EFFECT OF BRONCHIAL ASTHMA ON PORPHYRIN LEVELS IN PATIENTS OF ATOPIC DERMATITIS — A SPECTROPHOTOMETRIC STUDY

R. L. SINGH,* F. HANDA † AND K. S. SIDHU ‡

Summary

A quantitative assay of porphyrins in blood, urine and stool of 30 patients with atopic dermatitis, 17 without and 13 with bronchial asthma, was done Rimington's technique for the estimation of porphyrins was employed. No statistically significant difference in porphyrin levels was observed between patients without and with bronchial asthma.

Prophyrins are the by-products of haemoglobin synthesis. These are cyclic compounds capable of selectively absorbing large amounts of solar energy in the 400 nm range. This absorbed energy is then transferred to adjacent areas producing cellular damage. Increased porphyrin excretion has been found in many photosensitive dermatoses. In 1978, Anandam, K. reported increased excretion of porphyrins in urine and faeces of patients with pellagra. Similarly Kesten and Slatkin reported porphyrinuria in pellagral patients. Atopic dermatitis is known to occur on light exposed areas with photosensitivity in some cases. Moreover there is bronchial asthma in many patients with atopic dermatitis. This prompted us to look for any effect of bronchial asthma on porphyrin levels in blood, urine and stool in patients with atopic dermatitis.

* Registrar, Department of Skin & VD, Govt. Medical College, Patiala.
† Prof & Head, Department of Skin & VD, Govt Medical College, Patiala.
‡ Professor of Chemistry, Punjabi University, Patiala

Received for Publication on 5—11—1979

Material and Methods

Rimington's method was employed for the estimation of prophyrins in blood, urine and stool.

Thirty patients with atopic dermatitis, 13 with and 17 without bronchial asthma, were selected for the present study. Cases with history of liver disease or consumption of hepatotoxic drugs were excluded. Porphyrin estimation was done in dark room with all the necessary precautions.

Observations

The results were analysed and tabulated as given herein.

Discussion

Table No. 1 shows that the values of Mean and S.D. for erythrocyte coproporphyrin in patients without bronchial asthma were 1.458 and 1.267 while in patients with bronchial asthma they were 2.053 and 0.845 respectively. On comparison the 't' value was 1.461 which is insignificant statistically. The

TABLE 1
Showing blood porphyrins in patients without and with bronchial asthma in ug per 100 ml. erythrocyte

Group	No. of cases	Range	Mean	S. D.	S. E.
		Erythrocyte Coproporphyrin			
Without B. Asthma	17	0 — 4 940	1.458	1.267	0.307
With B. Asthma	13	0.931 — 3.780	2.053	0.845	0.234
		Erythrocyte Protoporphyrin			
Without B. Asthma	17	5.230 — 21.960	12.397	5.040	1.222
With B. Asthma	13	3.710 — 23.530	8.741	5.169	1.433

TABLE 2
Showing urinary porphyrins in patients without and with bronchial asthma in ug/24 hrs.

Group	No. of cases	Range	Mean	S. D.	S. E.
		Urinary Coproporphyrin			
Without B. Asthma	17	14.330 — 96.800	44.091	24.303	5.894
With B. Asthma	13	16.150 — 55.650	34.372	14.936	4.143
		Urinary Uroporphyrin			
Without B. Asthma	17	0 — 10.530	2.755	3.614	0.876
With B. Asthma	13	0 — 9.140	2.443	3.113	0.863

values of Mean and S.D. for erythrocyte protoporphyrins in patients without bronchial asthma were 12.397 and 5.040 while in patients with bronchial asthma they were 8.741 and 5.169 respectively. On comparison the 't' value was 1.947 which is statistically insignificant.

Table No. 2 shows that the values of mean and S.D. of urinary coproporphyrin in patients without bronchial asthma were 44.091 and 24.303 while in patients with bronchial asthma they were 34.372 and 14.936 respectively. On comparison the 't' value was 1.267 which is insignificant statistically. The values of mean and S.D. of urinary uroporphyrin in patients without bronchial asthma were 2.755 and 3.614 while in patients with bronchial asthma they were 2.443 and 3.113 respectively. On comparison the 't' value was 0.248 which is statistically insignificant.

