CORTISONE IN THE TREATMENT OF REACTIONAL CONDITIONS IN TUBERCULOID LEPROSY

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INTRODUCTION

There have been numerous reports on the use of the adrenocorticotrophic hormone (ACTH) and of cortisone in the management of acute reactional conditions of leprosy. Although these hormones will alleviate the symptoms of lepra reaction, the condition usually flares up after their withdrawal. There is also a possibility that the underlying infection may be aggravated as a result of prolonged hormone treatment. For these reasons most authorities suggest that ACTH and cortisone should be used only in cases of drug sensitivity and for the management of complications involving the eye (1,3,4,5).

If, however, consideration is turned to the reactional state of the tuberculoid type of leprosy, a different situation is encountered. We have found only two references to the use of adrenal hormone in such cases. Lowe (5) states that he treated one case of reaction in tuberculoid leprosy with cortisone for a short period with considerable benefit. Dharmendra (1) reports two cases of reaction in tuberculoid leprosy treated for 8-10 days with good response. Doull and Wolcott (2), who have recently reviewed the situation, state that "further studies are required to determine whether these hormones can limit the nerve damage and the associated deformity" in reactions of the tuberculoid type.

MATERIAL AND METHODS

We have administered cortisone along with diaminodiphenyl sulfone (DDS) to about a dozen cases of tuberculoid leprosy in reaction. Cortisone given for a few days was sufficient to control the temporary exacerbation of edema and erythema which sometimes occurred after the institution of DDS therapy. In some patients, however, there was a much more marked and persistent reaction which required many weeks of hormone therapy in order to control the edema and erythema of the skin lesions. Seven cases of this type are reported here.

All of the patients in this series were observed in the "Special Skin Clinic" of the Rangoon General Hospital. All were of Burmese race and Buddhist religion. All were of the tuberculoid type in reaction. Their ages varied between 7 and 40 years, and 5 of

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the 7 were males. Scrapings from skin lesions were 1+ to 3+ positive for acid-fast bacilli. The nasal mucosa was negative in all but one instance, a patient (No. 6079) who had a large lesion involving the skin around and over the nose.

All of these individuals were under treatment with DDS at the time reactions occurred, in doses of 25 to 100 mgm. daily. This treatment was continued during the period of cortisone administration. In one case the dose of DDS was raised, and in another case it was decreased (see Table 1). The daily dose of cortisone and the duration of hormone therapy varied in each case. In general the dose was reduced when the edema and erythema of the skin lesions subsided, but increased again when there was a flare-up of the condition.

RESULTS

Details of the cases, and of the treatment and results, are given in Table 1. The data on the bacteriologic findings (in plus values) are as of the time of beginning of treatment. In general there had been a reduction of the numbers of bacilli in the smears at the end of the treatment periods (details not included in the table), so that the averages of the skin sites were 1+, against 2+ at the outset.

TABLE 1.—*Date of seven cases of reactions in tuberculoid leprosy treated with cortisone.*

Case No.	Sex and age (yrs.)	Duration (yrs.)	Bacilli in smears		Cortisone dosage (mgm.)			DDS dosage (mgm.)	Control of reaction
			Nose	Skin sites	Days	Maximal	Total		
6721	F, 15	3	—	2+, 1+, 2+	112	75	4,900	50–25	Yes[a]
6266	M, 12	2	—	2+, 1+, ?	54	12	788	25–50	Yes[b]
6831	F, 29	4	—	3+, 3+, 3+	39	100	3,900	50	No[a]
6697	M, 19	9	—	1+, 1+, 1+	93	100	5,850	50	Yes
6363	M, 7	2/12	—	2+, 3+, 2+	122	75	6,460	25	Yes
6241	M, 40	3/12	—	1+, 1+, —	24	50	775	100	Yes
6079	M, 15	3	1+	3+, 1+, 1+	115	100	5,655	50	Yes
AVE.	— 20	3	—	2+, 2+, 2+	80	75	4,000		

a Potassium antimony tartrate substituted.
b Potassium antimony tartrate employed for a subsequent reaction.

