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Pityriasis Rosea: Prevalence and Clinical Variants in Uganda

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Abstract

Purpose : The study aimed to determine the prevalence and describe the clinical variants, of Pityriasis rosea among patients attending the Skin clinic at MRRH

Patients and methods : A hospital-based cross-sectional descriptive study conducted for a 6-month period in the Skin clinic of MRRH in Southwestern Uganda. Data were collected from 1,802 consecutively recruited patients using structured questionnaires. Patients with a clinical diagnosis of Pityriasis rosea were examined and subsequently sent for KOH and TPHA tests to rule out fungal skin infection and secondary syphilis respectively then received routine care at the skin clinic

Results : 54 patients with pityriasis rosea were seen giving a prevalence of 3.0%(95% CI: 2.3-3.9) with a median age of 20.5 and a peak incidence of 21-30 years with female predominance. Nineteen (35.19%) had a herald patch. Papules and plaques were the predominant morphologies noted in 47 (87.04%) and 34 (62.96%) respectively while most patients had lesions on the trunk and upper extremities, 51 (94.44%) of the patients each. Majority, 52 (96.30%) had a symmetrical pattern and 26 (48.15%) had a " Christmas-tree" pattern. None of them had oral nor nail involvement.

Conclusion : Pityriasis rosea is seen often among patients attending the skin clinic at MRRH with a prevalence of 3.0%, median age of 20.5, peak incidence of 21-30 years with female predominance. A few had a herald patch, presented with a polymorphic eruption predominated with papules and plaques, lesions mostly occurred on the trunk and upper extremities with a symmetrical pattern.

Keywords: [Herald patch, Papule, Plaque, Polymorphic, Symmetrical, '' Christmas-tree'' Pattern]

Introduction

Pityriasis rosea is a papulosquamous eruption, abrupt and self-limiting in nature that occurs mostly in otherwise healthy adolescents and young adults(Bolognia, 2018). Pityriasis means "fine scale" while rosea is a Latin adjective that translates to "pink" in English. The precise global prevalence of pityriasis rosea is unknown. A prevalence of 1.4% was found in a study conducted in Saudi Arabia(Shahzad et al., 2013). In another study done in Nigeria, the prevalence was 3.6%(Yusuf et al., 2018). Pityriasis rosea may present with different variants which can be grouped according to the herald patch, morphology, and distribution of the secondary eruption(Urbina, 2017). No herald patch, only herald patch, one herald patch, and several herald patches are examples of variations based on the herald patch(Yusuf et al., 2018). The morphological

variants include plaque, papular, urticarial, erythema multiforme-like, and follicular variants(Litchman et al., 2021). The clinical variants based on the distribution of the secondary eruption can be symmetrical, inverse, or limited to the limb(Rook, 2016).

Patients with pityriasis rosea have a varied presentation that may pose some difficulty in making a diagnosis(Bolognia, 2018). Confirming the diagnosis by histopathologic examination of biopsies from affected skin may be challenging due to the non-specific histologic findings of pityriasis rosea(Fitzpatrick, 2008). A diagnosis should not be missed owing to the risk of complications such as spontaneous abortion in the first trimester or premature delivery hence the need for close fetal surveillance in affected pregnant patients(Rook, 2016). Therefore, the study aimed to determine the prevalence and describe the clinical variants of pityriasis rosea.

Material and methods

Study design: The study was a hospital-based cross-sectional descriptive study. The duration of the study was from 5th September 2022 to 15th March 2023.

Study setting: The study was carried out in the Skin clinic of MRRH, a large public teaching hospital for MUST located in Mbarara City in Southwestern Uganda.

Study site: Patients present to the Skin clinic with a wide range of skin conditions including infections, inflammatory conditions such as pityriasis rosea and cutaneous malignancies.

Study population: Patients attending the skin clinic at MRRH during the six (6) month study period from 5th September 2022 to 15th March 2023.

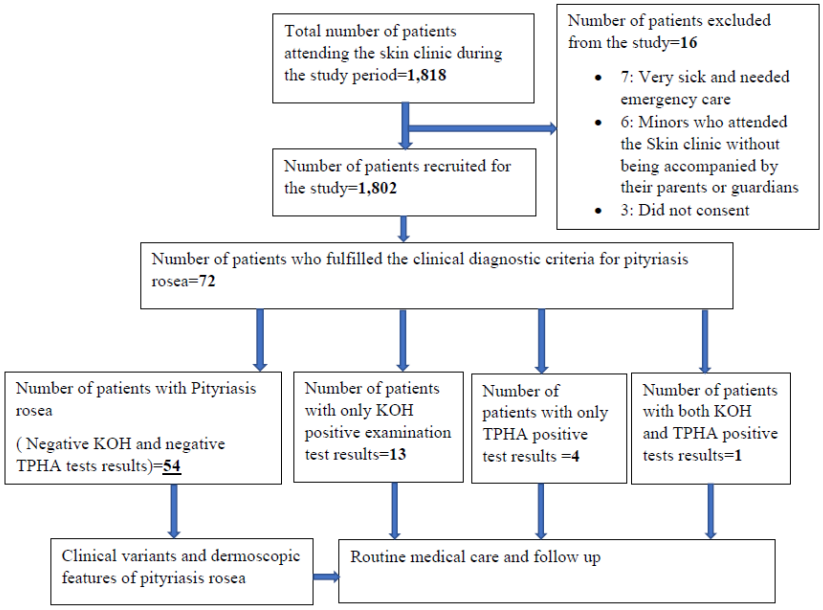
Study eligibility criteria

Inclusion criteria: Patients attending the skin clinic across all age groups and both genders were included in the study after obtaining informed consent during the six-month study period.

Exclusion criteria: Patients who needed emergency treatment as the study could delay patient care and those who were very ill because they may not have been able to withstand the interview were excluded from the study.

The study flowchart is outlined in figure 1 below.

Figure 1: Study flow chart



Sampling method: The patients were recruited consecutively into the study throughout the study period.

Study Procedure and Data collection

Selection of eligible study participants: Eligible study participants were selected as they were being registered before their medical care at the skin clinic. The Covid-19 risk management standard operating procedures were observed. Hand sanitization was performed before the start of the interview. The principal investigator, research assistants and the study participants all wore face masks during the administration of the questionnaire and examination. The principal investigator wore gloves and used sterile equipment for example a sterile surgical blade for sample collection for investigations.

Informed consent: The selected study participants were approached during their visit to the Skin clinic and the details of the study were described to them in a language that they understood and written informed consent was obtained. The study participants were assured of anonymity, confidentiality, and privacy of their information.

