

## ***The prevalence of cortico-steroid administration in the general population***

A survey by the Wessex Faculty of the Royal College of General Practitioners

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SINCE HENCH AND HIS COLLEAGUES described the beneficial effects of parenteral cortisone in 14 patients with rheumatoid arthritis, corticosteroids have been used for replacement therapy and the treatment of a variety of illnesses. Much has been written about steroids and their place in treatment, but no survey has been undertaken in the United Kingdom to determine the prevalence of oral and parenteral corticosteroid administration in the general population.

The Wessex Faculty of the Royal College of General Practitioners undertook such a survey for a six-month period in 1967. In addition this study noted the disease for which treatment was prescribed, the steroid given and the duration of treatment and the incidence of side effects.

### **Method**

Members and associate members of the Faculty were asked to complete a standardized *pro forma* for all patients to whom corticosteroids were prescribed during the six month period from 1 July to 31 December 1967—topical steroids were not included. On this *pro forma* were recorded the age and sex of the patient, the disease from which he or she was suffering and the type of steroid given. The duration of treatment was expressed as 'short term' when treatment was given for seven to 14 days, 'long term' when given for months or years and episodic when repeated short courses were given. Side effects were noted when they occurred, as was the family doctor or hospital consultant who initiated treatment. Patients who were issued with a 'steroid card' recording their treatment and the name and address of their family doctor and local hospital were included in the *pro forma*.

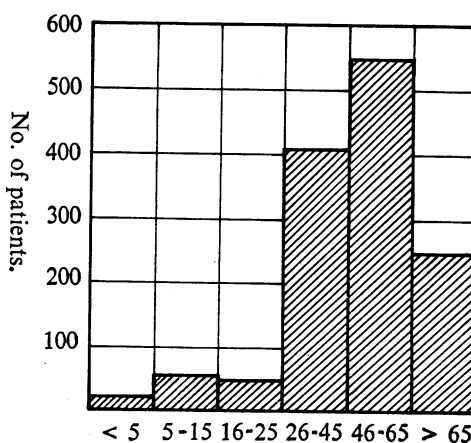
### **Results**

Ninety-one doctors took part in this survey. They were responsible for an approximate patient population of 248,256 and of these patients, 1,332 (0.04 per cent) received prescriptions for corticosteroids during the six-month period.

Seven hundred and forty-three patients were women and girls, and 584 were men and boys—in five cases the sex was unrecorded on the *pro forma*.

The age groups are shown in figure 1. Eleven patients were infants in the pre-school years 63 were children at school—five to 15 years, and 60 young adults and students. The remainder were adults of 26 years and more, and of the 927 were in the potential working adult group, 26 to 65 years. Two hundred and fifty-five patients were over 65 years of age. Seven patients had no age entered on the *pro forma*.

Sixteen patients were given corticosteroids as replacement therapy, and the remainder for a wide variety of illnesses as shown in table I. Chest conditions accounted for the greatest number of prescriptions—625—particularly



Age groups.  
Figure 1.

asthma and related conditions in which bronchospasm was a prominent feature. The collagen diseases represented another large group—356—with rheumatoid arthritis responsible for 312 of these. Table I also shows the duration of treatment prescribed in the various illnesses.

TABLE I

<i>Disease</i>	<i>Total</i>	<i>Long term</i>	<i>Short term</i>	<i>Episodic</i>
<i>Chest</i> .. ..	625			
Asthma .. ..		283	132	130
Sarcoid .. ..		11	1	0
Other .. ..		52	8	8
<i>Collagen</i> .. ..	356			
Rheumatoid arthritis ..		272	26	14
Others .. ..		37	6	1
<i>Skin</i> .. ..	99	34	50	15
Carcinoma .. ..	49	45	4	0
Leukaemia .. ..	18	17	1	0
Other blood .. ..	19	16	3	0
<i>Gastro-intestinal</i> .. ..	30			
Ulcerative colitis .. ..		17	3	6
Crohn's disease .. ..		4	0	0
<i>Kidney</i> .. ..	10	7	2	1
Hypoadrenal .. ..	16	16	0	0
Allergic .. ..	28	0	18	10

TABLE II

<i>Steroid</i>	<i>Total</i>	<i>Long term</i>	<i>Short term</i>	<i>Episodic</i>
Prednisone ..	559	358	126	75
Prednisolone (enteric coated)	412	262	96	54
Betamethasone	124	70	32	22
Triamcinalone	93	60	15	18

TABLE III

<i>Side effects</i>	<i>Total</i>
'Mooning' of face .. ..	56
Weight gain .. ..	28
Gastro-intestinal symptoms ..	30
Osteoporosis .. ..	11
Diabetes mellitus .. ..	7
Purpura .. ..	6
Hypertension .. ..	6
Recurrent infection .. ..	3
Stunting of growth (children) ..	3
Hirsutism .. ..	4
Cataracts .. ..	2
Acne .. ..	2
	158

Eight hundred and thirty-seven patients were receiving long-term treatment during the six months, 295 had one short course, and 188 had several short courses (in 12 patients the duration of treatment was not recorded). The most commonly prescribed corticosteroids are shown in table II, and were all oral preparations. Parenteral administration was not common, and only 64 patients were given steroids by injection—18 depot triamcinalone and 46 ACTH.

