INTESTINAL CHANGES IN PATIENTS WITH CHRONIC EXTENSIVE DERMATOSES

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Summary

15 cases of psoriasis, 7 cases of eczema, one each of subcorneal pustular dermatosis and pityriasis rubra pilaris and 10 normal controls were studied for functional and structural changes of small bowel. Except for 2 patients of psoriasis, all patients showed normal faecal fat excretion. D-xylose excretion was decreased in one patient of dermatitis-eczema group and one of subcorneal pustular dermatosis. Grade II jejunal mucosa was seen in only 4 patients with psoriasis and 2 cases of dermatitis-eczema and one patient of subcorneal pustular dermatosis. The present study does not support the concept that there can be direct correlation between malabosorption and certain dermatoses, except in a very small percentage of cases. Even in such cases, functional and structural changes are of very mild degree.

An association between malabsorption and dermatoses has been known since long[1],[2] and skin disease was always thought to be secondary to intestinal pathologhy.

Shuster and mark[3] were the first to introduce the concept of "Dermatogenic Enteropathy" following their observation that steatorrhoea in patients with extensive skin disease improved with the cure of skin condition alone. The steatorrhoea was considered secondary to skin disease. Functioal and structural changes of small gut in psoriasis, eczema and other dermatoses reported by Shuster et al[4], Mark and Shuster[5] and Roberts Preston[6] were contradicted by Correia et al[7] and Preger et al[8].

The present communication deals with the study of intestinal structure and absorptive functions in patients with chronic extensive dermatoses.

Material and Method

Material for the study consisted of the following :—

Psoriasis	15 cases
Dermatitis eczema	7 ,,
Subcorneal pustular dermatosis	1 ,,
Pityriasis rubra pilaris	1 ,,
Total	24 ,,

In addition, 10 normal subjects were investigated as control. These people had no evidence to suggest any gastrointestinal or systemic disease.

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The diagnosis was made on clinical grounds and confirmed by histopathology of skin wherever necessary. All the patients were interrogated for history of diarrhoea, bulky, frothy and foul smelling stools. History of milk intolerance and nutritional status were particularly noted. Treatment, local as well as systemic, was withheld during the period of study in all cases.

Following investigations were undertaken in all the patients :—

1. Blood–Hb%, T.S.C., D.L.C., serum proteins, both total and differential.
2. Urine and stool–routine examination.
3. Tests to find out the functional and structural changes in the small intestine :—

(a) D-Xylose excretion test

Roe and Rice[9] method was employed for the estimation of urinary D-xylose. Urinary excretion of D-xylose less than 1g/5 hour after an oral dose of 5g was considered abnormal.

(b) Faecal fat estimation

Faecal fat estimation was done by the method of Van-de-Kamer[10] for three consecutive days while the patient was on 100g. fat diet daily. An average excretion of more than 5g/24 hours was taken as abnormal.

(c) Jejunal biopsy

Jejunal biopsy was performed by Roy Choudhury Capsule[11] under fluoroscopic control. The biopsy material was gently spread on a filter paper in such a way that villous surface faced upwards. It was then transferred to a bottle containing 10% buffered neutral formalin. Biopsy material was later embedded in paraffin, sectioned, stained with haematoxylin and eosin and studied under light microscope.

The histological appearances were graded as follows :

Grade I

Tall slender and branched villi were predominantly present. Few villi in some sections were short and broad. Their brush border was regular with basally situated nuclei of lining cells. Mild to moderate infiltrate consisting predominantly of plasma cells and lymphocytes was present in lamina propria.

Grade II

Although few villi were tall, most of them where shortened, broadened and clubbed at their tips. The cells lining these villi showed some irregularity at places and nuclei placed irregularly. The cellular infiltrate which consisted predominantly of plasma cells and lymphocytes was moderate to severe.

Grade III

Blunting and fusing of villi was more advanced than in grade II.

Observations

The age of patients ranged from 16 to 70 years. 22 patients were males and 2 females. Total duration of disease in all patients varied from 2 months to 17 years (Table I). No patient gave history of diarrhoea or bulky, frothy and foul smelling stools. History suggestive of milk intolerance was absent in all the patients. Almost all cases were taking diet which was adequate quantitatively as well as qualitatively.

TABLE I

Showing total duration of lesions in different dermatoses.