Data collection procedure: Data was collected using a pre-tested structured questionnaire administered by trained research assistants in an in-person interview and the study questionnaire was filled. A complete physical examination of the skin was conducted in a well-lit room by the principal investigator with the aid of research assistants with adequate exposure of the study participant in the presence of a chaperone and the examination section of the form was filled. A clinical diagnosis of pityriasis rosea can be made if a patient has all the essential clinical features, at least one of the optional clinical features, and none of the exclusion clinical features

- **Essential clinical features:**

1. Discrete circular or oval lesions.
2. Scaling on most lesions.
3. Peripheral collarette scaling with central clearance of at least two lesions.

- **Optional clinical features:**

1. Truncal and proximal limb distribution, with less than 10% of lesions distal to mid-upper-arm and mid-thigh.
2. Distribution of most lesions along the ribs.
3. A herald patch (not necessarily the largest) appearing at least two days before the generalized eruption.

- **Exclusion clinical features:**

1. Multiple small vesicles at the center of two or more lesions.
2. Most lesions on palmar or plantar skin surfaces.
3. Clinical or serological evidence of secondary syphilis, such as generalized lymphadenopathy.

The lesions of pityriasis rosea present were examined and documented, the herald patch was measured using a Photo Measuring label ©Delasco. In addition, photographs of the affected skin were taken using a Canon EOS 4000D camera without revealing the participant's identity after obtaining informed photography consent. The photographs were labeled using a unique identifier code and stored

electronically under lock and key and access was granted only to the principal investigator. The photographs will be stored until the time of publication. After examination, investigations such as skin scraping for KOH and blood samples for TPHA were taken from patients who fulfilled the clinical diagnostic criteria for pityriasis rosea as routinely done in the skin clinic to rule out secondary syphilis and tinea corporis which are the common differential diagnoses for pityriasis rosea.

Data collection tool: The data was collected using a structured questionnaire, examination, and investigation tool.

Questionnaire tool: The questionnaire was administered by the principal investigator with the help of trained research assistants in an in-person interview in a language in which the patient was comfortable with. The first part of the questionnaire collected information on the biodata which were the study identification number, date of interview, age, residence, occupation, and gender. The second part of the questionnaire collected information on medical histories such as the duration and onset of symptoms, associated symptoms, history of itch, atopy, and use of any treatment for the rash.

Examination tool: It contained information on the physical examination of the skin, the oral cavity and nails. The physical examination included findings examined with the naked eye such as the presence or absence of a herald patch, location and morphology of the lesions.

Investigation tool: This tool was divided into three parts; sample collection, laboratory procedure, and interpretation of results.
Sample collection and packaging was done by the principal investigator with adherence to standard operating procedures including wearing of face mask and sterile gloves.

Skin scrapping for mycology: The principal investigator took a skin scraping from one site of affected skin for every patient who fulfilled the clinical diagnostic criteria of Pityriasis rosea. The site to be scraped was disinfected using 70% alcohol solution then allowed to air dry. Scrapings from the advancing border of the lesion were taken using a sterile size 15 blade onto a clean plain piece of paper. Each specimen was then be appropriately labeled and transported to the mycology laboratory for KOH examination. It took about 30 minutes for study participants to get their mycology results.

Blood sample for TPHA: 1 milliliter(ml) of venous blood sample was taken from the antecubital vein of every patient who fulfilled the clinical diagnostic criteria of Pityriasis rosea. This was done by the phlebotomist in the laboratory. The site from which the blood sample was taken was cleaned with moist sterile gauze, disinfected with 70% alcohol, and allowed to air dry. The blood sample was then collected into a separate red top plain labeled vacutainer and transported to the serology laboratory. The TPHA serological test was carried out in the Microbiology department laboratory at MUST. It took about 30 minutes for the study participants to get their TPHA test results.

Steps taken based on the above results: After laboratory results interpretation, feedback to the study participant by the principal investigator was done. Treatment was prescribed by the clinicians in the skin

clinic after review of the KOH and TPHA test results and the patient was booked for follow-up and subsequent management.

Quality control: The research assistants were trained on data collection procedures and conducting interviews. The data collection tool was pre-tested to ensure that it was valid. The skin examination was conducted by the principal investigator with the help of research assistants. There was review of the diagnosis and physical examination findings by qualified Dermatologists.

Study variables: The variables were measured by thorough history taking and physical examination of the skin, oral cavity and nails of the study participants.

Dependent variable: The primary outcome variable was the presence or absence of Pityriasis rosea. Secondary outcomes were the clinical variants of pityriasis rosea.

Independent variables: The independent variables were age, gender, history of atopy, and use of any treatment before seeking dermatological care among others.

Data Management and Analysis: Collected data was verified that it is complete and entered into REDCap® database. Data edit checks were included in the database to minimize data entry errors. Appropriate data cleaning and verification was performed before exporting for data analysis. The data set was imported into Stata® software version 17 for analysis.

Demographic characteristics of study participants: Participants' characteristics was described using median for continuous variables and proportion for categorical variables. The results were presented in a tabular format. Categorical variables were compared using Chi-square test.

To determine the prevalence of Pityriasis rosea among patients attending the Skin clinic at MRRH: Prevalence of pityriasis rosea was computed as a proportion of the study participants with pityriasis rosea among all patients enrolled in the study during the study period. This was reported as a percentage with a 95% CI.

To describe the clinical variants of Pityriasis rosea in the Skin clinic at MRRH: The clinical variants were categorized based on the herald patch, location of the secondary lesions, morphology of the secondary lesions among other categories. Frequency distribution and percentages were used for categorical data.

Ethical considerations: Before the study was conducted, the study proposal was presented for approval to the Department of Dermatology of MUST then it was submitted to FRC and REC(Registration number:MUST-2022-515) for consideration, guidance, and approval. Site clearance was sought from the Hospital Director, MRRH and the research project was approved by UNCST(Registration number:NS435ES). Participants in the study were asked for their informed consent. The study participants were made aware that participation was completely optional, and each participant could refuse to participate in the study or leave the study at any moment without penalty or loss of gains. It was

emphasized that opting out will have no impact on the standard of care patients receive. For the purpose of confidentiality, a unique study participant number was used in place of the patients' names on the questionnaires. To ensure patients' privacy physical examination was performed in a consultation room in the presence of the principal investigator, research assistant, chaperone. or patients' caretaker only. The computer used for data entry, storage, and analysis was protected by a password and was accessed only by the principal investigator. Patients had diagnosis made and an appropriate prescription provided, follow-up, and subsequent management plan formulated by the skin clinic clinical team. Participants provided written informed consent for the study, confidentiality was upheld throughout, and they were assured that the outcomes were only utilized for the stated scientific research goal.

