



## Original Research Article

# A clinico-epidemiological study of pityriasis rosea in patients attending a tertiary care hospital in North Eastern India

Syeda Sahnaj Azmi<sup>1</sup>, Bhaskar Gupta<sup>1,\*</sup>

<sup>1</sup>Dept. of Dermatology, Silchar Medical College and Hospital, Silchar, Assam, India



## ARTICLE INFO

## Article history:

Received 07-01-2021

Accepted 28-01-2021

Available online 22-02-2021

## Keywords:

Pityriasis rosea

Herald patch

Christmas tree pattern

Clinical features

Diagnosis

## ABSTRACT

**Background:** Pityriasis Rosea is an acute self limiting disease, probably infective in origin affecting mainly children and young adults and characterised by a distinctive skin eruption and minimal constitutional symptoms.

**Aim:** Our study was done to evaluate the clinical and epidemiological profile of pityriasis rosea in patients attending Dermatology OPD in a tertiary care centre in North Eastern India during the tenure period from June 2019 to May 2020.

**Materials And Methods:** A total of 34 patients of pityriasis rosea diagnosed clinically attending the out patient department of Dermatology were recruited over a period of one year. Clinical and demographic data were noted.

**Results:** Out of 34 patients, 21(61%) were males and 13(38%) were females. Majority of the patients were seen in the age group of 11-30 years. Pruritus was found in the majority of patients. Seasonal variation was evident, with highest incidence in summer followed by winter season. Classical PR was the common type seen and localized and inverse PR were the most common atypical presentation.

**Conclusion:** PR is a common self limiting disorder seen in children and young adults. Knowledge about the disease will help in correct management and prevent unnecessary distress to the patient.

© This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## 1. Introduction

Pityriasis rosea is an acute self-limiting disease, probably infective in origin, affecting mainly children and young adults and is characterized by a distinctive skin eruption and minimal constitutional symptoms.<sup>1</sup> Most cases of pityriasis rosea occurs in the age group of 10 to 35 years with a slight female preponderance.<sup>1</sup> Many infectious agents have been suspected but HHV-6 and HHV-7 have been implicated as the cause of the eruption.<sup>2</sup> The first manifestation is usually the appearance of a herald patch located on the trunk, upper arm, neck, or thigh which is a sharply defined, erythematous, round or oval plaque of 2-5 cm in size covered by fine scale.<sup>1</sup> Generalised secondary eruptions begins after an interval of 5-15 days and comprises of

discrete oval lesions, dull pink in colour and covered by fine dry silvery grey scales. The centre tends to clear and assumes a wrinkled, atrophic appearance and tawny colour, with marginal collarette of scale attached peripherally, with the free edge of the scale internally.<sup>1</sup> The lesions are usually round to oval in shape, with their long axis following Langer cleavage lines. On the posterior trunk, such an orientation leads to what is often referred to as a "fir tree" or "christmas tree" pattern. Apart from this classic type, various atypical types are also described in literature. This study was done to analyse the various clinico-epidemiological and histopathological features of pityriasis rosea in patients attending the dermatology out patient department.

\* Corresponding author.

E-mail address: [drzmisyed@gmail.com](mailto:drzmisyed@gmail.com) (B. Gupta).

## 2. Materials and Methods

A hospital based cross-sectional study of pityriasis rosea was carried out among the patients from June 2019 to May 2020 in the department of Dermatology, Silchar Medical College. The study was done after getting clearance from Institutional Ethical Committee.

Diagnosis of pityriasis rosea was made utilizing the standard definitions accepted in the literature.

After analyzing the history and clinical examination findings, diagnosis could be made. It included history of atopy, recent infection, consumption of drugs, family history and any prodromal symptoms. Routine blood, urine examination and VDRL test were done in all cases. All cases were subjected to potassium hydroxide mount examination to rule out fungal infection. Skin biopsy for histopathological examination were taken in all cases. Patients were prescribed appropriate medications and advised to visit after the lesions subsided. The data was tabulated and analysed.

### 2.1. Inclusion criteria

All patients with clinically diagnosed cases of pityriasis rosea irrespective of their age and sex were included in the study.

### 2.2. Exclusion criteria

Patients who had potassium hydroxide mount positive and cases who refused consent.

## 3. Results

In this study age of the patients ranged from 3 to 48 years. Out of 34 patients maximum cases were seen in young adults with a slight male preponderance with male : female ratio of 1.6:1

**Table 1:** Age distribution

Age in years	Number	Percentage
0-10	3	8.82%
10-20	9	26.47%
20-30	10	29.41%
30-40	7	20.58%
>40	5	14.70%
Total	34	

**Table 2:** Sex distribution

Gender	Number	Percentage
Male	21	61.76%
Female	13	38.23%
Total	34	

Seasonal variation was seen with maximum cases during the month of June, July and August.

