SERUM CHOLESTEROL IN SKIN DISORDERS

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Summary

Serum cholesterol studies were conducted in 326 patients suffering from various skin disorders and compared with the serum cholesterol levels of normal Kashmiris. A significant fall in the serum cholesterol levels in all the disease groups studied was observed. The results are in agreement with similar studies conducted in Gujaratis[3].

The skin represents one of the most extensive organs of the body and possesses varied physiological functions. Lipids play an important role in several functions of the skin[1]. A number of factors like age, sex, dietary habits, environmental and racial factors are known to influence serum cholesterol levels. The essential etiological and pathogenic factors in many skin diseases are not known. However, it has been reported that the cholesterol distribution in the skin may vary under various metabolic processes[2]. That psoriasis is associated with disturbed lipid metabolism has been postulated[3]. Elevated serum cholesterol levels have been reported in acne and xanthomas[4,5]. On the other hand low serum cholesterol levels have been reported in certain skin diseases[3].

The present study was undertaken in view of controversial and scanty reports regarding serum cholesterol levels in skin diseases; to verify any alteration of this lipid in various skin diseases in Kashmir; which has a different social, geographical. dietary and climatic environment, from the rest of the country.

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Material and Methods

Patients attending the Dermatology Out-Patients Department of the Government Medical College, Srinagar were the subjects of study. Only those patients were included who had no signs of any disease known to alter the serum cholesterol. Pregnant and menstruating women were also excluded from the study and so were patients on drugs and special dietary regimes. The diagnosis of the various skin diseases was based primarily on clinical findings, supplemented with laboratory tests, including skin biopsies where needed. The patients were instructed to come fasting on the morning of the test day. The blood samples were collected between 10 a.m. to 12 noon. The serum cholesterol was estimated by Henly's method[6] and the results statistically analysed. These levels were compared with normal controls for Kashmiris[7].

Results

A total number of 326 patients were studied. Their disease distribution is shown in Table 1. The percentage of patients in each disease group at diffe-

TABLE 1

1.	Psoriasis	86
2.	Vitiligo	55
3.	Scabies	22
4.	Herpes Zoster	23
5.	Acne Vulgaris	39
6.	Pyoderma	11
7.	Tinea Versicolor	27
8.	Infective eczema	17
9.	Seborrhoeic Dermatitis	4
10.	Tinea Capitis	7
11.	Contact Dermatitis	16
12.	Pellarga	8
13.	Exfoliative Dermatitis	2
14.	Hansen's Disease	9
	Total	326

rent serum cholesterol ranges is depicted in Table 2. In the present study it was observed that the serum cholesterol levels in all the diseases studied, was significantly lowered as compared with the normal control levels (230 mgm/100 ml). A comprehensive record of the mean serum cholesterol levels, their S. D. and P values for various skin diseases are given in Table 3.

Discussion

The present study has shown that the serum cholesterol levels fall in skin diseases. This agreed with the earlier finding of Verma[3], who also reported significantly low serum cholesterol level in a number of skin diseases in Gujaratis. However, he found no significant change in seborrhoeic dermatitis, while the present study did record significantly low levels in this skin disorder also. In contradiction to the findings of Gross and Kestan[4], the serum cholesterol was found to be low in acne vulgaris in the present study. Similar finding was reported by Verma[3]. Thus it is concluded that skin disorders may be associated with a lowered lipid metabolism except in xanthomas. It would be worthwhile to follow up these studies with more detailed biochemical and histochemical investigations in order to establish the fundamental defect producing such alterations in blood lipid chemistry. It would also be interesting to find out any correlation between patients suffering from skin diseases and coronary heart disease, where hypercholesterolaemia is a major predisposing factor.

TABLE 2

Showing Different Ranges of Serum Cholesterol Levels and the Percentage of Cases Against each in various Skin Diseases.

Serum cholest. in mgm/100 ml.	Vitiligo.	Psoriasis	Scabies.	Herpes Zoster	Acne Vulgaris	Pyoderma	Tinea versicolor	Infective Eczema	Seborrhoeic dermatitis	Tinea capitis.	Contact dermatitis	Pellagra	Hansens disease.	Exfoliative dermatitis.
Below 120	—	6	—	4	—	—	—	—	—	—	6	25	11	—
121—140	13	12	28	18	13	18	15	12	25	14	6	38	11	—
141—160	54	44	32	53	43	37	41	53	75	58	50	—	22	—
161—180	22	26	32	13	36	27	37	29	—	—	—	25	45	50
181—200	7	6	4	4	8	18	7	6	—	14	6	—	11	—
201—220	2	3	4	4	—	—	—	—	—	14	13	—	—	50
Above 220	2	3	—	4	—	—	—	—	—	—	19	12	—	—

TABLE 3

Showing the Number of Cases, the Mean Serum Cholesterol Levels in mgms/100 ml B.D. and P Values in Various Skin Disorders

	Vitiligo	Psoriasis	Scabies	Herpes-Zoster	Acne vulgaris.	Pyoderma	Tinea versicolor	Infective eczema	Seborrhoeic dermatitis	Tineacapitis.	Contact dermatitis	Pellagra	Hansens disease	Exfoliative Derm.
No. of cases	55	86	22	23	39	11	27	17	4	7	16	8	9	2*
Mean serum cholesterol level	159	159	154	158	158	157	160	159	154	159	181	165	159	188
S. D.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0 01	0.01	0.01	0 01	0.01	0.01	—

* Exfoliative dermatitis could not be statistically analysed due to small samples size, however, the mean values do show a reduction.

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