Original Article:

A cross-sectional study of dermoscopic patterns and their associations with clinical findings in KOH-confirmed tinea corporis

Noor-E-Jannat[1], Abida Sultana[2], A. T. M. Asaduzzaman[2], Lubna Khondker[2], Mohammad Abul Kalam Azzad[2], Md. Alauddin Khan[2], Mohammad Rahmat Ullah Siddique[2], Wasi Deen Ahmed[4], Ishita Saha[5], Farha Zaman[2], Halima Khatun[6], Samipa Mukherjee[3]

1. Aurora Skin & Aesthetics, Dhaka, Bangladesh
2. Bangladesh Medical University, Dhaka, Bangladesh
3. The Skin Hair Nail Clinic, Bengaluru, India
4. Dhaka Medical College Hospital, Dhaka, Bangladesh
5. Bangladesh Secretariat Clinic, Dhaka, Bangladesh
6. OSD,DGHS, Dhaka, Bangladesh

Abstract

Background: Tinea corporis is a common superficial fungal infection in Bangladesh. Dermoscopy is a noninvasive tool that can enhance clinical diagnosis by revealing characteristic patterns.

Objective: To characterize dermoscopic patterns in KOH-confirmed tinea corporis and evaluate their association with clinical findings.

Methods: A cross-sectional study was conducted at the Department of Dermatology and Venereology, Bangladesh Medical University, Dhaka, Bangladesh, involving 46 patients with KOH-confirmed tinea corporis. Dermoscopic examination was performed using a DermLite DL5 (3Gen, USA), with images captured using a Vivo V27e smartphone. Characteristic dermoscopic patterns were documented. Skin scrapings were examined by 20% KOH microscopy, and the collected data were analyzed using SPSS version 26. Chi-square test or Fisher exact test was applied to assess the association between clinical and dermoscopic findings .

Results: The study showed a mean age of 29.7 years, with a female predominance (54.3%). The waist was the most affected site (71.7%), and multiple annular lesions were the most common presentation (78.3%). Dermoscopy revealed several scaling patterns; the "annular arrangement with inward free margin" was a consistent and novel finding across lesion types and sites ($p < 0.05$). "Translucent vellus hair" was associated with longer disease duration ($p = 0.017$), background color changes with comorbidities ($p = 0.038$), and scales along skin creases with fewer lesions ($p = 0.006$) ($p < 0.05$ considered significant).

Conclusion: The "annular arrangement with inward free margin" is a consistent dermoscopic finding in KOH-confirmed tinea corporis. Dermoscopic patterns showed significant associations with clinical characteristics supporting the utility of dermoscopy as a valuable adjunctive tool for bedside evaluation and early diagnosis.

Keywords: Dermoscopy, Dermoscopic patterns, Tinea corporis, Potassium hydroxide, Annular arrangement with inward free margin

Introduction

Tinea corporis is a superficial dermatophyte infection of the skin, excluding the scalp, face, beards, groin, hands, feet, and nails[1]. Tinea corporis generally presents as one or more erythematous, round or oval, scaly plaques with sharply demarcated advancing margins[1]. Globally, dermatophyte infections are estimated by the World Health Organization (WHO) to affect 20–25% of the population[2]. In Bangladesh, documented prevalence of tinea corporis is 37.4%, identifying Trichophyton mentagrophytes as the predominant pathogen, followed by Trichophyton rubrum, with an incidence of 56.9%[2].

Several factors contribute to recurrent or persistent

Corresponding author
Noor-E-Jannat, Consultant, Aurora Skin & Aesthetics, Dhaka, Bangladesh, Email: drnejannat@gmail.com, https://orcid.org/0009-0000-8229-7546
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infections, including hot and humid climates, chronic illnesses, overcrowding, poor hygiene, and sharing contaminated towels or clothing[3]. In Bangladesh, lack of awareness and misdiagnosis by non-specialists further worsen the problem. Dermatophytes infect the host by producing arthroconidia that adhere to keratinocytes and develop into hyphae; colonization of the fungus causes an increase in keratinocyte turnover time[4].

