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CLINICAL AND EPIDEMIOLOGICAL STUDY OF PITYRIASIS VERSICOLOR IN A TERTIARY CARE HOSPITAL IN BIHAR, INDIA

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Abstract

Background: Pityriasis versicolor (PV) is a common superficial fungal infection caused by Malassezia species, with higher prevalence in tropical climates.

Objective: To evaluate clinical patterns, distribution, associated conditions, and epidemiological factors of PV.

Methods: A cross-sectional study was conducted among 200 patients attending the dermatology outpatient department at Anugrah Narayan Magadh Medical College & Hospital, Gaya, between October 2020 and September 2022. Clinical data, family history, seasonal variation, and associated conditions were documented. KOH and Wood's lamp examinations were performed in all patients.

Results: PV was most prevalent in the 2nd and 3rd decades of life (80.5%), with a male-to-female ratio of 1.5:1. Family history was present in 16%. The disease was asymptomatic in 59% and recurrent in 14.5%. Exacerbation occurred in 71.5% during summer, and sweating was a major provoking factor in 20%. The trunk (71%), face (30.5%), and neck (24%) were most frequently involved. Hypopigmented patches were the predominant lesions (62.5%), with clear margins in 79.5%. Associated conditions included acne vulgaris, immunosuppression, and infections. KOH examination was positive in all cases, while Wood's lamp fluorescence was seen in 24.5%.

Conclusion: PV predominantly affects young adults, with summer exacerbation and sweating as key risk factors. Though mild, its recurrent nature and cosmetic impact make it a significant clinical concern in tropical regions.

Keywords: Pityriasis versicolor, Malassezia, superficial fungal infection.

Introduction

Pityriasis versicolor is a common superficial fungal infection of the skin caused by *Malassezia* species. The prevalence of the disease varies widely across different geographical regions. In Scandinavian countries, approximately 1% of the population is reported to be affected, whereas rates as high as 50% have been reported in tropical regions, where heat and humidity provide a favourable environment for fungal growth. [1,2,3,4,5]

The disease affects all races and both sexes, with the highest incidence occurring between 16 and 40 years of age. It is rarely observed in children and elderly individuals.[6] Although pityriasis versicolor is not considered contagious, several factors may increase susceptibility, including genetic predisposition, poor general health, malignancy, oral contraceptive use, hyperhidrosis, pregnancy, and other immunocompromised states. [7]

Diagnosis is primarily clinical, based on the morphology and distribution of lesions, with confirmation by simple mycological examination. Culture has no diagnostic significance in cases of pityriasis versicolor. Multiple therapeutic modalities exist, ranging from home remedies and topical agents to systemic antifungal therapies. [8]

The present study has been undertaken to evaluate the **clinical patterns of pityriasis versicolor with respect to morphology and distribution of lesions, associated conditions, and epidemiological factors such as age, sex distribution, and seasonal variation.**

Methodology

Two hundred patients of pityriasis versicolor were selected from those attending the outpatient department of Dermatology, Venereology, and Leprology at Anugrah Narayan Magadh Medical College & Hospital, Gaya, from October 2020 to September 2022.

Patients belonging to the age group of above 10 years and below 60 years, belonging to both sexes, were selected and included in the study group after taking consent. A detailed history was taken with particular reference to onset, duration, symptoms, provoking factors, clothing, and treatment taken, and was recorded.

Factors like seasonal variation, family history, and the presence of any associated illnesses were also noted. A thorough clinical examination was done with reference to the location, the colour, the extent of the lesions, the margin of the lesions, the type of lesions, and the details were recorded.

KOH examination and Wood's lamp examination were done in all the patients before therapy.

Microscopic examination of fungal elements:

Patients were made to sit in good light, and the site from which the material would be collected was cleaned with spirit. The scales from the lesions were collected by scraping with a blunt scalpel blade and were placed on a clean glass slide. One to two drops of 10% sodium hydroxide were added, and the coverslip was placed and slightly warmed over a low flame. Microscopic examination for characteristic fungal elements was done by screening both under low and high power objectives.

