PITYRIASIS VERSICOLOR—AN ANALYSIS OF 175 PATIENTS

Bhushan Kumar, Inderjeet Kaur and Surrinder Kaur

Data on 175 patients having pityriasis versicolor is analysed. The age range was 5 weeks to 66 years. All classes of population were equally affected. The commonest sites of involvement were neck, chest, back, abdomen and face. Local symptoms were observed in a considerable number of patients. Disease was present in many first degree relatives. No association with any particular disease emerged. The frequency or length of remissions was not affected by any treatment in the past.

Key words : Pityriasis versicolor, Pityrosporum orbiculare, Immuno-suppression, Cushing's syndrome, Annular lesions, Flexural involvement.

Pityriasis versicolor caused by *Pityrosporum orbiculare*, usually presents no more than a cosmetic problem and has attracted interest mainly because of the difficulties experienced in its eradication and culture of the organism in the laboratory. It seems likely that there is a shift in the host/parasite relationship in favour of this autochtonous skin flora in most patients having pityriasis versicolor. Factors contributing to the altered state are probably multiple[1] such as, malnutrition, serious ill health, immuno-suppression caused by disease or drugs, malignancy and pulmonary tuberculosis etc. The increased incidence in Cushing's syndrome (spontaneous or iatrogenic) is well recognised[3]. Pregnancy and oral contraceptives may increase susceptibility, but documentation is lacking. Attempts to explain enhanced susceptibility in terms of physical differences or biochemical variations in the fungus have not yielded a clear picture[1]. Experiments of Faergemann[4] have suggested that the two species *P. orbiculare and P. ovale* are identical with the organisms found in the tissues of pityriasis versicolor patients. It is possible that some strains of *P. orbiculare* become mycelial more readily and have a greater pathogenic potential. A positive family history is often present, conjugal cases have also been reported. The sexes are equally affected but susceptibility at different ages may very [5], [6]. The disease is rare in childhood but is common in late teens with a peak incidence in early twenties[5]. Infection in old age is rare. As many as 40% of some populations may be affected in tropical climates[7], the onset being more often in the warmer months.

The fungus is usually present in the upper layers of the stratum corneum in-between and within the keratinized cells. The filaments show a yellow fluorescence. The term versicolor is particularly apt as the colour of the scales may vary from pale ochre to medium brown and rarely blackish. The chemical substances elaborated by the action of *Pityrosporum* species on unsaturated fatty acids have recently been believed to be the cause of tyrosinase inhibition and may be important in this regard. Recently, however, erythematous lesions have also been described[8].

This investigation was undertaken to study the clinical features of the disease in tropical

From the Department of Dermatology, Postgraduate Institute of Medical Education and Research, Chandigarh-160 012. India.

Address correspondence to : Dr. (Mrs.) Surrinder Kaur.

climate prevailing in north western region of India.

Material and Methods

One hundred and seventy five freshly diagnosed patients suffering from pityriasis versicolor over a period of one year were studied. There were 112 males and 63 females (M:F—2:1). Depending upon the extent of the disease the patients were labelled arbitrarily as having mild, moderate and severe forms of the disease calculated according to the Wallace's formula applied for burns.

Scrapings were taken in all patients from typical/suspicious lesions from two or more sites. Scalp was examined in some cases. The material was studied microscopically using the Parker ink/KOH technique[9]. Presence of thick-walled spherical organisms showing budding from a narrow neck, short and often fragmented mycelium under direct microscopy were considered diagnostic. Skin scrapings for *P. orbiculare* were positive in all of our patients. Culture of the material was not attempted.

Results

One hundred and twenty nine patients (73.7%) were in the age group of sixteen and thirty years, fourteen patients (8%) were below fifteen years, while thirty two(18.3%)were above thirty years of age (Table I). The youngest patients were two infants five weeks old. The oldest male and female patients were sixty five and sixty six years old respectively.

Table I. Distribution of patients according to age and sex.