Tinea corporis is primarily diagnosed clinically, with confirmation provided by skin scraping for fungus microscopic examination (KOH mount) and culture. Conventional methods are time-consuming and laboratory dependent, whereas PCR offers higher sensitivity but is costly and requires specialized expertise[4]. Laboratory studies report positivity rates of microscopy (59.3%) and culture (40%)[5]. In Bangladesh, studies showed microscopy positive in 12.9% and culture in 4.84% of cases, with 82.26% positive by both methods and all culture-positive isolates confirmed by PCR[2]. These findings highlight that reliance solely on clinical or laboratory methods may miss a significant number of cases.

Dermoscopy, first developed for assessing pigmented lesions, is now increasingly applied in general dermatology[6]. Portable dermoscopes, including smartphone-adapted devices, have become valuable for patient documentation[7].

Dermoscopic findings in tinea corporis consistently featured brown to black dots, globules, and white scales in all cases [8]. Lesions of shorter duration (26.66%) showed additional features like red dots, dotted vessels, reddish-brown dots, and globules, while those with longer duration (73.33%) mainly displayed brown to black dots and globules. Vellus hair changes were also seen in 16.66% of patients.

Common dermoscopic findings included peripheral whitish scales, considered a hallmark present in 100% cases and brown spots with a white or yellowish halo, indicating late lesions[9]. Vellus hair changes such as translucent hair, broken hair, black dots, and “morse code” or “bar code” hair have also been reported[10]. Previous study described diffuse erythema, perifollicular scaling, micropustules, vellus hair involvement, and brown dots as characteristic signs[11].

In dermoscopy, a reddish-brown background indicates serum, red blood cells, and hemosiderin deposition from intense scratching, reflecting infection duration[12]. Peripheral whitish scales correspond to hyperkeratosis[9], micropustules reflect epidermal neutrophilic abscesses[8] and vellus hair changes indicate fungal invasion into hair and suggest the need for systemic therapy for complete cure[10].

Diagnosing dermatophytosis is usually straightforward but can be challenging in atypical or inadequately treated cases, as conditions like nummular eczema, contact dermatitis, impetigo, psoriasis, and pityriasis rosea may present with pruritic, scaly lesions[13]. Tinea corporis can be differentiated dermoscopically by a reddish-brown background, peripheral white and perifollicular scales, vellus hair changes, and black or red globules. Other dermatoses show distinct patterns: nummular eczema – scales along skin lines, serocrusts and yellow clod sign; pityriasis rosea – peripheral scales and brown dots; psoriasis – regular red dots, homogenous pink background, diffuse white scales; lichen planus – central and peripheral white scales, diffuse red dots, and Wickham striae[8].

Given the limited evidence from Bangladesh and variability in reported dermoscopic features, this cross-sectional study aimed to characterize dermoscopic patterns in KOH-positive tinea corporis. By facilitating early and reliable recognition, dermoscopy may support timely treatment and help promote standardized, cost-effective management.

Materials and Methods

Study design:

This cross-sectional study was conducted from December 2023 to August 2025 in the Department of Dermatology and Venereology, Bangladesh Medical University, Dhaka, Bangladesh, after obtaining institutional ethical clearance and approval of the study protocol from the Institutional Review Board (IRB) of the same institute.

Inclusion and exclusion criteria:

Patients of all age groups and both sex with KOH-positive tinea corporis involving the trunk and extremities were included. Patients receiving prolonged antifungal therapy (more than 1 month for topical and more than 6 months for systemic antifungal drugs) or with known cases of psoriasis, lichen planus, nummular eczema, pityriasis rosea, and pityriasis versicolor, were excluded.

Sample size:

The sample size was calculated using the formula described based on an expected sensitivity of 95%, a 10% allowable error, and an estimated prevalence of 40% in the outpatient setting[2,14,15]. The calculated sample size was 46. Consecutive sampling method was used to select eligible participants.

