

IS VITAMIN B₁₂ OF VALUE IN PSORIASIS?

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It is widely believed that injections of vitamin B₁₂ are of value in the treatment of psoriasis, and they are a popular remedy employed by some general practitioners and dermatologists, especially for resistant cases. This belief is based on little more than clinical impressions, and the only published controlled trial consisted of 23 patients and gave negative results (Alexander, 1957). Two other favourable reports concerned uncontrolled observations (Ruedemann, 1954; Cohen, 1958).

A double-blind controlled trial of unselected cases has therefore been conducted in this department to assess the value of this treatment.

The Trial

Seventy-three out-patients were carefully examined, the type and extent of the psoriasis being recorded. Only patients over the age of 12 years with uncomplicated psoriasis who were not clinically anaemic were included. Those who had recently received steroids or arsenic systemically (elsewhere) or who were pregnant or puerperal were excluded because of the particular instability of psoriasis in such circumstances. A course of 15 intramuscular injections was given (five days weekly for three weeks), the injections being either 1,000 µg. of vitamin B₁₂ (Glaxo) or a placebo of identical appearance prepared by the same manufacturers. Whether placebo or drug was given was unknown to both doctor and patient, the key being held by the pharmacist and allocation being made according to a random system devised by a statistician. An ointment was also prescribed for all patients consisting of the following ingredients:

Liq. pic. carb.	30 m (1.8 ml.)
Acid salicyl.	15 gr. (1 g.)
Soft paraffin	}	..	āā ad oz.
Ung. emulsif.			

Each patient was assessed at three weeks and six weeks. Thirty-five patients continued with the same ointment throughout the trial, but in 36 the ointment was changed after three weeks to a dithranol regime (19), a modified Goeckermann regime (11), or topical steroid therapy (6). One patient did not return for assessment either at three weeks or six weeks and a further patient did not return for assessment at six weeks; both are excluded from the trial. Patients were graded at three and six weeks into one of three categories: (1) clear or almost clear, (2) substantially improved, and (3) little or no change or worse.

Results

Table I shows that the two groups were initially similar, there are no statistically significant differences

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in sex ($\chi^2=0.38$, one degree of freedom), age (linear trend $\chi^2=1.73$, one degree of freedom), or severity (linear trend $\chi^2=1.12$, one degree of freedom). Table II shows that three-fifths of the patients were substantially improved or clear at six weeks, and that this figure is entirely unaffected by treatment with vitamin B₁₂. This is evident without formal statistical analysis.

Table III shows that for each of the additional treatments no benefit is obtained by the use of vitamin B₁₂. The established advantage of the dithranol regime is maintained whether or not vitamin B₁₂ is added.

Discussion

The numbers in this trial are not large and it would be of interest to mount a larger trial incorporating a group of patients receiving injections but no local therapy and another group receiving bland local therapy but no injections. However, we feel that the completely negative results of our trial do not justify such a survey.

It is of interest to assess the effect of vitamin B₁₂ in the different clinical grades and the effect of age and sex. It will be seen from Table I that vitamin B₁₂ therapy showed no identifiable advantage in either sex, in any age group, or in any severity group.

TABLE I.—Comparison of Results of Treatment in Various Subgroups

Sub-groups		No. Treated	Substantially Improved or Clear at	
			3 Weeks	6 Weeks
Males	B ₁₂	17	5	10
	Placebo	13	2	9
Females	B ₁₂	19	3	12
	Placebo	22	3	12
Aged 12-29	B ₁₂	10	3	8
	Placebo	14	3	8
Aged 30-49	B ₁₂	12	3	7
	Placebo	12	2	8
Aged Over 50	B ₁₂	14	2	7
	Placebo	9	0	5
Severe psoriasis	B ₁₂	6	2	4
	Placebo	5	1	4
Moderate psoriasis	B ₁₂	16	3	10
	Placebo	23	2	12
Mild psoriasis	B ₁₂	14	3	8
	Placebo	7	2	5

TABLE II.—Results of Treatment at 3 and 6 Weeks in the Two Groups

	Patients Treated with		Total
	Vitamin B ₁₂	Placebo	
No. of patients in each group	36	35	71
Patients substantially improved or clear at 3 weeks	8	5	13
Patients substantially improved or clear at 6 weeks	22 (61%)	21 (60%)	43

TABLE III.—Results of Treatment at 6 Weeks

Local Treatment	Injection	No. Treated	No. Substantially Improved or Clear at 6 Weeks
Local treatment unchanged throughout trial	B ₁₂	18	9
	Placebo	17	8
Dithranol regime after 3 weeks	B ₁₂	11	10
	Placebo	8	7
Goeckermann regime after 3 weeks	B ₁₂	5	2
	Placebo	6	4
Tonic steroids after 3 weeks	B ₁₂	2	1
	Placebo	4	2
Total		71	43

The local therapy used in the first three weeks with all patients cannot be regarded as entirely bland, but this was deliberate, as we felt the numbers of patients defaulting would thereby be diminished. In fact only two patients defaulted, and one of them attended at three weeks. For the same reason more potent local therapy was introduced at three weeks in approximately half the series, but since 18 of these received vitamin B₁₂ and 18 received the placebo any clear superiority of vitamin B₁₂ would be expected to assert itself. Actually the numbers of patients substantially improved or clear in these groups at six weeks were exactly the same—13 in each.