Wood's lamp examination:

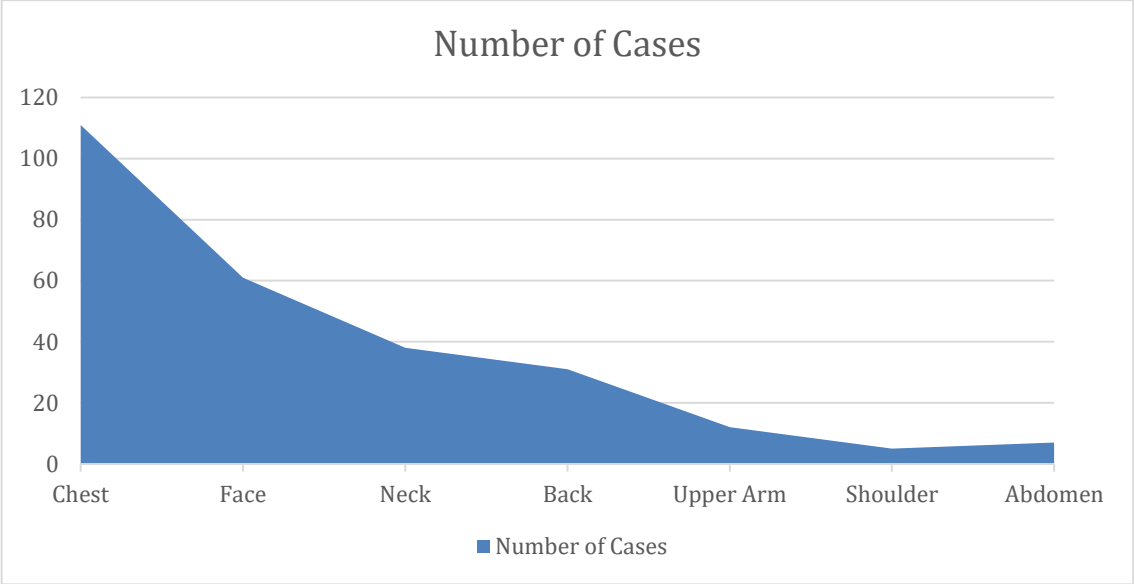
The skin area to be examined was cleansed with spirit, and the patient was taken to a dark room. The Wood's lamp was switched on and allowed to warm up for a few seconds to 1 minute to attain optimum intensity, and the light source was made to fall on the lesional and perilesional skin by keeping it 4-5 inches away from the body. The affected lesions were observed for fluorescence.

The data collected were analyzed and expressed by descriptive statistics as percentages and proportions.

Observation and Results

In the present study, 41.5% of the patients belong to the age group 21-30 years, 39% belong to the age group 10-20 years, 14% to the age group 31- 40 years, 4.5% belong to the age group 41- 50 years, and 1% belong to the age group 51-60 years. The percentage of males (60%) involved was more than that of females (40%). 80.5% of cases occurred in the 2nd–3rd decades; male:female ratio was 1.5:1. 118 patients (59%) showed itching while the remaining 82 (41%) did not. Recurrent episodes were observed in 14.5% cases. 143 patients (71.5%) had exacerbations in summer, while 57 (28.5%) had no seasonal variation.

43 (21.5%) patients had lesions due to sweating, 16 (8%) due to physical strain, and 3 (1.5%) due to medications like oral steroids. Excessive sweating, humidity, and people with strenuous work, such as laborers, showed a higher incidence and recurrence of the disease.
111 patients (55%) had lesions on the chest, 61 (30.5%) on the face, 38 (24%)
on the neck, 31 (15.5%), on the back, 12 (6%), on the upper arm, 7 (3.5%), on the abdomen and 5 (1.5%) on the shoulder (Graph-1).



Graph 1- Site of involvement

79 patients (39.5%) showed patches, 34 of them (17%) had macules, and follicular lesions were seen in 5 (2.5%) of them. Follicular lesions were seen along with macules and patches, and they constituted 72 (36%) of the total number of patients.

