250 mg. daily.

Inadequacy of these measures was indicated by a severe epileptiform convulsion, the first, which occurred on the fifth hospital day, followed by a similar seizure 5 days later. Electroencephalographs showed profound exacerbation in dysrhythmic change from the record obtained 6 months before. Retinal exudates, first observed at this admission, increased in size and number. The patient continued to be febrile, and to complain of back and chest pains and malaise. Proteinuria, cylindruria and hematuria were gradually intensified. Other precipitating factors such as infection were excluded. We concluded that the basic problem was one of acute lupus crisis.

Manifestations of the crisis increased in severity on an attempt to decrease cortisone dosage, becoming extremely severe the fifteenth hospital day. Fever, clinical status and approximate dosage schedules from this to the twenty-first day of hospitalization are shown in tabular form. During this time the largest recorded dosages of cortisone were used (table). Her condition improved greatly although complete clinical remission was

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Hospital Day	Fever (Fahrenheit)	Cortisone		Condition
		Total Dosage	Schedule	
	Mean			
15	100 (98+ to 102.2)	250	q-4h-oral	Severe
16	102 (100.1 to 104.6)	350	q-4h-oral	Critical
17	103.5 (100 to 105.6)	900	q-3h-I.M.	Critical-moribund
18	101.1 (99.4 to 104.2)	1050	q-3h; q-2h-I.M.	Critical
19	101.8 (99.8 to 104)	2300	q-h-I.M.	Critical
20	98.7 (98 to 99.8)	1400	q-2h-q-1½h-oral	Improved
21	98.8 (97.6 to 100)	900	q-1½h-q-4h-oral	Partial remission

Mean and (in brackets) range of the daily temperature, dosage of cortisone and estimates of condition during acute lupus crisis.

not obtained. The cortisone requirement decreased after administration of nitrogen mustard.

### Discussion

The course followed by this patient illustrates dramatically the effectiveness of massive dosage therapy in the acute lupus crisis. A survey in this and in previously reported cases suggests an analogy with diabetic coma in which the only correct insulin dose is that which proves effective in bringing the disease under control. The tendency to think in terms of arbitrary cortisone dosage is as deplorable as in the case of insulin. Fear of large doses is based on the possible ill effects of hypercorticism. This should not be a deterrent in the acute lupus crisis where large doses are prescribed for a few days only where preliminary evidence<sup>3</sup> suggests that utilization of the hormone, presumably by the diseased tissue, prevents profound or injurious effects on normal tissue.

### Summary

A case of acute lupus crisis is described in which cortisone dosages ranging up to 2300 mg. daily were required to bring the condition under control. An analogy is drawn between cortisone in acute lupus crisis and insulin in diabetic coma. In each case the correct dose is that which proves to be effective.

### References

1. Haserick, J. R., Corcoran, A. C. and Dustan, H.: Massive doses of ACTH and cortisone in controlling acute crisis of systemic lupus erythematosus. J.A.M.A. (In press).
2. Haserick, J. R. and Bortz, D. W.: New diagnostic test for acute disseminated lupus erythematosus. Cleveland Clin. Quart. **16**:158 (July) 1949.
3. Corcoran, A. C., Dustan, H. and Page, I. H.: Enzymatically hydrolyzable formaldehyde-genic corticoids; normal values and observations on disease states. Tr. Am. Soc. Clin. Investigation (Abstract submitted).