Study Procedure

Clinical Assessment:

Patients with clinically suspected tinea corporis were referred from the Dermatology and Venereology OPD. Each case was evaluated and confirmed independently through patient’s history (including age, sex, residence,

occupation, and duration of lesions) and clinical examination (including site, number, and morphology of lesions), with experts supervising doubtful cases. Eligible patients with characteristic annular, scaly, pruritic lesions were consecutively recruited according to the predefined inclusion and exclusion criteria. Written informed consent was obtained after explaining the study objectives and procedures.

Dermoscopic Examination:

Dermoscopy was performed by DermLite DL5(polarized, USA) after obtaining consent for photography and adequate lesion exposure. The dermoscope's contact plate was sanitized and covered with a protective lens before each examination. In patients with multiple lesions, the most accessible active border was selected. Multiple polarized images were captured using a Vivo V27e smartphone (Model V2237; 64-MP OIS main camera, f/1.79 aperture) attached to the dermoscope at 10× magnification, with an additional 1.8–2.0× digital zoom when required. Images were saved in JPEG format with corresponding clinical photographs for expert assessment, and findings were recorded using a semi-structured questionnaire.

Microbiological Examination:

Skin scrapings were collected from the active inflammatory margins after cleansing with 70% alcohol and examined by KOH microscopy. Specimens were treated with 20% KOH, covered with a coverslip, gently heated, and examined after 30 minutes under an Olympus CX23 binocular microscope at 10× and 40× magnification. Dermatophytes were identified by the presence of long, branched, septate hyphae with or without arthroconidia.

Statistical Analysis:

After data collection, the data were checked for completeness and consistency and analyzed using SPSS version 26 for Windows 10 (IBM Corp., Armonk, New York). Categorical variables were expressed as frequencies and percentages, while continuous variables were expressed as mean and standard deviation. The chi-square test or Fisher's exact test was applied as appropriate. A p-value <0.05 was considered statistically significant.

Ethical Considerations:

The study protocol was approved by the Institutional Review Board (IRB) of Bangladesh Medical University (Approval No. BSMMU/2023/15278; IRB registration no.4749). Written informed consent was obtained from all participants, with parental or legal guardian consent for those under 18 years. The study adhered to the Declaration of Helsinki, with strict maintenance of patient confidentiality and data anonymity.

Quality Assurance Strategy:

Quality was ensured through a 10-day preparatory dermoscopy training course under an experienced trainer in Bengaluru, India, followed by regular expert instruction and image-review sessions. Each participant and dermoscopic image was assessed systematically, with careful attention to accuracy and detail. All study records and participant information were maintained confidentially.

Results

Among 46 patients, the mean age was 29.7 ± 17.6 years (range 2–66), with females comprising 54.3%. Most participants were from rural areas (52.2%), and students (43.5%) and housewives (32.6%) were the predominant occupational groups. Disease duration was <3 months in 60.9% of cases (mean 3.01 ± 1.84 months), and 23.9% had comorbidities. The waist was the most commonly affected site (71.7%), followed by the axilla (54.3%) and thigh (47.8%). Most patients had ≥5 lesions (73.9%), with annular morphology predominating (78.3%).

The most frequent dermoscopic findings were diffuse erythema (60.9%) and an annular scale arrangement with an inward free margin (84.8%), followed by red (56.5%) and brown (43.5%) dots/globules. Translucent hairs were significantly more frequent in lesions of ≥3 months' duration (55.6% vs. 14.3%, p = 0.017), while diffuse brown pigmentation was associated with comorbidities (36.4% vs. 11.4%, p = 0.038). Scales along skin creases were significantly more common in patients with <5 lesions (75.0% vs. 29.4%, p = 0.006). The annular scale arrangement with an inward free margin was consistently observed across lesion morphologies, occurring in 83.3% of annular, 100% of serpiginous, and 75.0% of polycyclic lesions.

