

SERUM PROTEINS IN FOLLICULITIS ET ATROPHICANS *

K. RAMACHANDRAN, M. I. JOY AND P. SUGATHAN

Summary

Total number of 50 cases were studied. The present study shows the occurrence of Hypergammaglobulinemia in Folliculitis et Atrophicans. The increase in Gammaglobulins could not be correlated with the severity of the disease. Amino acid composition of this gammaglobulin fraction was identical with that of normal serum gammaglobulins. Part of the increase in serum proteins was found to be due to an increase in serum mucoproteins.

Introduction

Symmetrical, pruritic, follicular pustules of the legs associated with varying degree of alopecia and atrophy was first reported by Clarke¹. This condition was later called as "Nigerian shin disease" by Harman². Hypergammaglobulinemia and therapy resistance occurring together in this condition was reported by Desai et al³. This unusual relation prompted us to study the nature of serum proteins particularly the Gamma globulins in this condition.

Materials and Methods

Patients: 50 patients both male and female in the age group of twenty to forty were included in the study. The duration of the disease in all these varied from two to twelve years. All of them were nutritionally well nourished and were not suffering from any other dermatological or other disorders.

Control Group consisted of 10 healthy persons of same age group and sex.

Methods: Serum total protein estimation was carried out by the Kjeldahl Nesslerization method and serum paper electrophoresis as described by Varley⁴. Serum mucoproteins and glutamic pyruvic transaminase were estimated by the methods of Winzler⁵, Reitman and Frankel⁶.

Results and Discussion

The mean values of the serum protein fractions are given in Table I. There is a significant increase in Gammaglobulin and a slight increase in total proteins compared to the healthy subjects. Increase in Gammaglobulins could not be correlated to the severity of the disease which is in agreement with the results reported by Desai et al³. Failure to respond to therapy in presence of Hypergammaglobulinemia with all available antibiotics suggested that this gamma globulin may be devoid of any immune activity. Hydrolysis of this Gammaglobulin fraction with six normal hydrochloric acid and subsequent amino acid analysis revealed no difference from normal. In order to

* Presented at the XVI Annual Conference of Indian Association of Dermatologists, Venereologists and Leprologists at Udaipur, in January 1973.

Department of Biochemistry, Dermatology and Venereology, Medical College, Kottayam.

Received for Publication on 17-2-1973

TABLE I

Serum protein (g/100 ml) Folliculitis and Normals

Constituent	Folliculitis (50)	Normal (20)	P. Value
Total protein	7.3 ± 0.4	6.6 ± 0.2	0.05
Globulins	0.13 ± 0.03	0.16 ± 0.02	0.1
Globulins	0.39 ± 0.05	0.38 ± 0.04	0.4
Globulins	0.51 ± 0.07	0.66 ± 0.06	0.1
Globulins	1.8 ± 0.2	1.4 ± 0.2	0.02
A/G ratio	1.6 ± 0.2	1.5 ± 0.2	0.1

Values are means ± S. D. Values in parenthesis show the number of cases studied.

rule out any possibility of chronic liver disease for the possible cause of elevation of globulins, serum GPT levels were determined in all subjects. But the results were normal and were in agreement with control group suggesting absence of any liver involvement in any of the folliculitis patients.

The outstanding clinical feature involving the alopecia and atrophy of the skin suggested the involvement of mucoproteins which is common in membranous connective tissue. The results of the serum mucoproteins are presented in Table 2. The magnitude of increase in mucoproteins could not

be correlated with the increase in Gammaglobulins as seen on paper electrophoresis. It may be suggested that this increase in the mucoproteins might have resulted from the breakdown products of membranous connective tissue.

TABLE II

Serum mucoproteins (mg/100 ml) Folliculitis and Normals

	Folliculitis	Normal
Number studied	16	8
Mucoproteins	132 ± 26 (72-213)	73 ± 18 (45-98)

Values are means ± S. D. Values in parenthesis show the range.

REFERENCES

1. Clarke GHV: A note on dermatitis crasis pustulosa et atrophicans, Trans. R. Soc. Trop Med Hyg, 46 : 558, 1952.
2. Harman, RRM: Dermatitis crasis pustulosa et atrophicans. The Nigerian Skin Disease, Brit J Derm. 80 : 97, 1968.
3. Desai SC: Shah BH, Modi PJ et al, Therapy resistant pyrogenic folliculitis on legs in the adult males with Hypergammaglobulinemia, Indian J Derm Vener, 30 : 89, 1964.
4. Varley H: Practical Clinical Biochemistry. ELBS and William Heinmann Medical Books Ltd., UK 1969, p. 246.
5. Winzler RJ: Methods in Biochemical Analysis, Interscience Pub., New York, Vol. II, 1955, p. 270.
6. Reitman S and Frankel S: A calorimetric method for the determination of serum glutamic oxalacetic and glutamic pyruvic transaminases, Amer. J. Clin Path, 28 : 56, 1957.