Section: DVL

Original Research Article

DECIDING THE CLINICAL AND EPIDEMIOLOGICAL ASPECTS IN SUBJECTS WITH PITYRIASIS ROSEA

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ABSTRACT

Background: PR (Pityriasis rosea) is a common and enigmatic dermatological condition with a specific character and distinctive clinical picture. Despite its high prevalence, the pathogenesis and etiology of PR remain unidentified. The present study aimed to assess the clinical and epidemiological features of subjects with Pityriasis rosea. The study also assessed dermoscopic features of Pityriasis rosea and assessed histopathological correlation.

Materials and Methods: The present study assessed 100 subjects. A detailed clinical history was recorded, followed by clinical examination and Dermoscopy. Quantitative features assessed included age and disease duration. Also, qualitative risk factors were assessed, including gender, symptom, lesion site, cutaneous examination findings, Dermoscopy findings, and histopathological data.

Results: The study results showed that there is a male predominance in Pityriasis rosea and the mean age was 30.6±15.5 years. Atypical clinical presentation was seen in 40% of the subjects. The most commonly seen Dermoscopy feature was peripheral collarette scale in 62% of subjects followed by a diffuse red background in 58% of subjects, and peripheral dotted vessels in 50% of subjects. On histopathological assessment, the most common findings were perivascular lymphocytic infiltrate in 56% of subjects followed by spongiosis in 44% of subjects, parakeratosis, red blood cell extravasation, and irregular acanthosis in 38%, 36%, and 34% of subjects respectively.

Conclusion: The present study concludes that diagnosis of Pityriasis rosea is clinical and is difficult in atypical cases where dermoscopy is helpful. It also helps in the identification of the age of the lesions, and hence, helps in deciding the treatment modality in the subjects. Biopsy is the gold standard in differentiating it from other differentials of Pityriasis rosea.

Keywords: Dermoscopy, Histopathology, Pityriasis rosea, Spongiotic dermatitis

INTRODUCTION

PR (Pityriasis Rosea) depicts an acute and self-limiting disease that is characterized by a distinct eruption in the skin with minimum constituting symptoms. The diagnosis of Pityriasis Rosea is based on the clinical presentation, however, atypical forms make it difficult to diagnose.[1] The etiology of Pityriasis Rosea remains still unclear with various hypotheses aimed at describing the etiology suggesting that Pityriasis Rosea has both non-infectious and infectious etiology where non-infectious etiology include vaccines, drugs, atopy, and autoimmunity and infectious etiology include both bacterial and viral etiology. However, it is considered to be caused by viruses depending on cases clustering, few relapses and a course similar to viral exanthem with herald patch followed by

developing a secondary eruption, prodromal symptoms presence, and seasonal variations.[2]

Existing literature data has various reports concerning the development of Pityriasis Rosea a few weeks following the infection by SARS-COV2. However, the incidence is scarce for establishing a causal relationship between the two. Atypical forms of Pityriasis Rosea are seen in nearly 20% of all the cases.[3] The diagnosis is made from skin biopsies in recurrent and atypical cases to differentiate it from another differential diagnosis. Recently, there has been an increase in the popularity of Dermoscopy which also helps in the diagnosis of Pityriasis Rosea.[4]

The present study aimed to assess the clinical and epidemiological features of subjects with Pityriasis rosea. The study also assessed dermoscopic features of Pityriasis rosea and assessed histopathological correlation.

MATERIALS AND METHODS

The present descriptive cross-sectional observational study was aimed to assess the clinical and epidemiological features of subjects with Pityriasis rosea. The study also assessed dermoscopic features of Pityriasis rosea and assessed histopathological correlation. The study was done at Department of Dermatology, Venereology and Leprosy after the clearance was taken by the concerned Institutional Ethical committee. Verbal and written informed consent were taken from all the subjects before study participation.

The study included all the subjects that were willing to participate in the study from all the age ranges and both genders that had confirmed diagnosis of Pityriasis rosea and visited the institute within the defined study period.

In all the included subjects, gender and age were recorded as a part of epidemiological data followed by a recording of the comprehensive clinical history including the family history, any comorbidity, vaccination history, drug intake, atopy history, duration between the appearance of herald patch and secondary lesions, prodromal features, and disease symptoms.

This was followed by a physical examination of all the subjects to assess the presence of herald patches, distribution, and morphology of the skin lesions. This was followed by a dermoscopic assessment utilizing a video dermatoscope. Also, clinical pictures were taken. Needed investigations were also done in subjects such as skin biopsy and VDRL (Venereal Disease Research Laboratory) was advised as and when needed to confirm the diagnosis of Pityriasis Rosea.