Table 1: Clinical characteristics

Clinical variables	Frequency	Percentage (%)
Site of lesions		
Chest	18	39.1
Axilla	25	54.3
Shoulder	1	2.2
Neck	2	4.3
Back	19	41.3
Waist	33	71.7
Thigh	22	47.8
Leg	18	39.1
Arm	16	34.8
Forearm	15	32.6
Buttock	3	6.5
Breast	2	4.3
Number of lesions		
<5	12	26.1
≥5	34	73.9
Morphology		
Annular	36	78.3
Serpiginous	6	13.0
Polycyclic	4	8.7

Table 2: Observed Dermoscopic patterns in study participants(n=46)

Dermoscopic pattern	Frequency	Percentage
1. Background color		
Diffuse erythema	**28**	**60.9**
Diffuse brown pigmentation	**8**	**17.4**
Focal erythema	**10**	**21.7**
2. Superficial Scales		
Peripheral moth eaten	**24**	**52.2**
Perifollicular scales	**14**	**30.4**
Annular arrangement with inward free margin	**39**	**84.8**
Scales along skin creases	**19**	**41.3**
3. Vascular changes		
Red dots and globules	**26**	**56.5**
Brown dots and globules	**20**	**43.5**
4. Micropustules		
Follicular	**4**	**8.7**
Non-follicular	**16**	**34.8**
None	**26**	**56.5**
5. Vellus hair changes		
Translucent hair	**14**	**30.4**
Broken hair	**7**	**15.2**
Morse code hair	**10**	**21.7**
None	**15**	**32.6**

Table 3: Association between dermoscopic patterns and disease duration in participants with tinea corporis (n=46)

Dermoscopic pattern	<3 months (n=28)		≥3 months (n=18)		p-value
	n.	%	n.	%	
1. Background color					
Diffuse erythema	**15**	**53.6%**	**13**	**72.2%**	
Diffuse brown pigmentation	**6**	**21.4%**	**2**	**11.1%**	**0.506[f]**
Focal erythema	**7**	**25.0%**	**3**	**16.7%**	
2. Superficial Scales					
Peripheral moth eaten	**16**	**57.1%**	**8**	**44.4%**	**0.400[c]**
Perifollicular scales	**7**	**25.0%**	**7**	**38.9%**	**0.318[c]**
Annular arrangement with inward free margin	**24**	**85.7%**	**15**	**83.3%**	**0.826[c]**
Scales along skin creases	**11**	**39.3%**	**8**	**44.4%**	**0.729[c]**
3. Vascular changes					
Red dots and globules	**19**	**67.9%**	**7**	**38.9%**	**0.053[c]**
Brown dots and globules	**9**	**32.1%**	**11**	**61.1%**	
4. Micropustules					
Follicular	**2**	**7.1%**	**2**	**11.1%**	
Non-follicular	**9**	**32.1%**	**7**	**38.9%**	**0.720[f]**
None	**17**	**60.7%**	**9**	**50.0%**	
5. Vellus hair changes					
Translucent hair	**4**	**14.3%**	**10**	**55.6%**	
Broken hair	**5**	**17.9%**	**2**	**11.1%**	**0.017[f]***
Morse code hair	**9**	**32.1%**	**1**	**5.6%**	
None	**10**	**35.7%**	**5**	**27.8%**	

Note:p-value obtained by Chi-square test(c) or Fisher exact test (f), p<0.05 was considered as a level of *significant

Table 4: Association between dermoscopic patterns and comorbidities in participants with tinea corporis (n=46)

Dermoscopic pattern	Comorbidities				p-value
	Yes (n=11)		No (n=35)		
	n.	%	n.	%	
1. Background color					
Diffuse erythema	**7**	**63.6%**	**21**	**60.0%**	
Diffuse brown pigmentation	**4**	**36.4%**	**4**	**11.4%**	**0.038[f]***
Focal erythema	**0**	**0.0%**	**10**	**28.6%**	
2. Superficial Scales					
Peripheral moth eaten	**6**	**54.5%**	**18**	**51.4%**	**0.857[c]**
Perifollicular scales	**1**	**9.1%**	**13**	**37.1%**	**0.133[f]**
Annular arrangement with inward free margin	**9**	**81.8%**	**30**	**85.7%**	**0.754[c]**
Scales along skin creases	**4**	**36.4%**	**15**	**42.9%**	**1.000[f]**
3. Vascular changes					
Red dots and globules	**6**	**54.5%**	**20**	**57.1%**	**1.000[c]**
Brown dots and globules	**5**	**45.5%**	**15**	**42.9%**	
4. Micropustules					
Follicular	**1**	**9.1%**	**3**	**8.6%**	
Non-follicular	**5**	**45.5%**	**11**	**31.4%**	**0.674[f]**
None	**5**	**45.5%**	**21**	**60.0%**	
5. Vellus hair changes					
Translucent hair	**4**	**36.4%**	**10**	**28.6%**	
Broken hair	**1**	**9.1%**	**6**	**17.1%**	**0.101[f]**
Morse code hair	**0**	**0.0%**	**10**	**28.6%**	
None	**6**	**54.5%**	**9**	**25.7%**	