**Table 3:** Seasonal distribution

Month	Number of patients	Percentage
January	2	5.88%
February	1	2.94%
March	2	5.88%
April	3	8.82%
May	3	8.82%
June	5	14.70%
July	4	11.76%
August	6	17.64%
September	3	8.82%
October	2	5.88%
November	1	2.94%
December	2	5.88%
Total	34	

Itching was present in 26(76.47%) cases, prodromal symptoms like fever in 9(26.47%) cases, headache in 8(23.52%)cases and arthralgia in 7(20.58%) cases. Lymphadenopathy was present in 1(2.94%)case.

**Table 4:** Clinical features

Symptoms	Number of cases	Percentage
Itching	26	76.47%
Fever	9	26.47%
Headache	8	23.52%
Arthralgia	7	20.58%
Lymphadenopathy	1	2.94%

History of respiratory tract infection was seen in 16(47.05%) cases and history of atopy was present in 9(26.47%) cases. There was no significant drug history in any of the patients.

Classic type of pityriasis rosea was seen in 21(61%) cases. Atypical variants like absent herald patch, inverse PR, papular PR and localized PR were also seen.

**Table 5:** Clinical presentation

Type	Number of patients	Percentage
Classic	21	61.76%
Absent herald patch	7	20.58%
Papular	4	11.76%
Inverse	1	2.94%
Localised	1	2.94%

The histopathological findings are shown in [Table 7].

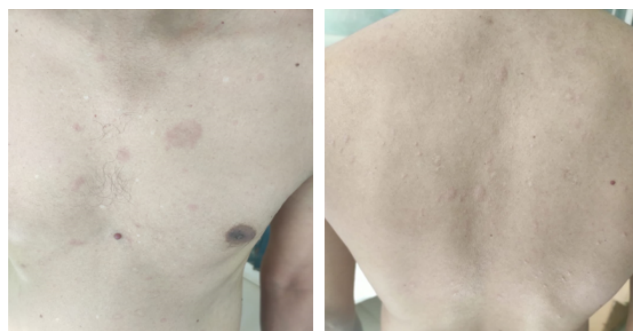
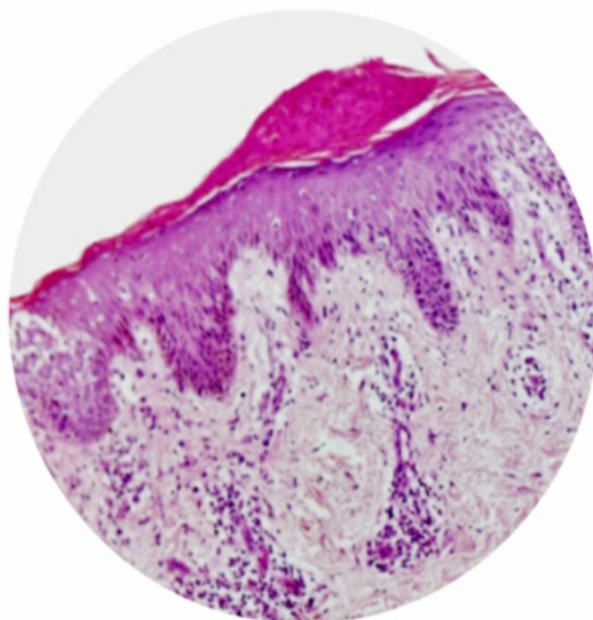
In more than half of the biopsy materials, perivascular lymphocytic infiltration, irregular acanthosis and spongiosis were observed.

## 4. Discussion

PR is an acute onset, self limiting disease with specific skin rash usually affecting children and young adults.<sup>1</sup> In

**Table 6:** Location of herald patch

Location	Number of cases	Percentage
Trunk	16	47.05%
Upper extremities	4	11.76%
Lower extremities	2	5.88%
Neck	1	2.94%
Face	1	2.94%

**Fig. 3:** Pityriasis rosea (papular variant) with herald patch over the chest**Fig. 1:** Clinical presentation of pityriasis rosea showing multiple round to oval plaques with collarette of scale.**Fig. 4:** Pityriasis rosea showing superficial perivascular infiltrate of lymphocytes and erythrocytes, moderate acanthosis, spongiosis, decreased granular layer and mounds of parakeratosis, H&E (10x)**Fig. 2:** Pityriasis rosea with herald patch over the back

a study done by Egwin AS et al, maximum cases were seen in the age group of 11-30 years with male:female ratio of 1.5:1 which is in consistent with our study.<sup>3</sup> In our study maximum cases were reported during the months of June and July which is also reported in studies conducted by Egwin AS et al,<sup>3</sup> and Gilbert CM et al.<sup>4</sup>

The most common symptoms in our study was itching which was seen in 26(76.47%) which is similar to a study done by Kambil SM.<sup>5</sup>

Herald patch was seen in 24(70.58%) cases and it was present on the trunk in 16(47.05%) cases. Similar findings were seen in another study done by Bjornberg A et al.<sup>6</sup>

In the present study 21(61%) cases presented with classical pityriasis rosea and 13(38.23%) cases presented atypical morphology which includes absent herald patch