Dissemination of Results: During the study, all study participants and their caregivers present received instant feedback on the findings obtained after the individual interview and examination. Information required for the care of the patients and study findings were shared with the clinical care team. After the study was completed, a dissertation was prepared and the results presented to the Dermatology Department, MUST Faculty of Medicine, MRRH administration and management. Copies of the dissertation were made available to the dermatology department, MRRH, and the MUST University Library. This manuscript has been created and submitted for publication to this journal.

Results

4.1 Demographic characteristics of the study participants

A total of 1,802 participants were included in the study with a median age of 22 years. A significant difference in the age-group distribution and gender between participants with and without pityriasis rosea was noted. This is demonstrated by the significant P values highlighted in Table 1 below.

Majority of patients with Pityriasis rosea, were between the ages of 21-30 years with a median age of 20.5. The next predominant age- group is that between 11-20 years.

The least number of cases were between the ages of 31-50 years. The youngest and oldest patients with pityriasis rosea were found to be 2.5 years and 50 years respectively. Most of the patients suffering from Pityriasis rosea were females with a male: female ratio of 1: 2.6. This is summarized in Table 1 below.

Table 1 : Dermographic characteristics of the study participants

Characteristic		Total N= 1,802	PITYRIASIS ROSEA		P values
		N (%)	NO N=1748	YES N=54	
			N (%)	N (%)	
Age (years)	Median (Interquartile range, IQR)	22.0 (9-34)	22.0 (9-35)	**20.5 (11-25)**	0.06
	0-10	495 (27.5)	484 (27.7)	11 (20.4)	**0.002**
	11-20	325 (18.0)	309 (17.7)	16 (29.6)	
	21-30	429 (23.8)	408 (23.3)	**21 (38.9)**	
	31-40	248 (13.8)	245 (14.0)	3 (5.6)	
	41-50	133 (7.4)	130 (7.4)	3 (5.6)	

	>50	172 (9.5)	172 (9.8)	0 (0)	
Gender	Male	746 (41.4)	731 (41.8)	15 (27.8)	**0.039**
	Female	1,056 (58.6)	1,017 (58.2)	**39 (72.2)**	
Residence (District)	Mbarara	1118 (62.0)	1080 (61.8)	38 (70.4)	0.37
	Isingiro	136 (7.6)	131 (7.5)	5 (9.3)	
	Bushenyi	58 (3.2)	56 (3.2)	2 (3.7)	
	Others	490 (27.2)	481 (27.5)	9 (16.7)	

4.2 Prevalence of Pityriasis rosea among patients attending the Skin clinic at MRRH

Out of the 1802 participants recruited, **54** had Pityriasis rosea giving the prevalence of Pityriasis rosea among patients attending the Skin clinic at MRRH of **3.0%** (95% Confidence interval: 2.3-3.9).

4.3 Clinical variants of Pityriasis rosea among patients attending the Skin clinic at MRRH

Majority of patients, 33 (61.11%) presented within 2 weeks of onset of the rashes. 18 (33.33%) presented between 2 weeks and 8 weeks from onset of the rashes while only a few, 3 (5.56%) presented with rashes lasting more than 8 weeks.

Nearly all patients, 50 (92.60%) presented with itch as one of their symptoms. Minority of the patients, 6 (11.11%) had constitutional symptoms prior to the onset of the rash. These symptoms included fever, headache and chills. Only 9 (16.67%) of patients had constitutional symptoms with the rash. This included fever, headache, body weakness, cough, running nose and dryness of the nose. Half of the patients, 27 (50.00%) reported a history of a herald patch.

Only 6 (11.11%) of the patients had used some medications prior to the rash. Amoxicillin, Ciprofloxacin, Erythromycin, Clotrimazole, Diclofenac, Cetirizine and Omeprazole were among the medications mentioned by the patients. Majority of patients, 43 (79.63%) had used some forms of treatment for their rash prior to visiting the skin clinic. These ranged from herbs, topical medications such as Betamethasone, Ketoconazole, Miconazole/Clotrimazole/ Gentamicin (MCG) cream , Calamine lotion, oral medicines such as Griseofulvin, Itraconazole, Acyclovir, Erythromycin, Amoxicillin, Dexamethasone, Cetirizine and injectable drugs such as Procaine benzylpenicillin.

Few patients 8 (14.81%) reported to have a similar rash before and most of them had their previous episodes less than one year before the current rashes. 16 (29.63%) of the patients had a history of atopy and only 2 (3.70%) had lymphadenopathy with the posterior auricular, axillary and inguinal lymph nodes involvement.

The clinical characteristics of pityriasis rosea patients are summarized in Table 2 below.

Table 2 : Clinical characteristics of patients with Pityriasis rosea

N=54

Characteristics		Number of patients, n (%)
Duration of rash	Acute: 2 weeks or less	**33 (61.11)**

	Subacute: more than 2 weeks to 8 weeks	18 (33.33)
	"Chronic": more than 8 weeks	3 (5.56)
Itch	Present	**50 (92.60)**
Constitutional symptoms prior to the rash	Present	6 (11.11)
Constitutional symptoms with the rash	Present	9 (16.67)
History of Herald patch	Present	27 (50.00)
History of medication use or vaccination prior to the rash	Present	6 (11.11)
History of treatment for the rash prior to Skin Clinic visit	Present	43 (79.63)
History of similar rash in the past	Present	8 (14.81)
History of Atopy	Present	16 (29.63)
Lymphadenopathy	Present	2 (3.70)

Nineteen (thirty five percent) of patients with Pityriasis rosea were found to have a herald patch on examination of the skin. All those with a herald patch had a single herald patch. Most of the herald patches, 15 (78.95) were less than 5cm in diameter while a few, 4 (21.05%) were larger than 5 cm in its widest diameter. Most of those with a herald patch had it on the upper extremity in 5 (26.32%) followed by the lower extremity in 4 (21.05%) of the cases. Among the herald patches we found, an oval shape was the most predominant noted in 12 (63.16%) of the herald patches and majority of the herald patches, 11 (57.89%) were violaceous in color.

Papules and plaques were the predominant lesions seen at 47 (87.04%) and 34 (62.96%) respectively while follicular papules, urticarial papules, eczematous papules/plaques, and urticarial plaques occurred least commonly at 2 (3.70%), 2 (3.70%), 1(1.85%) and 1 (1.85%) respectively.