Note:p-value obtained by Chi-square test(c) or Fisher exact test (f), p<0.05 was considered as a level of *significant

Table 5: Associations between dermoscopic patterns and number of lesions in participants with tinea corporis (n=46)

Dermoscopic pattern	Number of lesions				p-value
	<5 (n=12)		≥5 (n=34)		
	n.	%	n.	%	
1. Background color					
Diffuse erythema	8	66.7%	20	58.8%	
Diffuse brown pigmentation	2	16.7%	6	17.6%	0.893[f]
Focal erythema	2	16.7%	8	23.5%	
2. Superficial Scales					
Peripheral moth eaten	5	41.7%	19	55.9%	0.397[c]
Perifollicular scales	5	41.7%	9	26.5%	0.325[c]
Annular arrangement with inward free margin	10	83.3%	29	85.3%	0.871[c]
Scales along skin creases	9	75.0%	10	29.4%	0.006[c]*
3. Vascular changes					
Red dots and globules	7	58.3%	19	55.9%	0.883[f]
Brown dots and globules	5	41.7%	15	44.1%	
4. Micropustules					
Follicular	1	8.3%	3	8.8%	
Non-follicular	2	16.7%	14	41.2%	0.229[f]
None	9	75.0%	17	50.0%	
5. Vellus hair changes					
Translucent hair	4	33.3%	10	29.4%	
Broken hair	0	0.0%	7	20.6%	0.391[f]
Morse code hair	3	25.0%	7	20.6%	
None	5	41.7%	10	29.4%	

Note:p-value obtained by Chi-square test(c) or Fisher exact test (f), p<0.05 was considered as a level of *significant

Table 6: Association between dermoscopic patterns and lesion morphology in participants with tinea corporis (n=46)

Dermoscopic pattern	Annular (n=36)		Serpiginous (n=6)		Polycyclic (n=4)		p-value
	n.	%	n.	%	n.	%	
1. Background color							
Diffuse erythema	22	61.1%	3	50.0%	3	75.0%	
Diffuse brown pigmentation	5	13.9%	2	33.3%	1	25.0%	0.598[f]
Focal erythema	9	25.0%	1	16.7%	0	0.0%	
2. Superficial Scales							
Peripheral moth eaten	18	50.0%	3	50.0%	3	75.0%	0.769[f]
Perifollicular scales	9	25.0%	2	33.3%	3	75.0%	0.127[f]
Annular arrangement with inward free margin	30	83.3%	6	100.0%	3	75.0%	0.457[f]
Scales along skin creases	15	41.7%	3	50.0%	1	25.0%	0.770[f]
3. Vascular changes							
Red dots and globules	21	58.3%	3	50.0%	2	50.0%	0.752[f]
Brown dots and globules	15	41.7%	3	50.0%	2	50.0%	
4. Micropustules							
Follicular	3	8.3%	0	0.0%	1	25.0%	
Non-follicular	12	33.3%	3	50.0%	1	25.0%	0.635[f]
None	21	58.3%	3	50.0%	2	50.0%	
5. Vellus hair changes							
Translucent hair	11	30.6%	2	33.3%	1	25.0%	
Broken hair	7	19.4%	0	0.0%	0	0.0%	0.906[f]
Morse code hair	8	22.2%	1	16.7%	1	25.0%	
None	10	27.8%	3	50.0%	2	50.0%	

Note:p-value obtained by Chi-square test(c) or Fisher exact test (f), p<0.05 was considered as a level of *significant