**Table 7:** Histopathological findings in pityriasis rosea

Histopathological findings	Number of cases	Percentage %
Epidermal changes		
Irregular acanthosis	26	76.47%
Focal parakeratosis	21	61.76%
Spongiosis	32	94.11%
Dyskeratosis	24	70.58%
Hyperkeratosis	24	70.58%
Thinning of granular layer	23	67.64%
Lymphocytic exocytosis	16	47.05%
Dermal changes		
Perivascular lymphocytic infiltration	33	97.05%
Periglandular lymphocytic infiltration	20	58.82%
Rbc's in papillary dermis	12	35.29%
Homogenisation of papillary collagen	21	61.76%

seen in 7(20.58%) cases which was also seen in a study done by Egwin AS et al.<sup>3,7</sup> The other atypical morphology observed in a previous study done by Ozyurek GD et al includes, papular, purpuric, urticarial, lichenoid. In the present study 4(11.76%) cases of localized and one case each of papular and inverse pityriasis rosea were seen. In our study there was no involvement of oral mucosa.

The histopathological features of pityriasis rosea have been considered compatible to that of dermatitis by many authors. The additional features are: absence or decrease of granular cell layer, extravasation of RBC in papillary dermis, dyskeratosis, homogenization of papillary collagen, and intraepidermal vesicles in apparently dry skin. Most of these features were observed in majority of biopsies [Table 6].

The study conducted by Okamoto et al. in 29 patients of PR, perivascular lymphocytic infiltrate was detected in all biopsy materials and erythrocyte extravasation was detected in 66% of biopsy materials.<sup>8</sup> Panizzon et al. evaluated 62 biopsy materials in their study and the main characteristic feature was determined as eczematous manifestation.<sup>9</sup> In our study, observation of perivascular lymphocytic infiltration, focal parakeratosis, irregular acanthosis, and spongiosis in more than half of our biopsy materials appear to support the eczema like histopathological features of PR. The presence of exocytosis of lymphocytes within the epidermis, seen on histopathological examination in most of the specimens, suggests a possible interaction between epidermal components and dermal mononuclear cells in the pathogenesis of PR.

Moreover, dyskeratosis was observed in 24(70.58%) patients in our study. This ratio was reported as 55% in the study done by Okamoto et al.<sup>8</sup> Since dyskeratotic cells are considered to emerge due to the damage of basal epidermis, their presence suggests that primary damage of basal cells

may also occur in PR.

Furthermore, the extravasation of erythrocytes observed in nearly half of our biopsy materials support the concept of dermal vascular damage.

## 5. Conclusion

Pityriasis rosea is an acute self limiting disorder seen in young adults and more often during summer. It is seen that most of our patients had history of respiratory tract infection which lead us to an inference that pityriasis rosea may be a delayed type of hypersensitivity reaction to an infectious agent. Awareness about the self limiting nature of the disease will help in reducing the distress and unnecessary treatment.

## 6. Source of Funding

No financial support was received for the work within this manuscript.

## 7. Conflict of Interest

The authors declare they have no conflict of interest.

## References

1. Sterling JC, Burns T, Breathnach S. Virus infections. Rook's Textbook of Dermatology. 2004;25:79-83.
2. Chuh A, Lee A, Zawar V, Sciallis G, Kempf W. Pityriasis rosea - An update. *Indian J Dermatol, Venereol Leprol.* 2005;71(5):311-5. doi:10.4103/0378-6323.16779.
3. Egwin AS, Martin J, Bhat RM, Kamath GH, Nanda KB. A clinical study on pityriasis rosea. *Indian J Dermatol.* 2005;50(3):136.
4. Gilbert CM. Traite Pratique des Maladies de la Peau et de la syphilis. . In: 3rd Edn.. vol. 402. Paris;.
5. Kambil SM. Pityriasis rosea: a clinicoepidemiological study of 115 cases. *Int J Res Dermatol.* 2018;4(2):202-4.
6. Bjornberg A, Hellgren I. Pityriasis Rosea: A statistical, clinical and laboratory investigation of 826 patients and matched healthy controls. *Acta Derm Venereol.* 1962;42:1-68.
7. Jerome M, Parsons R. Pityriasis rosea update. *J Am Acad Dermatol.* 1986;15:159-67.
8. Okamoto H, Imamura S, Oshima TA, Komura J, Ofuji S. Dyskeratotic degeneration of epidermal cells in pityriasis rosea: light and electron microscopic studies. *Br J Dermatol.* 1982;107(2):189-94. doi:10.1111/j.1365-2133.1982.tb00337.x.
9. Panizzon R, Bloch PH. Histopathology of pityriasis rosea Gibert: qualitative and quantitative light microscopic study of 62 biopsies of 40 patients. *Dermatol.* 1982;165:551-8.

## Author biography

Syeda Sahnaj Azmi, 2nd Year Postgraduate

Bhaskar Gupta, Professor and HOD

**Cite this article:** Azmi SS, Gupta B. A clinico-epidemiological study of pityriasis rosea in patients attending a tertiary care hospital in North Eastern India. *IP Indian J Clin Exp Dermatol* 2021;7(1):74-77.