Side effects were common in patients on prolonged therapy but did not occur in those patients receiving short courses of treatment. One hundred and fifty-eight patients (16.4 per cent) on long term therapy showed side effects which are listed in table III. Facial 'mooning' and weight gain from fluid retention and abnormal fat deposition were the commonest, mostly in those patients taking prednisone and prednisolone. Seven patients died whilst this survey was taking place, but all died as a result of their illness and not as a complication of therapy.

Five hundred and seventy-three patients were started on corticosteroids by a hospital consultant and the remainder—785—by the family doctor. Of those whose treatment was initiated by a specialist, the condition was often severe, and the treatment prolonged.

Steroid cards were given to 700 patients on prolonged treatment.

### Discussion

During this six-month survey 0.4 per cent of the potential patient-population received prescriptions for corticosteroid therapy. In all cases the prescriptions were given for illnesses for which steroids were a recognized form of treatment, and there was no evidence that family doctors were more ready or more reluctant to give these drugs than their specialist colleagues.

Oral preparations were favoured over parenteral forms of therapy, and cortisone and hydrocortisone, the original therapeutic steroids, had been largely superseded by more recently developed steroids. Enteric-coated prednisolone was given to a large number of patients presumably to avoid gastro-intestinal upset but dyspepsia was almost as common on this

preparation as in those patients on prednisone.

Long-term therapy was given in patients with severe illnesses such as the collagen diseases, the blood dyscrasias and metastatic malignant disease, and short spells of treatment were reserved for acute conditions such as asthma and allergic reactions.

The incidence of side effects was high—16.4 per cent—in patients on prolonged therapy, but non-existent in this survey in patients receiving short courses. Weight gain from abnormal fat deposition and fluid retention was the commonest side effect, but seven developed overt diabetes mellitus at some time after starting prolonged therapy. In no case was death attributed to treatment, and considering the conditions for which steroids were prescribed withdrawal of treatment was not warranted when side effects occurred.

Steroid cards were issued to 84 per cent of patients on prolonged therapy which was a satisfactory feature as it is these patients which benefit from such a card when an emergency arises.

#### Summary

A survey into the prevalence of corticosteroid administration in the general population for a six-month period. The reasons for therapy, the type of steroid given and duration of treatment along with the incidence of side effects are recorded.

#### REFERENCE

Hench, P. S., Kendall, E. C., Slocumb, C. H., and Polley, H. F. (1949). *Proc. Mayo Clinic.* 24, 131.

### PERSONAL EXPERIENCE

## *Some medical problems of primitive Brazil*

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UNTIL RECENTLY I HAD LITTLE knowledge of South America and almost none of tropical disease. With the thought that there are probably many of us in the same boat, I have written a short account of a few days I have been privileged to spend in the interior of Brazil. Experts in tropical disease are advised to turn to the next article in the *Journal*.

I was on holiday in Salvador, when I met Ken Mott. Salvador is the old capital of Brazil, a city of three quarters of a million persons, of whom a few thousands are Europeans; I nearly said white, but no one is lighter than mid-brown in this sunny city, 13 degrees south of the Equator, where a blond head is a rarity.

Brazil was discovered about the year 1500 by the Portuguese, who defended it against all incursions by Spain, Holland, England and France. A bastard Portuguese tongue is spoken throughout the country, with variation of dialect and idiom, as great as that between Glasgow and Birmingham. The early settlers soon found that the fertile coast-line produced an excellent growth of sugar cane, coffee and cocoa, but that labour was scarce, for the indigenous Indian population was thinly scattered. The labour problem was solved by the importation of slaves from West Africa. Thus the population of the state of Bahia, of which Salvador is the capital city, consists of Indian, Portuguese, Negro and a sprinkling of other nationalities—as mixed as a box of liquorice allsorts.

There is an interchange of students between Cornell University, U.S.A. and the University of Bahia, at Salvador. When Dr Ken Mott was a student at Cornell he spent a year as an