The data gathered were statistically analyzed using SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) for assessment of descriptive measures, Student t-test, ANOVA (analysis of variance), Fisher's exact test, Mann-Whitney U test, and Chi-square test. The results were expressed as mean and standard deviation and frequency and percentages. The p-value of <0.05 was considered.

RESULTS

The present descriptive cross-sectional observational study was aimed to assess the clinical and epidemiological features of subjects with Pityriasis rosea. The study also assessed dermoscopic features of Pityriasis rosea and assessed histopathological correlation. The present study assessed 100 subjects where a detailed clinical history was recorded followed by clinical examination and Dermoscopy. A male predominance was seen with 60% (n=60) subjects with the highest prevalence in 18-25 years with 26% (n=26) subjects with an age range of 8-66 years and a mean age of 30.6±15.5 years. Two females were pregnant and were in the first trimester. A higher incidence was reported in the spring and rainy season. No subject gave a positive familial history. History of stress, gastrointestinal infection, wearing new synthetic garments, recent viral infection and atopy were reported in 6%, 8%, 10%, 38%, and 4% subjects respectively. 18 subjects with atypical PR had a history of vaccine or drug intake. 6 subjects each after SARS COV-2 vaccine (2 Covishield and 4 after Covaxin) chemotherapeutic drugs reported PR. Amlodipine intake reported lichenoid PR in 2 subjects.

No prodromal symptom was reported in 60% subjects [Table 1]. Mild itching was seen in 82% of subjects and 2 subjects had a burning sensation. Herald patch was seen in 72% of subjects. Back was most commonly involved. Duration from herald patch appearance and secondary eruption was 5 days in 40% of subjects. On clinical assessment, classic PR was seen in 60% (n=60) of subjects and Atypical PR was seen in 40% (n=40) subjects. 52% of subjects had central lesion distribution showing a Christmas tree pattern with the most common morphology being plaque seen in 82% of subjects of secondary eruption followed by papules. Targetoid lesions as EM-like ER were seen in 8 subjects, two subjects developed soles and palm vesicles and four subjects had purpuric lesions. Most common were inverse PR followed by popular PR. Other types seen were lichenoid PR and EM-like PR.

On Dermoscopy, the most common finding seen was peripheral collarette scale in 62% of subjects followed by a diffuse red background in 58% of subjects, and peripheral dotted vessels in 50% of subjects respectively. In classic PR, these results were consistent, and brown globules were seen in 50% of subjects. In atypical PR, the most common findings were diffuse red background, peripheral collarette scaling, and scattered dotted vessels in 65%, 45%, and 45% of subjects respectively. Early PR lesions showed a diffuse red background with peripheral dotted vessels and collarette scaling at the center. In

well-established lesion, Dermoscopy showed a diffuse red background with peripheral dotted vessels and peripheral collarette. Comparatively, late PR depicted a diffuse yellow background with a brown structure less area with no brown globules or scale.

It was seen that for histopathology, biopsy was taken from atypical lesions and secondary eruptions in 56 subjects. The most common epidermal change was spongiosis, parakeratosis, and irregular acanthosis in 44%, 38%, and 34% of subjects respectively. The most common dermal change was perivascular lymphocytic infiltrate in 56% of subjects followed by red blood cell extravasation in 36% of subjects and two subjects showed intraepidermal vesicle. Other findings seen were dermal edema, eosinophils, mucin in the papillary dermis, and the presence of melanophages. Classical PR depicted mild spongiosis, irregular acanthosis, focal parakeratosis, and hyperkeratosis with sparse perivascular lymphocytic infiltrate. Lichenoid PR on histopathology showed dermal melanophages and necrotic keratinocytes. In 10 subjects, the characteristic salute sign was seen as a parakeratotic mound lifting from the stratum corneum. This correlated to the collarette scale present over the lesions. In the biopsy of EM-like PR, hyalinization of the papillary dermis, RBC extravasation, perivascular lymphocytic infiltration, spongiosis, thinning of the granular layer, irregular acanthosis, and focal parakeratosis were seen.

Table 1: Prodromal symptoms distribution in the study subjects.

S. No	Symptoms	Number (n)	Percentage (%)
1	None	60	60
2	Headache	2	2
3	URTI (upper respiratory tract infection)	4	4
4	Diarrhea	4	4
5	Cold and cough	2	2
6	Arthralgia	10	10
7	Myalgia	6	6
8	Fever	18	18