125 (62.5%) patients had hypopigmented lesions, 51 (25.5%) had hyperpigmented lesions, and 24 (12%) patients had both lesions. 75 patients (37.5%) had moderate scaling, 70 patients (35%) had mild scaling, and 32 patients (16%) had severe scaling, while 23 patients (11.5%) had no scaling. 15 patients (7.5%) had acne, 13 patients (6.5%) were immunosuppressed, 11 patients (5.5%) had associated infections, 7 patients (3.5%) had melasma, 5 patients (2.5%) had associated eczemas, and 4 patients (2%) had polymorphous light eruption. The majority of the cases, 170, were positive for KOH mount. 45 patients (24.5%) showed fluorescent lesions, while 155 (77.5%) of them had non-fluorescent lesions.

Fig.1: Pityriasis Versicolor lesions, hypopigmented macules over the face and chest.

Fig.2: Pityriasis Versicolor showing hypopigmented macules over the right shoulder and hyperpigmented patches over the left axilla.

Fig.3: Extensive Pityriasis Versicolor in an HIV+ male.

Fig.4: Golden yellow fluorescence of tinea versicolor on Woods Lamp.

Fig.5: Spaghetti and meat ball appearance in KOH examination

Discussion

In the present study, pityriasis versicolor (PV) was observed predominantly in the second and third decades of life, accounting for 80.5% of cases. This finding is in line with previous Indian and international studies, which highlight young adulthood as the most common age group affected due to peak sebaceous gland activity and increased sweating during this period.[1,2] The slight male predominance (male-to-female ratio of 1.5:1) observed in our study is comparable to the reports of Borelli et al.[7] and others, which suggest that outdoor activities and greater sweating tendencies in males may contribute to this disparity.

Hypopigmented lesions were the most common presentation (62.5%), followed by hyperpigmented lesions (25.5%). The predominance of hypopigmentation has also been described in earlier studies,[3,8] which attribute it to the production of dicarboxylic acids such as azelaic acid by *Malassezia*, leading to melanocyte inhibition. Follicular lesions, though less common (2.5%), highlight the evolving spectrum of clinical morphology associated with PV.

The trunk was the most frequently involved site (71%), followed by the face (30.5%) and neck (24%). These findings mirror those of Faergemann and Fredriksson[1] and Hellgren and Vincent,[2] who reported a predilection for seborrheic regions with dense sebaceous gland activity. Seasonal variation was prominent, with 71.5% of patients experiencing exacerbations in summer, a trend corroborated by Ochoa[4] and Marples,[5] emphasizing the role of humidity and sweating in pathogenesis.

Recurrence was noted in 14.5% of cases, which underscores the chronic and relapsing nature of the disease. Similar recurrence rates have been reported in studies from tropical countries,[9] highlighting the importance of maintenance therapy and preventive strategies. Wood's lamp examination was positive in only 24.5% of cases, reaffirming that while it is a useful diagnostic adjunct, it is less sensitive than KOH examination, which was positive in all patients.[10]

Associated conditions such as acne vulgaris (7.5%), immunosuppression (6.5%), and other dermatoses were observed, suggesting that PV may coexist with conditions that alter cutaneous microflora or host immunity. This is consistent with earlier reports linking PV to systemic and local factors such as immunosuppression, pregnancy, and endocrine influences.[7,11]

Overall, our findings support the notion that PV is a benign but recurrent superficial mycosis with significant cosmetic implications, particularly in young adults in tropical climates.

Conclusion

Pityriasis versicolor is a common superficial fungal infection with a predilection for young adults, particularly males, and is strongly influenced by climatic factors such as heat and humidity. The trunk and seborrheic regions remain the most frequently involved sites, and hypopigmentation is the predominant clinical presentation. While the disease is mild and asymptomatic in most patients, its recurrent nature and cosmetic disfigurement make it clinically significant.

Preventive counseling, including advice on personal hygiene, avoidance of excessive sweating, and seasonal prophylactic treatment in predisposed individuals, may help reduce recurrences. Future studies focusing on genetic susceptibility, host immunity, and newer therapeutic options may provide further insights into effective long-term management strategies for PV.

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