Conclusion

These results give no support to the belief that vitamin B₁₂ is of any value in the treatment of psoriasis whether combined with treatment with a bland ointment, a dithranol regime, or a modified Goeckermann regime.

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Investigations.—The serum albumin was 0.5 g./100 ml. and globulin 4.2 g./100 ml. On quantitative electrophoresis the α_2 fraction was elevated (1.59 g./100 ml.). Serum cholesterol was 440 mg./100 ml. and the blood urea 77 mg./100 ml. The blood picture was normal, but the E.S.R. (Westergren) was 85 mm. in one hour. In an antero-posterior radiograph of the abdomen the renal outlines were of normal shape and size; vascular calcification was observed in the iliac arteries.

Treatment was begun with chlorothiazide, mersalyl on alternate days, and potassium supplements. On January 10 a high-protein (200 g.), low-salt (0.5 g.) diet was instituted, together with the intravenous infusion of 400 g. of salt-poor human albumin over four days. As can be seen from the Table, this led to an initial diuresis together with an enormous loss of urinary protein. On January 14, prednisone 60 mg. daily was started, but by January 24 the patient's general condition had deteriorated, and the oedema increased, so that acupuncture was performed. Next day the patient died shortly after a sudden episode of chest pain and cyanosis.

Relevant Findings at Necropsy.—The left femoral vein contained some recent thrombus and a large embolus had

TABLE I

Date	24-hour Urine Volume (ml.)	24-hour Urine Protein (g.)	Serum Albumin (g./100 ml.)
January 11-12	3,250	70	1.62
" 12-13	2,000	56	1.64
" 13-14	2,050	78	1.32
" 14-15	2,420	98	
" 15-16	1,200	67	
" 16-17	2,020	33	
" 17-18	2,240	30	
" 18-19	1,480	35	
" 19-20	890	24	1.4
" 20-21	1,040	34	
" 21-22	880	24	
" 22-23	900	22	
" 23-24	960	20	0.97
" 24-25	330	10	

Medical Memoranda

Thrombosis in Abdominal Aorta Associated with Nephrotic Syndrome

The nephrotic syndrome may be due to lipid nephrosis or membranous glomerulonephritis, which are considered to be primary diseases of the kidney; or the syndrome may be the result of extra-renal or generalized disease. We believe the case described below is the first reported instance of occlusive disease of the aorta or renal arteries associated with the clinical manifestations of the nephrotic syndrome and the histological changes of lipid nephrosis.

CASE REPORT

A 73-year-old man was admitted to the Royal Perth Hospital on January 5, 1961, complaining of progressive swelling of both lower limbs and increasing shortness of breath for six weeks. He had suffered from a persistent productive cough for 10 years.

On examination the pulse was regular and the blood-pressure 140/90 mm. Hg. The jugular venous pressure was not raised, and the apex beat and heart sounds were normal. Numerous rales and rhonchi were audible in both lungs. Gross gravitational oedema and severe ascites were present. The femoral, posterior tibial, and dorsalis pedis pulses were absent on both sides.

The specific gravity of the urine varied between 1.006 and 1.030, and on testing with "albastix" "1,000 mg." of protein was consistently found.

impacted in the pulmonary artery to the right lower lobe with resulting segmental infarction. Advanced atheromatous changes were present in the aorta. A thrombus 25 cm. in length extended from 6 cm. above the origin of the renal arteries to the aortic bifurcation. It was adherent posteriorly and its average diameter was 2 cm. Extending down each lateral margin of the thrombus was a shallow gutter 2 mm. deep so placed that the origins of the renal arteries were fully patent (Figs. 1 and 2). The renal arteries, renal veins, and inferior vena cava were normal. The left kidney weighed 163 g. and the right 138 g. The difference in weight was due to a thick-walled cyst 2.8 cm. in diameter in the lower pole of the left kidney; otherwise they were similar. The cut surfaces were pale reddish-brown with indistinct cortico-medullary markings, and the average cortical width was 5 mm. The capsules stripped readily, revealing generally smooth surfaces with only a few small U-shaped indentations along the convexities. The ureters and pelves were normal.

Histological Findings.—In the lungs there were changes of pulmonary infarction, chronic bronchitis, and some bronchopneumonia. Section of the aorta above the renal arteries revealed severe ulcerative atheromatous change and an overlying thrombus with moderately advanced organization at its adherent base. The age of the granulation tissue invading the thrombus was estimated to be at least six weeks. The changes in both kidneys were alike. A few glomeruli were sclerosed, but the only other glomerular change noted was moderate thickening of capsular basement membranes. The capillary basement membranes were normal. The proximal tubules showed a large amount of fat (Fig. 3). The distal and collecting tubules contained occasional hyaline casts. The small arteries showed some intimal proliferation, but the afferent arterioles were normal. There were no thrombi in the renal venules.