Table No. 3 shows that the values of mean and S.D. of faecal coproporphyrin in patients without bronchial asthma were 2.116 and 1.201 while in patients with bronchial asthma they were 2.206 and 1.426 respectively. On comparison the 't' value was 0.187 which is insignificant statistically. The values of mean and S.D. of faecal protoporphyrin in patients without bronchial asthma were 5.994 and 3.857 while in patients with bronchial asthma they were 8.766 and 4.388 respectively. On comparison the 't' value was found to

TABLE 3

Showing faecal porphyrins in patients without and with bronchial asthma in ug per gm, dry weight

Group	No. of cases	Range	Mean	S.D.	S.E.
		Faecal Coproporphyrin			
Without B. Asthma	17	0.805 — 5.400	2.116	1.201	0.291
With B. Asthma	13	1.070 — 5.820	2.206	1.426	0.300
		Faecal Protoporphyrin			
Without B. Asthma	17	1.470 — 16.330	5.99	3.857	0.935
With B. Asthma	13	2.890 — 15.300	8.766	4.388	1.217

be 1.838 which is statistically insignificent.

Conclusion

Porphyrin levels in blood, urine and stool of 17 patients with atopic dermatitis without bronchial asthma were compared with those of 13 patients with atopic dermatitis with bronchial asthma. No statistically significant difference was observed in porphyrin levels in the patients without and with bronchial asthma.

References

1. Anandam K : Estimation of porphyrins in pigmentary anomalies, Indian J Dermatol Venereol Lepr, 44 : 338, 1978.
2. Kesten BM, Slatkin M : Diseases related to light sensitivity, Arch Derm, 67 : 284, 1953.
3. Rimington C : Association of clinical pathologists broad-sheet 70 (Revised broadsheet No. 36), 1971.

IX Annual Conference of
Indian Association of Dermatologists, Venereologists and Leprologists
at Indore
on January 8-10, 1981

CONTACT DERMATITIS DUE TO SHAVING CREAMS

J. S. PASRICHA AND SURESH PANJWANI

Summary

Thirteen cases of contact dermatitis due to shaving creams are being reported to highlight the clinical features, diagnosis and management of this disease.

Contact dermatitis due to shaving creams is one of the principal causes of cosmetic dermatitis in men[1], but the condition is likely to be misdiagnosed if the dermatologist is not aware of this possibility. The present report is meant to highlight the salient features of this disorder, since some patients have been seen to continue to suffer on this account.

Clinical Data

During a period of approximately two years, 13 patients having contact dermatitis due to shaving creams were seen at the Allergy Clinic, All India Institute of Medical Sciences. All the patients were adult males, used to shaving their beards for variable periods before the onset of their symptoms. They were using different commercial brands of shaving creams. The clinical picture generally consisted of itching, erythema, papulo-vesicular and crusted or scaly lesions present all over the beard region including the moustache unless the patient was not shaving the moustache. In some cases, the ear lobules and naso-labial folds were also involved. The dermatitis cleared in all the patients following discontinuation of further use of shaving creams.

The diagnosis was confirmed in all the cases by patch tests with shaving creams. Each patient was tested with six common commercial brands of shaving creams. Eleven of the 13 patients were hypersensitive to all the six brands, while the remaining two patients were hypersensitive to five brands each. Patch tests with lanoline were negative in all the cases. Three patients were patch tested with sodium alkyl sulphate and sodium lauryl sulphate. Only one patient was found to be hypersensitive to both the substances while the remaining two gave negative results.

Discussion

Contact dermatitis due to shaving creams is most frequently misdiagnosed as sycosis barbae because the lesions of both these diseases are located in the same region. The lesions of sycosis barbae however, consist of erythematous papules or pustules, are located at the hair follicles and occur only in those areas which bear coarse terminal hairs. Contact dermatitis on the other hand, usually manifests as small papules, papulo-vesicles and crusting, the lesions are as a rule non-follicular

Department of Dermato-Venereology,
All India Institute of Medical Sciences,
New Delhi-110029

Received for publication on 6—10—1979