A PROFILE OF PORPHYRINS IN CASES OF DISCOID LUPUS ERYTHEMATOSUS

C Jain, F Handa and K S Sidhu

Porphyrin levels in nineteen cases of discoid lupus erythematosus were compared with porphyrin levels in ten controls using Rimington's technique. The erythrocyte protoporphyrin, urinary uroporphyrin and faecal coproporphyrin and faecal protoporphyrin were found to be significantly raised as compared to the controls.

Key words : Porphyrin analysis, Discoid lupus erythematosus.

Porphyrins, the by-products of haemoglobin synthesis, are capable of selectively absorbing large amounts of solar energy in the range of 400 nm. This absorbed energy is then transferred to adjacent tissues producing cellular damage. Increased porphyrin excretion has been found in many photosensitive dermatoses. The role of sunlight in the induction and exacerbation of lupus erythematosus has been reported over a period of several decades. This study was undertaken to find out if there is any derangement in porphyrin metabolism in cases of discoid lupus erythematosus which could be contributory to the causation of the disease.

Material and Methods

Nineteen patients with discoid lupus erythematosus were chosen. Their ages varied from twenty to sixty years. Thirteen patients were females and six were males. The criteria for the selection of the cases were based on clinical and histopathological features. Clinically, cases with only skin manifestations and no systemic signs and symptoms were selected. Routine blood, urine and stools examination were done to rule out systemic abnormalities. Rimington's method[1] was employed for the quantitative estimation of porphyrins in blood, urine and stools.

From the Department of Skin and V.D., Government Medical College, Patiala and Chemistry Department, Punjabi University, Patiala.

Address correspondence to : Dr. F. Handa.

Results

The levels of different porphyrins are shown in table I. There was a statistically significant increase in erythrocyte protoporphyrin, urinary uroporphyrin, faecal coproporphyrin and faecal protoporphyrin in patients of discoid lupus erythematosus.

Comments

El Mofty[2] reported abnormal porphyrin metabolism in cases of lupus erythematosus with some signs and symptoms indicative of systemic involvement. Hetherington[3] reported two cases of chronic discoid lupus erythematosus associated with porphyria cutanea and reviewed the literature of thirteen cases of association of lupus erythematosus with porphyria. David[4] found co-existent systemic lupus erythematosus with porphyria. Anandam[5] studied porphyrin excretion in urine and faeces of nine cases of discoid lupus erythematosus. He reported marginal increase of urinary uroporphyrin and faecal coproporphyrin. However, this study lacked the estimation of levels of erythrocyte porphyrins. Our data indicates that there is abnormal porphyrin metabolism in chronic discoid lupus erythematosus.

Table I. Porphyrin levels in DLE patients and controls.

Group	Range	Mean±S.D.	Statistical significance
Erythrocyte coproporphyrin (in μg per 100 ml erythrocytes)			
DLE	0.934—20.332	3.055±4.334	Insignificant
Controls	0.389—2.574	1.024±0.710	
Erythrocyte protoporphyrin (in μg per 100 ml erythrocytes)			
DLE	2.400—31.592	10.923±7.835	Significant
Controls	1.839—12.321	5.251±3.576	
Urinary coproporphyrin (in μg per 24 hours)			
DLE	9.948—101.939	44.616±28.527	Insignificant
Controls	8.678—116.309	51.423±29.786	
Urinary uroporphyrin (in μg per 24 hours)			
DLE	4.712—21.565	12.185±5.334	Significant
Controls	0.957— 9.733	4.976±3.296	
Faecal coproporphyrin (in μg per gm dry weight)			
DLE	1.697—9.452	4.214±2.295	Significant
Controls	0.833—4.036	2.007±0.968	
Faecal protoporphyrin (in μg per gm dry weight)			
DLE	3.326—21.200	10.308±5.035	Significant
Controls	3.662— 9.014	6.063±1.948	

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