Four of the 7 patients showed satisfactory control of edema and erythema on cortisone and DDS; but the minimum period of cortisone therapy was 24 days, and most of the individuals were treated for 3 months. In one case (No. 6831) control with this therapy was not satisfactory, so treatment was changed to potassium antimony tartrate (PAT) after 39 days on 100 mgm. daily of cortisone. In another case (No. 6721) the patient complained of feverishness while on DDS and cortisone, and was therefore switched to cortisone plus PAT injections, and then to PAT plus calcium gluconate. Finally, there was one individual (No. 6266) who developed a second reaction about a month after cortisone had been discontinued, and he was then given PAT injections. The total dose of cortisone

required was less than 1 gm. with two patients, but approximately 5 gm. with the other five individuals.

One patient (No. 6241) developed discrete metastatic skin lesions after 10 days on cortisone and DDS. However, with continuance of this therapy the lesions rapidly subsided, and in a few weeks time they disappeared without leaving a trace. The numbers of bacilli in the skin lesions showed a tendency to decline during the period of special therapy. A remarkable feature was the complete absence of symptoms or signs of neuritis during the reaction, despite obvious evidence of nerve involvement. One patient (No. 6721) had a deformity of the hand before treatment was instituted, but there was no progression of the condition.

DISCUSSION

Although the edema and erythema of the skin lesions subsided much more rapidly under DDS and cortisone than when potassium antimony tartrate (PAT) were given, the period of time required before such therapy could be discontinued was longer than would have been expected had PAT injections been utilized. In view of this long period of cortisone administration there is the double disadvantage of expense and possibility of toxic effect. It is doubtful if the ultimate prognosis of the disease was in any way influenced by the hormone therapy, although from the clinical and bacteriological evidence it seems unlikely that there was any deterioration of the patients' condition. But the absence of neuritis during the course of these reactions treated with DDS and cortisone may be significant.

Perhaps the long period of hormone therapy was necessitated by the fact that DDS therapy was not discontinued. Lowe and Dharmendra did not comment on this phase of the subject, but it may be assumed that they discontinued DDS therapy as this is the usual practice when a reaction is suspected.

From the results which we have obtained one would be very chary about recommending DDS and cortisone for the treatment of reaction in tuberculoid leprosy, although the chief drawback to that treatment is the cost involved.

SUMMARY

Cortisone and DDS were used together in the treatment of reactions occurring in about a dozen cases of leprosy of the tuberculoid type. Seven severe cases were followed and reported. Two of these were changed to potassium antimony tartrate injections, and one was given that drug for a recurrence of the condition. The other four patients did not require additional treatment for the reaction.

In all but one case the edema and erythema could be controlled, but twelve weeks of treatment and an average total dose of four grams of cortisone were required. In addition to the improvement of the skin lesions, there was a slight reduction in the numbers of bacilli.

None of the patients developed an exacerbation of neuritis while on DDS and cortisone. There were no untoward reactions, but the relatively high cost of the treatment requires emphasis.

RESUMEN

Se usaron conjuntamente cortisona y DDS en el tratamiento de las reacciones observadas en una docena aproximadamente de casos de lepra de la forma tuberculoidea. Siete casos graves fueron mantenidos en observación y se describen acquí. En dos de ellos se cambió la medicación a inyecciones de tartrato de antimonic y potasio, y uno recibio esta droga para una recurrencia de la complicación. Los otros 4 enfermos no requirieron más tratamiento de la reacción.

En todos los casos, menos uno, pudieron dominarse el edema y el eritema, pero necesitándose para ello doce semanas de tratamiento y una dosis total media de cuatro gramos de cortisona. Además de la mejoría de las lesiones cutánetas, hubo una leve disminución de la cantidad de bacilos.

Ninguno de los enfermos manifestó exacerbación de la neuritis mientras recibía DDS y cortisona. No hubo reacciones adversas, pero hay que hacer hincapié en el costo relativamente alto del tratamiento.

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