Age in years	Males		Females	
	No.	%	No.	%
1 month-5 years	1	0.57	1	0.57
6-10	1	0.57	0	0.00
11-15	7	4.00	4	2.29
16-20	42	24.00	19	10.86
21-25	30	17.14	17	9.71
26-30	10	5.71	11	6.29
31-35	8	4.57	4	2.29
Above 35	13	7.43	7	4.00
Total	112	63.99	63	36.01

The average age of onset for males was 23.67 ±7.52 and for the females 23.97 ±7.46. The difference was statistically insignificant.

One hundred and twenty six patients (71.5%) noticed the appearance of lesions in the summer months, 25 (14.0%) observed the appearance of the disease in winters, while in 18 (10%), the lesions appeared during rainy season.

The lesions were asymptomatic in most patients. However, 77 (44%) patients had itching and burning, while 16 (9%) reported for cosmetic reasons only. One patient complained of hyperhidrosis.

Ninety four patients (53.7%) developed the disease for the first time, while 81(46%) had the disease for more than two years with periods of partial or complete remissions. Almost every patient had used one or the other kind of treatment. None seemed to make the remissions longer. The disease disappeared spontaneously in four patients but recurred.

Forty nine (28.5%) patients were concommitantly suffering from systemic diseases like urticaria, obstructive jaundice, renal failure and lepromatous leprosy. Two patients had renal transplants and were on heavy immuno-suppressive therapy.

Tinea, warts, alopecia areata, psoriasis, melasma, DLE, neurofibromatosis etc were found to be associated in some patients. The only significant associations emerged with acne vulgaris which was present in 21 patients (11.4%) and seborrhoeic dermatitis in one patient only.

Students were the most represented group (35.4%), most were active individuals maintaining moderately good personal hygiene. Fifty six (32.0%) patients were manual workers at agricultural or construction sites. These people experienced profuse sweating at work and the level of hygiene was poor. There were 32 (18.3%) housewives and 25 office goers.

Mild to moderate sweating was experienced by these groups and the personal hygiene was moderate to good (Table II). The incidence of the disease in different classes was not statistically significant.

Table II. Occupation of patients.

Class	No.	Per-centage	Level of sweating/ hygiene
Students	62	35.4	Moderate/good
Manual workers	56	32.0	Profuse/poor
Housewives	32	18.3	Mild to moderate/ moderate
Office goers	25	14.3	Mild to moderate/ moderate to good

Mild disease (upto 27% body-area involved) was seen in eighty (49.7%), and moderate (28-45% body area involvement) was present in eight (4.6%) patients. Severity of the disease varied in different attacks without particular reasons. No relation was found between the age, duration, number of attacks and extent of the disease.

Sites most commonly involved were, neck (48.6%), chest (21.7%), back (10.3%), abdomen (5.7%) and face (5.7%). Upper arms forearms and legs were also involved in some patients. Flexures were involved in two patients only (1.1%). Scalp involvement was not seen, but extension of lesions from neck into the nuchal hair line was a common feature. Neck and chest were the areas first affected, either singly or together in most adolescents and adults (64.5%), in infants the disease often remained confined to the face alone.

The spouse did not have disease in any of the sixteen couples, though other family members were at times affected (24.6%) (Table III).

Table III. Incidence of the disease in spouse and other family members.

Relationship	Number affected
Spouse	None (16 couples)
Brother(s)	20
Sister(s)	4
Son(s)	4
Father	3
Mother	2
First degree relatives	
Grand father	1
Uncle	1
Cousin	1

The lesions were macular, papular and annular with raised erythematous borders. Perifollicular pattern was prominent initially and at the margin of confluent lesions. The degree of scaliness and morphology of different lesions varied in the same patient. Mildly scaly, hypopigmented lesions were the commonest (88.5%), the lesions were hyperpigmented in 20 (11.4%) patients. The other shades of colour noted were fawn (2 patients), brown (16 patients), dark brown and blackish (one patient each). Lesions of more than one colour occurring simultaneously were not seen.

Comments

The data presented is an analysis of patients of pityriasis versicolor who attended the OPD clinic and is not a population survey undertaken for the incidence of this trivial disease.