Most of the patients had more than one morphology of the lesions present on their skin hence demonstrating a polymorphic presentation of pityriasis rosea among our patients.

Majority had the skin lesions on the trunk in 51 (94.44%) and the upper extremities in 51 (94.44%) of the patients. The groin and palm were the least involved sites noted in 1 (1.85%) and 1 (1.85%) of the patients each. Most of the patients had skin lesions in more than one location of the skin surface.

Almost all the patients, 52 (96.30%) had a symmetrical distribution of the rash. Nearly half of the patients, 26 (48.15%) had the " Christmas tree" pattern distribution of the rash. Only 2 (3.70%) of patients had localized lesions, 1 had the lesions localized on the anterior trunk and the other had them localized on the upper extremity. None of our patients had oral nor nail involvement.

The clinical variants of pityriasis rosea described are summarized in Table 3 below.

Table 3 : Clinical variants of Pityriasis rosea
N=54

Variant categories Variants based on the herald patch	Specific variants	Number of patients, n (%)
Number of herald patches	Single	**19 (35.19)**
	No herald patch	35 (64.81)
Size of herald patch	5cm and smaller	**15 (78.95)**
	More than 5cm	4 (21.05)
Location of herald patch	Upper Extremity	**5 (26.32)**
	Lower Extremity	**4 (21.05)**
	Trunk	3 (15.79)
	Neck	3 (15.79)
	Axilla	3 (15.79)
	Face	1 (5.26)
Shape of herald patch	Oval	**12 (63.16)**
	Round	7 (36.84)
Color of herald patch	Violaceous	**11 (57.89)**
	Hyperpigmented	4 (21.05)
	Brown (skin coloured)	2 (10.53)
	Erythematous	2 (10.53
Morphologic variants of the secondary eruptions	Papules	**47 (87.04)**
	Plaques	**34 (62.96)**
	Macules	30 (55.56)
	Patches	28 (51.85)
	Follicular papules	2 (3.70)
	Urticarial papules	2 (3.70)
	Urticarial plaques	1 (1.85)
	Eczematous papules and plaques	1 (1.85)
Variants based on the distribution sites of the secondary eruptions	Trunk	**51 (94.44)**
	Upper extremities	**51 (94.44)**
	Neck	39 (72.22)
	Lower extremities	34 (62.96)
	Face	17 (31.48)
	Axilla	15 (27.78)
	Scalp	5 (9.26)
	Groin	1 (1.85)
	Palm	1 (1.85)
Variants based on the distribution pattern of secondary eruptions	Symmetrical	**52 (96.30)**
	“Christmas tree” pattern	**26 (48.15)**
	Localized (Asymmetric)	2 (3.70)

Photographs of the clinical variants are shown below, the figures 3 to 5 show herald patches in different locations and in various sizes while figures 6 to 10 show the various morphologies, distribution sites and patterns of skin lesions of Pityriasis rosea we examined.