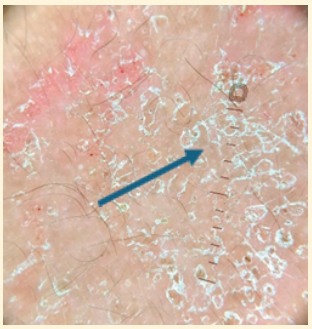


Figure 1.1: Background diffuse erythema, red dots and globules, perifollicular scales, vellus hair changes

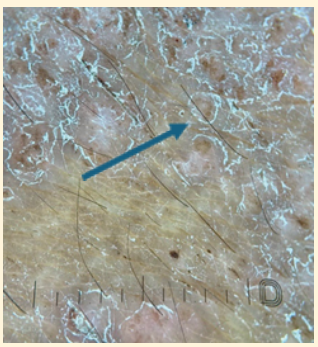


Figure 1.2: Diffuse brown pigmentation with brown globules

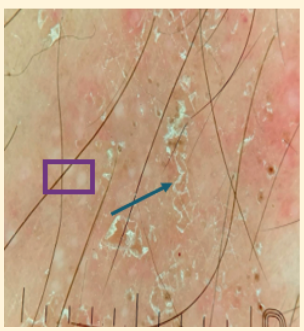


Figure 1.3: Focal erythema with non-follicular micro pustules (purple rectangle) and brown dots and globules

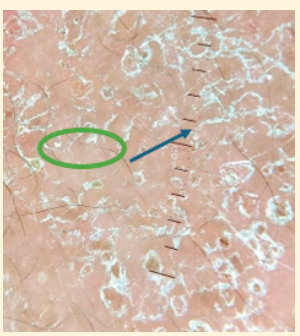


Figure 1.4: Morse code hair(green oval)

Figure 1: Dermoscopic images of tinea corporis(blue arrow indicates "Annular arrangement with inward free margin" scales)

Discussion

This cross-sectional study at Bangladesh Medical University included 46 consecutive patients from the OPD with clinically and microscopically (KOH mount) confirmed tinea corporis. Dermoscopic assessments were performed in the Dermatology and Venereology Department; microscopy and culture for fungus were conducted in the Microbiology and Immunology Department, BMU. Patients of all ages and genders with lesions on the trunk and extremities were included, while those with involvement of the face, scalp, hands, feet, groin, or nails were excluded. The study aimed to evaluate dermoscopic features to support clinical diagnosis of tinea corporis.

In the present study, most clinically suspected tinea corporis cases occurred in individuals under 20 years (41.3%), followed by the 21–30 and over 40 age groups (23.9% each), with a female predominance (54.3%). Similar female predominance was reported and found a 21–30-year-old male-predominant group (M: F ≈ 1.2:1)2,16,17. Studies showed the highest incidence in 20–39-year-olds18, and significant prevalence in the 13–18-year age group ($p < 0.05$)[19].

In this study, 52.2% of the participants were rural residents, 43.5% were students, and 32.6% were housewives. The higher prevalence among females, particularly housewives, may be related to water exposure, covering body with clothing, and sharing of personal items, whereas in younger individuals, outdoor activities, close school contact, and poor hygiene were contributing factors.

Based on the current study results, 60.9% of patients had a disease duration under 3 months, and 39.1% had ≥3 months, with a mean of 3.01 ± 1.84 months, indicating a notable proportion with recurrent or chronic infection. Studies reported similar patterns[17], with a mean duration of 4.14 months and 14% presenting within the first month. Prolonged duration is often linked to incomplete treatment, persistent environmental factors, or the immune status of host.

In this study, 23.9% of tinea corporis patients had comorbidities such as hypothyroidism, diabetes or other systemic illnesses, while 76.1% had none. Similar trends were reported by only 7% to have systemic illnesses[21], with hypothyroidism being the most common and linked to chronic or recurrent infections. The higher prevalence of co-morbidities in this study may reflect urbanization, sedentary lifestyle, diet, immune status and genetic factors. Hypothyroidism has autoimmune connection with diabetes. Diabetes increases susceptibility by impairing immunity and circulation, while elevated skin glucose and moisture favor fungal growth.