DISCUSSION

In the present study, 100 subjects were evaluated through comprehensive clinical history-taking, physical examination, and dermoscopic assessment. A male predominance was observed, comprising 60% (n = 60) of the study population. The highest prevalence was noted in the 18–25-year age group (26%, n = 26), with an overall age range of 8 to 66 years and a mean age of 30.6 ± 15.5 years. Two female participants were in the first trimester of pregnancy. A seasonal trend was evident, with increased incidence during the spring and rainy seasons. No subject reported a positive family history. Contributing factors included a history of stress (6%), gastrointestinal infection (8%), use of new synthetic garments (10%), recent viral infection (38%) and atopy (4%). Among 18 subjects presenting with atypical pityriasis rosea (PR), a temporal association with recent vaccination or drug intake was documented. Six cases followed administration of SARS-CoV-2 vaccines—two after Covishield and four after Covaxin—while others were associated with chemotherapeutic agents. Additionally, two cases of lichenoid PR were observed following amlodipine intake. These data were comparable to the previous studies of Prasad D,[5] in 2000 and Zawar V et al,[6] in 2010 where authors assessed subjects with Pityriasis Rosea and demographic and disease data comparable to the present study in their respective studies.

Mild pruritus was reported by 82% of subjects, while two individuals experienced a burning sensation. A herald patch was identified in 72% of cases, with the back being the most commonly involved anatomical site. In 40% of subjects, the interval between the appearance of the herald patch and the onset of secondary eruptions was approximately five days. Clinically, classic pityriasis rosea (PR) was observed in 60% of cases, whereas 40% presented with atypical variants. Central lesion distribution demonstrating the characteristic 'Christmas tree' pattern was noted in 52% of subjects. The most common morphological presentation of the secondary eruption was plaques (82%), followed by papules. Targetoid lesions resembling erythema multiforme-like eruptions were seen in eight subjects. Additionally, two subjects developed vesicular lesions on the palms and soles, while four exhibited purpuric lesions. Atypical PR was observed in 40% (n = 40) of the cohort, with inverse PR being the most frequent variant, followed by papular PR. Other atypical forms included lichenoid PR and erythema multiforme-like PR. These results were consistent with the findings of Amer A et al,[7] in 2007 and Sharma L et al,[8] in 2008 where Pityriasis Rosea symptoms reported by the authors in their studies were similar to the results of the present study.

It was seen that on Dermoscopy finding, the most frequently observed dermoscopic feature was a peripheral collarette scaling in 62% followed by diffuse background, noted in 58% (n = 58) of subjects, and peripheral dotted vessels in 50% of cases. In cases of classic pityriasis rosea (PR), these findings were consistent, with brown globules present in 50% of subjects. Among those with atypical PR, the most common dermoscopic features included a diffuse red background (65%), peripheral collarette scaling (45%), and scattered dotted vessels (45%). Early PR lesions typically demonstrated a diffuse red background, peripheral dotted vessels, and central collarette scaling. In well-established

lesions, dermoscopy revealed a diffuse red background accompanied by peripheral dotted vessels and peripheral collarette scaling. In contrast, late-stage PR lesions were characterized by a diffuse yellow background and brown structureless areas, with absence of brown globules or scaling. These findings were in agreement with the results of Relhan V et al,[9] in 2013 and Yusuf SM et al,[10] in 2018 where Dermoscopy findings comparable to the present study were also reported by the authors in their respective studies.

The study results also showed that for histopathology, biopsies were obtained from atypical lesions and secondary eruptions in 56 subjects. The most common epidermal changes observed were spongiosis (44%), parakeratosis (38%), and irregular acanthosis (34%). The predominant dermal finding was a perivascular lymphocytic infiltrate, noted in 56% of cases, followed by red blood cell extravasation (36%). Intraepidermal vesicles were identified in two cases. Additional histopathological features included dermal edema, eosinophilic infiltration, mucin deposition in the papillary dermis, and the presence of melanophages. In classic PR, histopathology revealed mild spongiosis, irregular acanthosis, focal parakeratosis, and hyperkeratosis, accompanied by sparse perivascular lymphocytic infiltrate. Lichenoid PR demonstrated dermal melanophages and necrotic keratinocytes. In 10 cases, a characteristic “salute sign” was observed, characterized by a parakeratotic mound partially separated from the stratum corneum, correlating clinically with the collarette scale. Biopsies from erythema multiforme-like PR lesions exhibited hyalinization of the papillary dermis, red blood cell extravasation, perivascular lymphocytic infiltration, spongiosis, thinning of the granular layer, irregular acanthosis, and focal parakeratosis. These findings were in line with the results of Chhabra N et al,[11] in 2018 and Marcantonio Santa Cruz OY et al,[12] in 2021 where histopathological findings of Pityriasis Rosea reported by the authors in their studies were comparable to the present study.

CONCLUSION

Considering its limitations, the present study concludes that the diagnosis of Pityriasis rosea is clinical and is difficult in atypical cases where dermoscopy is helpful. It also helps in the identification of the age of the lesions, and hence, helps in deciding the treatment modality in the subjects. Biopsy is the gold standard in differentiating it from other differentials of Pityriasis rosea.

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