Figure 2: Herald patch on the lower extremity

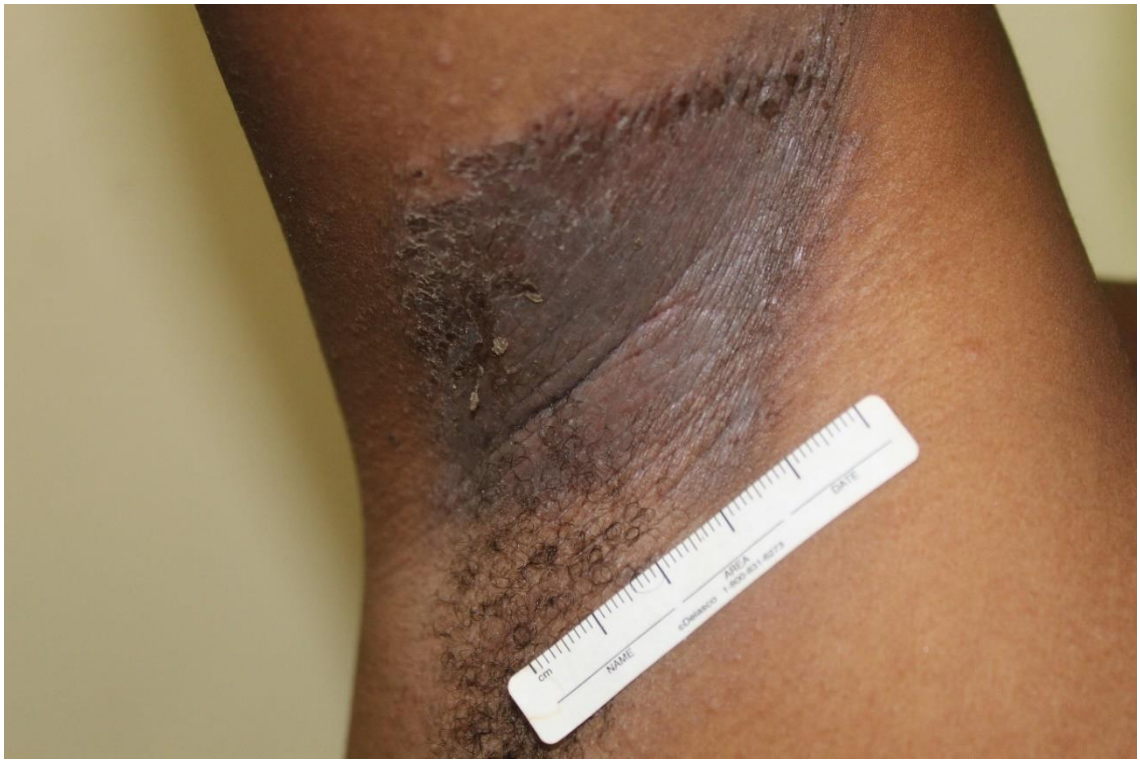


Figure 3 : Herald patch in the axilla

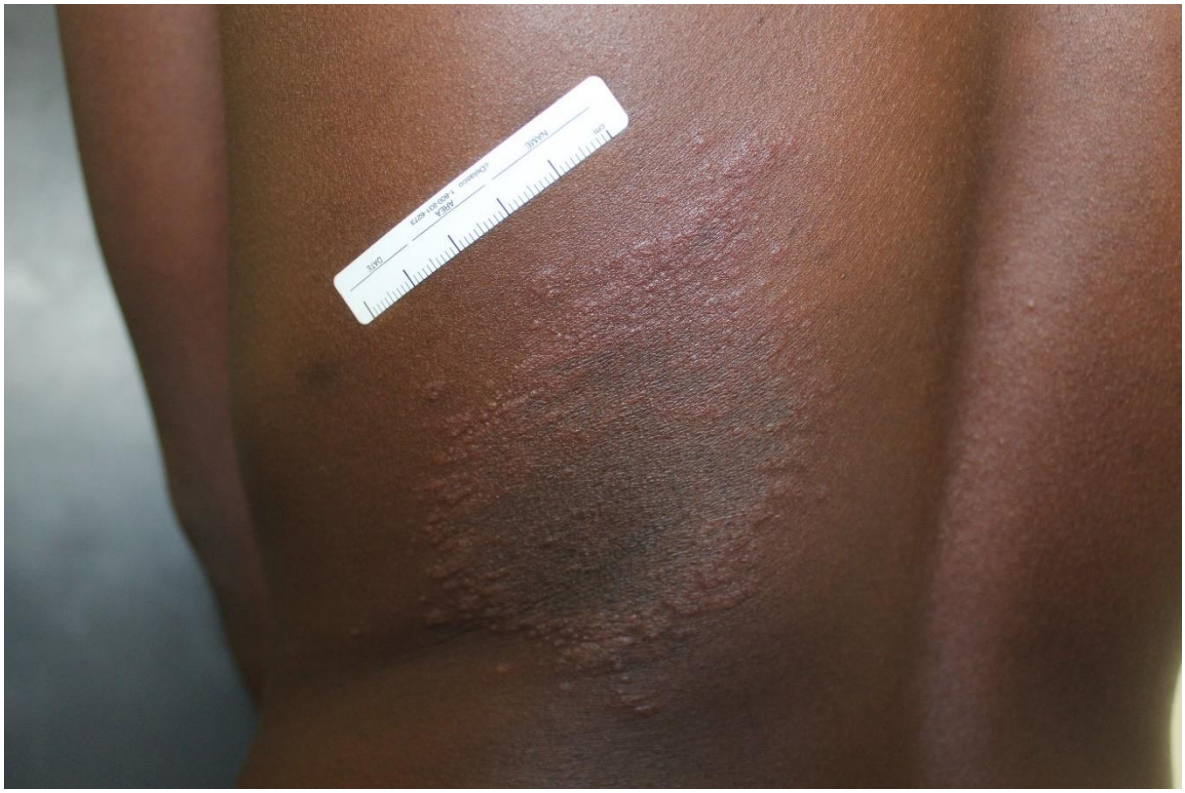


Figure 4 : Gigantea pityriasis rosea of Darier

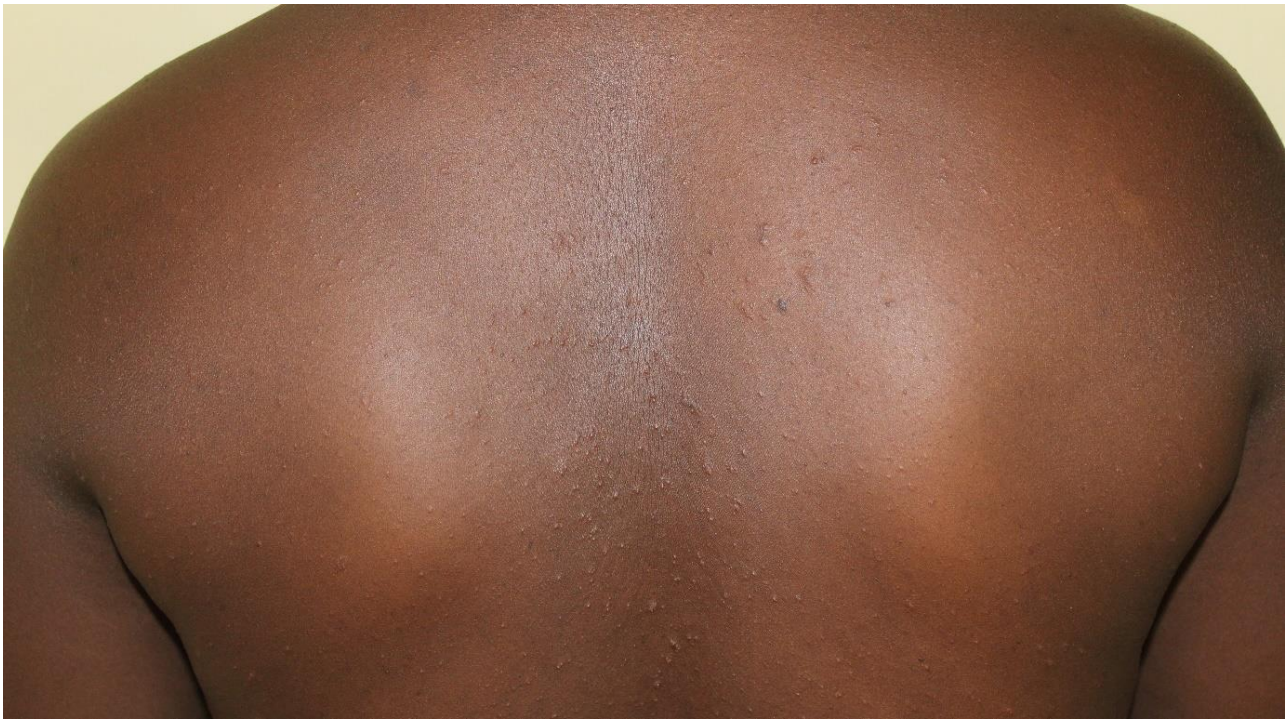


Figure 5 : Papular variant of Pityriasis rosea

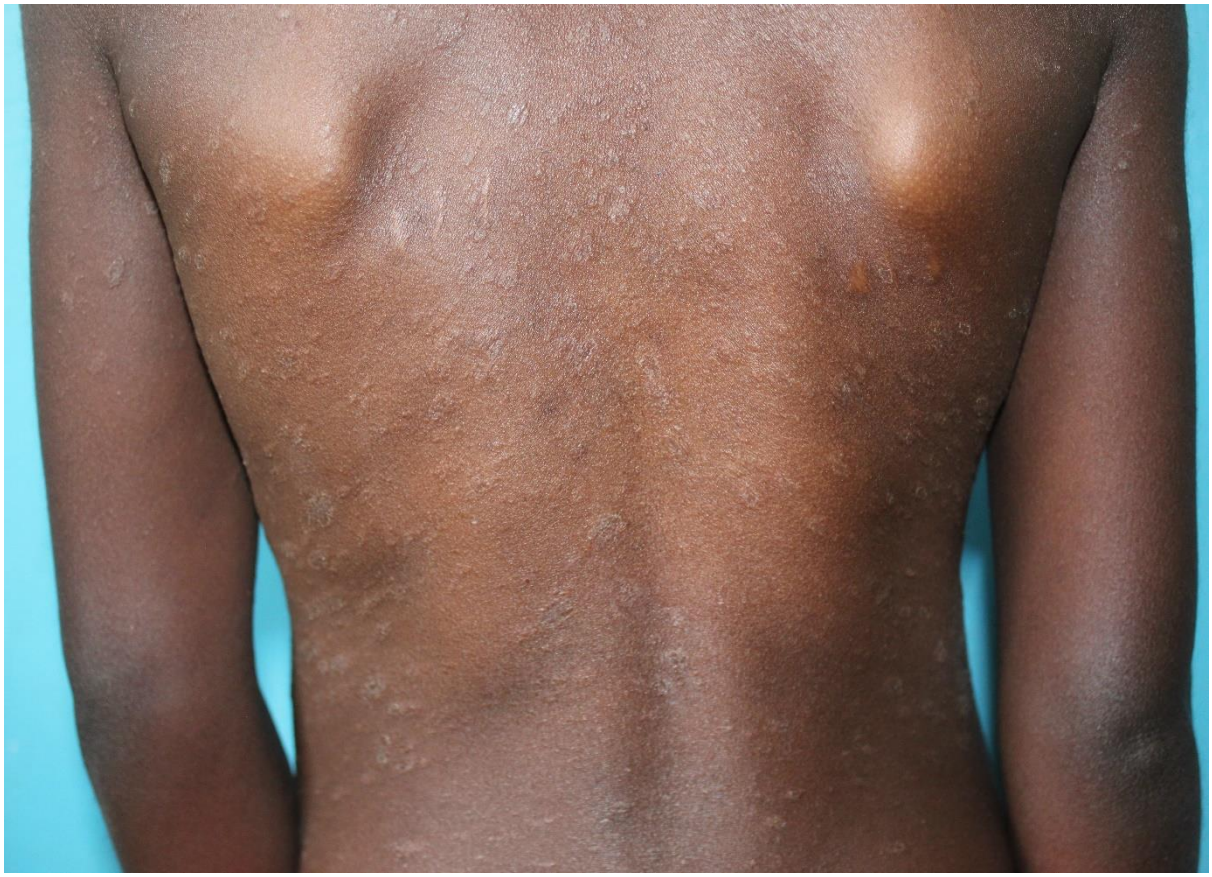


Figure 6 : Polymorphic rash with " Christmas-tree " pattern of distribution

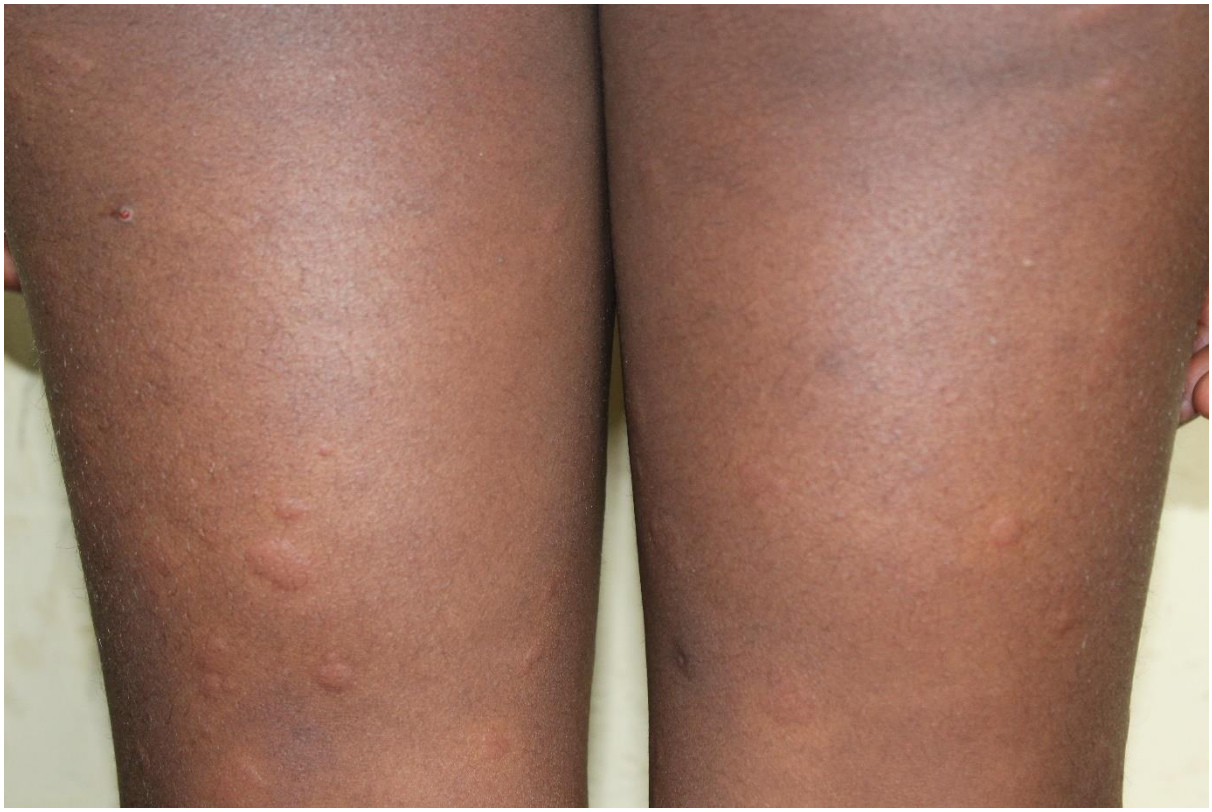


Figure 7 : Urticarial papules and plaque

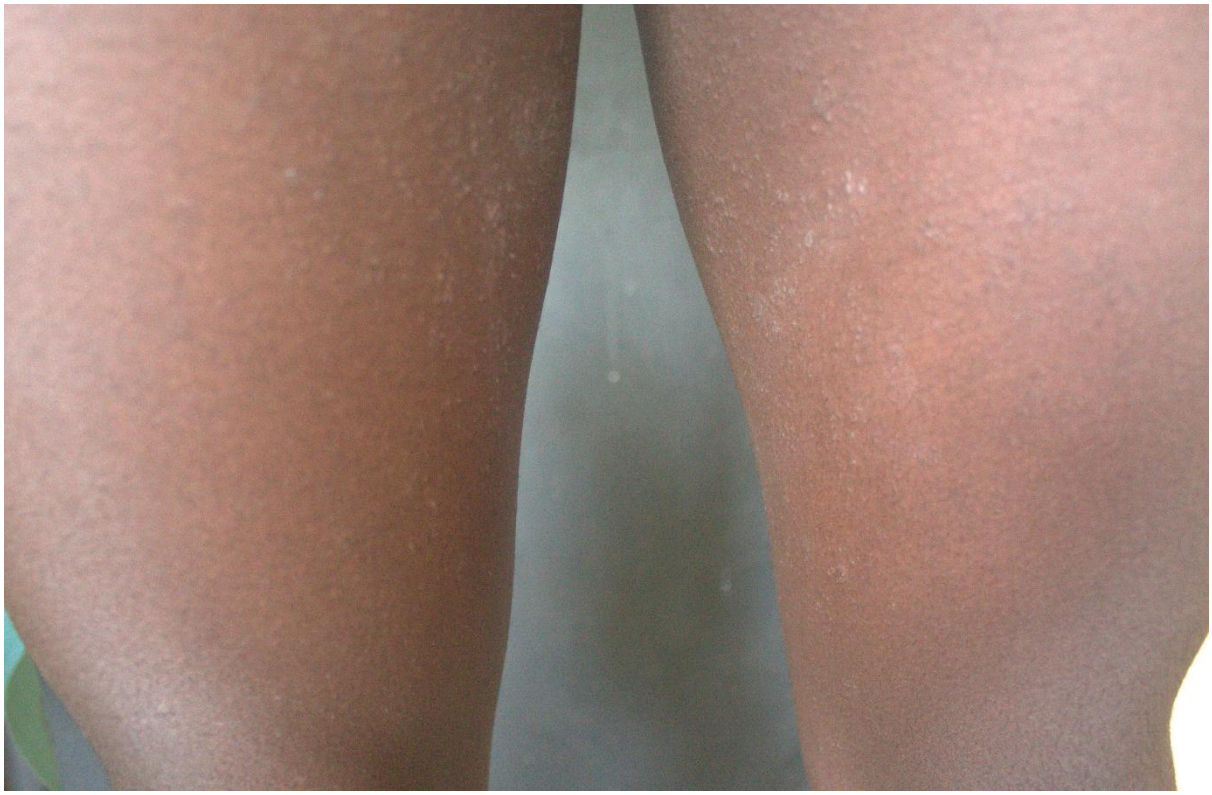


Figure 8 : Follicular papules on the lower extremities

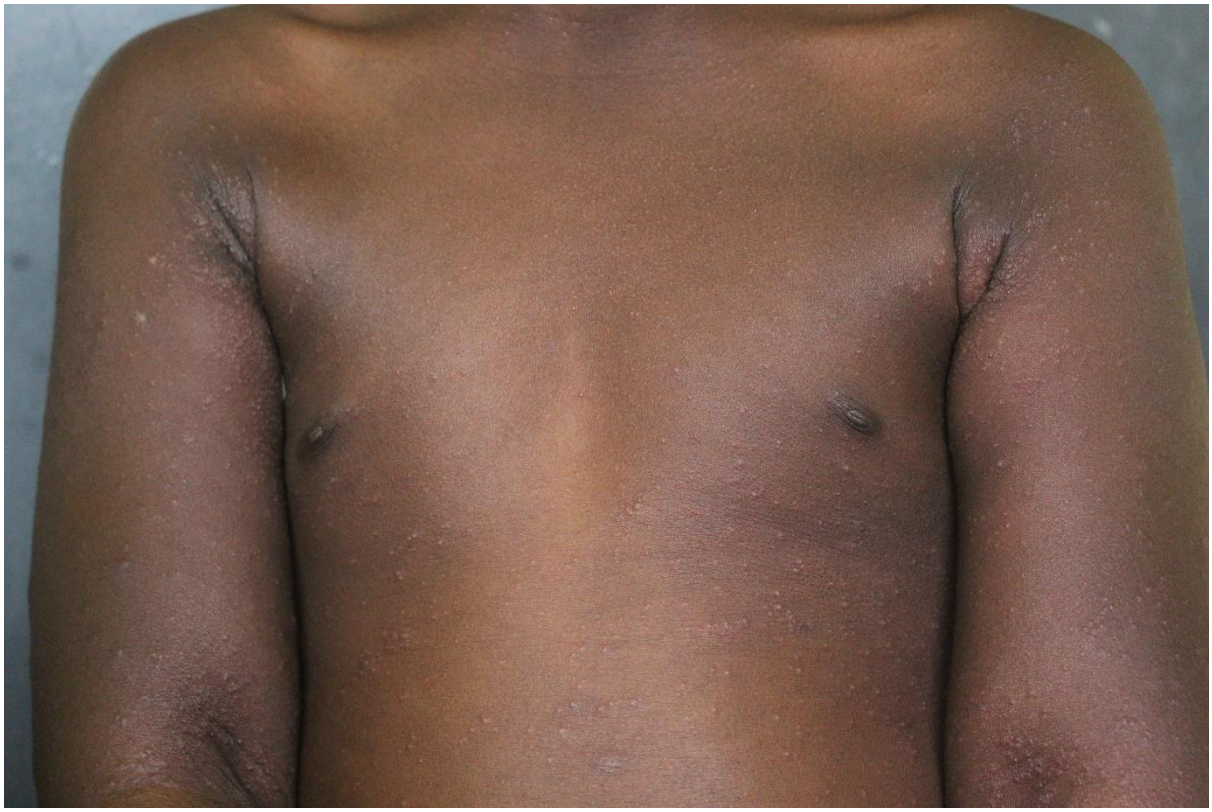


Figure 9 : Eczematous papules and few plaques

Discussion

Prevalence of Pityriasis rosea

The prevalence of 3.0% obtained in this study demonstrates that Pityriasis rosea is seen often among patients attending the Skin Clinic at MRRH in Uganda. This is comparable to a study done in Nigeria in which 3.6% of patients seen were found to have Pityriasis rosea(Yusuf et al., 2018). The similarity in this regard is probably because of similar study settings and patient characteristics. On the other hand, other studies have recorded lower prevalence values than the present study. A retrospective study carried out in Saudi Arabia reported a prevalence of 1.4%(Shahzad et al., 2013). This variation may be related to differences in study design, geographical, environmental and patients' characteristics. A study conducted in Turkey reported a prevalence of 1.27%, this lower prevalence in contrast to this present study's finding could be explained by difference in study population in that the study in Turkey was limited to the pediatric population(GüL et al., 2008). In a current review of the *All of Us* database in the United States of America, an overall prevalence of 0.21% was reported. This is lower than our finding due to the fact that the *All of Us* database is organized by billing codes hence likely missed cases of Pityriasis rosea simply coded as "rash"; hence representing an underestimate of true prevalence of this disease. In addition, their data set did not include patients younger than 18 years of age(Joshi et al., 2022).