Duration in years	Patients of psoriasis	Patients of dermatitis-eczema	Patients of other dermatoses	Total
2/12–1	6	5	1	12
2–15	3	2	–	5
6 and above	6	–	1	7
Total	15	7	2	24

The percentage of skin involvement ranged from 50-100% of body surface (Table 2)

TABLE 2

Showing extent of body surface involvement in different dermatoses.

Extent of involvement in percentage of body surface	Patients of psoriasis	Patients of dermatitis-eczema	Patients of other dermatoses	Total
50–75	9	4	2	15
76–99	5	1	–	6
100	1	2	–	3
Total	15	7	2	24

Haemoglobin ranged from 7–14 gm%. In 8 patients, it was less than 10 gm%. Serum proteins were within normal limits except in 4 cases of psoriasis and one of dermatitis eczema group who showed reversal of albumin / globulin ratio.

D–xylose excretion

D-xylose excretion was decreased in one patient of dermatitis-eczema group and one case of sub–corneal pustular dermatosis (Table 3).

TABLE 3

Showing D-xylose excretion in different dermatoses. D-xylose excretion was normal except in one case each of dermatitis-eczema group and other dermatoses.

D-xylose excretion in grams/5 hrs.	Patient with psoriasis	Patients with dermatitis eczema	Patients with other dermatoses	Normal subjects
Less than 1.0	—	1	1	—
More than 1.0	15	6	1	10
Total	15	7	2	10
Mean	1.46	1.69	0.75	1.74

Faecal fat excretion

Except 2 patients of psoriasis, all had normal faecal fat excretion value (Table 4).

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Showing faecal fat excretion in different dermatoses. Faecal fat excretion was more than 6g/24 hours stool in only 2 cases of psoriasis

Amount of fat excreted / 24 hours stool	Patients with psoriasis	Patients with dermatitis-eczema	Patients with other dermatoses	Normal subjects
Less than 6g	13	7	2	10
More than 6g	2	—	—	—
Total	15	7	2	10
Mean	4.34	4.07	4.4	2.43

Jejunal biopsy

Table 5 shows histological findings of jejunal mucosa studied in various dermatoses. 4 patients of psoriasis, 2 cases of dermatitis–eczema group and one patient of subcorneal pustular dermatosis showed grade II changes (Fig. 1 Page No. 91). Histological changes were of grade I in all other patients (Fig. 2 Page No. 91).

TABLE 5

Showing histological examination of jejunal mucosa. Grade II changes were seen in seven cases of different dermatoses. None showed Grade III changes.

Jejunal histology	Patients with psoriasis	Patients with dermatitis-eczema	Patients with other dermatoses	Total
Grade I	11	5	1	17
Grade II	4	2	1	7
Grade III	—	—	—	—

The haematological and nutritional status of the 10 control subjects was comparable to normal population of Northern India. D-xylose excretion and faecal fat excretion values of 10 controls are shown in Tables 3 & 4.

Discussion

The results of the present study do not show any significant functional or structural abnormalities of small bowels in patients with extensive chronic dermatoses.

There is a great variation in small bowel mucosal structure of normal population[5]. In view of common occurrence of convoluted mucosal changes in normal Indian population[12,13], the mucosal changes observed in 4 patients of psoriasis. two patients of dermatitis-eczema group and one case of sub-corneal – pustular dermatoses can be considered as within normal limits. Decreased d-xylose excretion seen in one patient of dermatitis-eczema group and one case of sub-corneal-pustular dermatoses corroborates the findings of Fry et al[14]. However, Doran et al[15] reported this abnormality in 16 out of 39 patients with dermatitis. None of the patients in psoriasis group showed any abnormality of d-xylose excretion. These results are in agreement with those of Correia et al[7] and Preger et al[8]. Steatorrhoea seen in only 2 cases of psoriasis was mild. No correlation between the abnormal d-xylose excretion and steatorrhoea could be established. Similar observations had been made by Doren et al[15]; Preger et al[8] and Barry et al[16]. However, Mark and Shuster[5] found steatorrhoea in about one third of their patients of eczema and psoriasis. They even demonstrated a correlation between the severity of steatorrhoea and extent of skin lesions, but did not find significant small intestinal mucosal changes in their patients. Such gross differences in the observations could be explained on the basis of difference in diet, intercurrent diseases, mode of treatment and genetic constitution of two populations.

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