The usual complaint is patches of discolouration on the skin with or without mild irritation. The sites most commonly affected are neck, chest, upper arms and abdomen. Rarely axillae, groins, popliteal fossae, thighs, legs and genitalia[10] may be involved. Extension down to forearms, backs of hands, feet, proximal and distal phalanges may occur. Face, scalp and palmar involvement is well recognised, especially in tropics [11, 12]. In cases with unusual distribution, the sites appear to have been predisposed

because of occlusion or pressure as under the straps of a Kanpsack or under a T-bandage in the groins[5]. The peculiar involvement of para nasal areas[2] has been thought to be due to abundant production of sweat and sebum in these sites.

The sex ratio in pityriasis versicolor has been variously described as higher in males [2, 5], equal in both sexes and more frequent in females[4]. In the present study the M:F ratio of 2:1 is in consonance with the other Indian studies[2, 12].

It is believed that pityriasis versicolor occurs at a younger age in tropics and subtropics[12], the genetic factors may be relevant in this context[6]. The youngest patients in two well-conducted studies in tropics [2, 12] were three months and thirteen years old respectively. There were two five-week-old infants in the present study. Cases of pityriasis versicolor in infancy have also been reported from Africa[13, 14] and temperate zones[15]. Incidence in children was reported to the pretty high[16]. Majority of cases in the present study were in the age group of 16-30 years, though all ages were represented.

The reason for appearance of lesions in summer[12] may be increased sweating beginning April*. However, in another study[2], there was no significant difference in the onset in any particular season in Indian patients. The onset has been reported in all seasons in temperate zones[5, 17, 18]. The onset in a particular season may be only apparent than real, the lesions are simply more often noticed because of failure to tan over involved sites.

Sweating and poor hygiene are believed to be predisposing factors to pityriasis versicolor[4,12] but this was not substantiated by all authors[4,6]. However, excessive sweating was definitely observed in patients having lesions in flexures. The excessive heat of north Indian summers leading to profuse sweating, may have predisposed or allowed the disease to become chronic.

The disease is not always asymptomatic. Mild to moderate itching has been reported in many Indian patients[2] similar to our findings, however most patients demanded treatment for cosmetic reasons only[5]. However, lesions with heavy scaling were more often symptomatic.

Essentially, pityriasis versicolor has been described as a disease of the young and healthy individuals[4]. High incidence of associated acne vulgaris[2] and seborrhoeic dermatitis[19] have been found; some of our patients had acne, but the incidence of acne would be probably similar as in unaffected young adults and adolescents. *Pityrosporum orbiculare* is a lipophilic yeast requiring exogenous lipids for its growth in the culture media. Clinically the disease is found distributed chiefly in the areas and in the group where the production of the sebum is high due to maximum stimulation of the sebaceous glands [4,5].

Flexural involvement has been reported as high [2, 20, 22], however, in the present study the occurrence was rather low. Groins are rarely involved[12].

Involvement of the face has been reported as rare[12, 15, 16] and significant[2], in the present study 5.7% patients had lesions on face. Face was commonly involved in negroes of Belgian Congo[23] and in Nigerians[24].

The presence of disease in essentially healthy persons for prolonged periods is difficult to explain, the remissions are likely to be related to the effects of weather on the skin. The causative agent is present on the skin of 85% patients having seborrhoeic dermatitis and 90% normal volunteers[4]. *Pityrosporum orbiculare* is known to be present in deeper parts of the stratum corneum and persists in the follicles after treatment[25]. The duration of the disease

* Maximum temperature ranges from 27.2°C to 43.5°C and maximum relative humidity from 46 to 100 per cent in the months April to August.

in our study varied from 2 weeks to 12 years and almost all the patients with chronic disease had annual recurrences.

In the present study, many relatives had the disease concommitantly, or prior to the lesions noticed by the patient. A low[2] to moderate[4] incidence has been reported in other series[2, 4]. None of the previous authors have mentioned the disease in the first degree relatives as found in the present study. Disease was however, not found in the spouses of sixteen married patients. In a previous study[2] two spouses among sixteen couples had the disease. Presence of the disease more often in family members and first degree relatives than in the conjugal cases may point towards the genetic predisposition and non infectious nature of the disease[4, 5].

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