We found out that Pityriasis rosea is predominant between the ages of 21-30 years with a median age of 20.5. Similar to findings from India that showed majority of participants between 20-30 years(Azmi, 2021). Contrary, in Nigeria and Khartoum, Northern Sudan pityriasis rosea was predominantly seen in 11-20 years olds(Yusuf et al., 2018, Ahmed, 1986) likely due to earlier exposure to trigger factors among these populations.

Our study showed that Pityriasis rosea affects females more than males with a male: female ratio of 1: 2.6. This is comparable to the study done in Nigeria that reported a male: female ratio of 1: 1.4 and another in Sudan with the finding of 1: 1.5 male: female ratio(Yusuf et al., 2018, Ahmed, 1986).This is in contrast to a study performed in India that recorded more males affected by pityriasis rosea with male: female ratio of 1: 0.62(Azmi, 2021).

Clinical variants of Pityriasis rosea

Regarding variants based on the herald patch, we noted that 19 (35.19%) of patients presented with a herald patch upon skin examination. This finding is not comparable to other studies that found a herald patch in larger proportions their patients. A study conducted in a tertiary health care facility in North-Eastern India reported a herald patch in 24 (70.48%) of the patients(Azmi, 2021). The study done in Nigeria, 45 (80%) of the patients had herald patches(Yusuf et al., 2018). In the study carried out in Sudan, 54 (66.7%) of patients had herald patches(Ahmed, 1986). This contrast may probably due to either earlier resolution of herald patches or late presentation with resolution of herald patches in our patients. In addition, our patients may have been unable to recall the occurrence of a herald patch owing to their delayed presentation to the skin clinic. A retrospective study done in Singapore found a lower proportion of patients with a herald patch noted in 63 (17%) of the patients(Tay, 1999). All our patients with a herald patch, 19 (100%) had a single one. This is similar to the finding of the study in Nigeria that reported 42 (93%) with a single herald patch while 3 (7%) were found to have multiple herald patches(Yusuf et al., 2018). This is in contrast to the study in Sudan that recorded a single herald patch in 48 (88.9%) and multiple herald patches in 6 (11%) of the patients(Ahmed, 1986). This may be a unique presentation due to geographical variation. Four (twenty one percent) of our patients were found to have giant herald

patches (larger than 5cm), this is referred to as Gigantea pityriasis rosea of Darier. Majority of herald patches in our cases were found on the extremities, neck and axilla in contrast to findings in India and Nigeria which both reported herald patches predominantly on the trunk in 16 (47.05%) and 32 (72%) respectively(Azmi, 2021, Yusuf et al., 2018).

In terms of variants based on the morphology of the secondary eruption, we noted a polymorphic presentation with a predominant papular and plaque variants at 47 (87.04%) and 34 (62.96%) of the cases. This is similar to the study conducted in Nigeria that reported plaque variant being the most common seen in 33 (59%) of the patients while 22 (39%) had the papular variant(Yusuf et al., 2018). Another study among Black American children with Pityriasis rosea, 34% of them presented with papular lesions(Amer et al., 2007). These similarities may be due to similarity in skin phenotype. The least seen variants were urticarial papules, urticarial plaques, eczematous papules/plaques and follicular papules in 2 (3.70%), 1 (1.85%), 1 (1.85%) and 2 (3.70%) respectively similar to findings in Nigeria and Singapore(Yusuf et al., 2018, Tay, 1999).

As for the variants based on the distribution sites of the secondary eruption, the trunk and upper extremities were the most prevalent at 51 (94.44%) each. This is akin to findings reported in Singapore, Nigeria and Sudan in which the trunk was the predominant distribution site(Tay, 1999, Yusuf et al., 2018, Ahmed, 1986).

In addition, our findings of lesions involving the face and scalp in 17 (31.48%) and 5 (9.26%) respectively which mostly occurred in children agrees with those of a study in the United States of America among Black American children in which facial lesions and scalp lesions were reported in 30% and 8% respectively(Amer et al., 2007). This is likely due to similarity in patient characteristics including skin phenotype.

About the variants based on the distribution pattern of the secondary eruption, majority of our patients, 52 (96.30%) presented with symmetrical pattern of the lesions. Our results are comparable to those of the study done in Nigeria in which 39 (70%) of the patients had a symmetrical distribution of the lesions(Yusuf et al., 2018). We found that the " Christmas tree pattern" was a significant presentation at 26 (48.15%) of our patients as seen in Nigeria(Yusuf et al., 2018). 2 (3.70%) of our patients had the localized variant. This is akin to the study conducted in India where they reported 1 (2.94%) of their patients presented with the localized variant. Our finding is not comparable to the study carried out in Nigeria in which 6 (10%) of the patients were reported to have presented with the localized variant(Yusuf et al., 2018).

None of our patients had lesions in the oral mucosa. This is similar to the study conducted in Sudan(Ahmed, 1986).However our findings regarding oral mucosa involvement contradicted the findings of a retrospective study done in Italy whereby 149 (28%) of the patients were recorded to have oral lesions(Ciccarese et al., 2017). This variation from our findings is likely due to different trigger factors and immunologic mechanisms for pityriasis rosea in the different populations.

Study limitations: The prevalence obtained is hospital-based and may not reflect the prevalence of pityriasis rosea in the general population. In addition, point assessment of the study participants could not provide information on different clinical presentations over the course of the disease. Lastly, use of TPHA test alone to rule out secondary syphilis may have led to exclusion of participants who had positive TPHA results because of previous infection by *Treponema pallidum pallidum* even though they had no current active infection at the time of evaluation.

Conclusion

The prevalence of Pityriasis rosea among patients attending the skin clinic at MRRH was 3.0%, with a median age of 20.5 and peak incidence of 21-30 years with female predominance. Many of the pityriasis rosea patients presented with itch as one of their symptoms, were seen within 2 weeks of onset of the rash mostly having tried using some form of treatment. A few had a herald patch, presented with a polymorphic eruption predominated with papules and plaques, lesions mostly occurred on the trunk and upper extremities with a symmetrical pattern without oral nor nail involvement

Disclosure

The authors have no conflict of interest in this work.

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