In the present study, the most affected sites in clinically suspected tinea corporis were the waist (71.7%), axilla (54.3%), thigh (47.8%), back (41.3%), leg (39.1%), and chest (39.1%). Most patients (73.9%) had five or more lesions. Annular morphological lesions predominated (78.3%), followed by serpiginous (13.0%) and polycyclic types (8.7%). These findings aligned with studies denoting asymmetrical distribution, multiple lesion coalescence into polycyclic patterns, and trunk predominance[1,20]. Multiple-site involvement is often due to autoinoculation via scratching, contaminated clothing, towels, or bedsheets.

Analysis of this study revealed that dermoscopic patterns in tinea corporis showed associations with lesion number, morphology, and co-morbidities. Background color changes, superficial scaling, and vascular alterations were observed in all cases, while micropustules appeared in 43.5% and vellus hair changes in 67.3%. Diffuse erythema and superficial scales, including “annular arrangement with inward free margin” were common irrespective of the number and morphologies of lesions, with scales along skin creases significantly associated with lesion number ($p = 0.006$). Vascular features such as red/brown dots and micropustules were variably distributed without statistical significance. These findings align with previous studies[11,16] supporting the diagnostic value of dermoscopy in tinea corporis.

In this study, the pattern of superficial scales revealed a predominant “annular arrangement with inward free margin” within the lesions in 84.8% of cases, especially in patients under 30 years and more frequently in females (92.0% vs. 76.2%). It showed no significance with disease duration. Other frequent features included peripheral moth-eaten scales (52.2%), scales along skin creases (41.3%), and perifollicular scales (30.4%). In contrast to the above-mentioned findings in the present study, similar dermoscopic patterns have been observed peripheral collarette and perifollicular scales, and others noted Biett’s collarette-like and moth-eaten peripheral scales [16,22]. Studies showed white, outward-peeling peripheral scales[17]. These consistent findings underscore dermoscopy’s diagnostic value in dermatophytosis. A notable point of divergence from other studies is the observation of superficial scales pattern as an “annular arrangement with an inward free margin” within clinical lesions—a pattern not found in other studies to date. These findings suggest that geographical variations of the organism, hot and humid climate, variations in immune status, and differences in skin type and pigmentation acted as factors contributing to this disagreement with previous studies.

In the present study, "diffuse erythema" was the most common dermoscopic background feature, seen in 57.9% of patients under 20 years and 72.7% of those aged 21–30 years, with similar prevalence across sexes. This feature appeared more commonly in patients with disease duration ≥3 months (72.2%). Diffuse erythema was also noted in 63.6% of patients with comorbidities and 60.0% of those without. Diffuse brown pigmentation was more frequent in those with comorbidities (36.4% vs. 11.4%), whereas "focal erythema" appeared exclusively in patients without comorbidities (28.6%), a statistically significant difference (p = 0.038). Diffuse erythema was present across all morphological types—ranging from 50.0% in serpiginous to 75.0% in polycyclic lesions—reinforcing its diagnostic significance. In contrast to the above highlighted findings, comparable findings were present in 37.82% of cases and diffuse erythema in nearly all cases (98%)[22,23]. Background color denoted as a clue to lesion chronicity, with reddish tones in acute lesions and greyish hues in chronic ones[8]. These results indicate that background erythema remains a consistent and reliable dermoscopic marker across age groups and variations in clinical course of tinea corporis.

In this study, dermoscopic features of tinea corporis showed no significant differences by age, sex, residence, or occupation, though some patterns varied. Translucent hair (47.6%) and brown dots, globules (57.1%) were more common in males, while red dots, globules predominated in females (68.0%). Patterns evolved with disease duration: red dots and globules were frequent in <3 months (67.9%), whereas translucent hairs were more common in ≥3 months' duration (55.6%, p = 0.017). Vascular changes appeared across all age groups, and morse code hair was mainly seen under 20 years (36.8%). These findings align with previous studies11, who noted follicular involvement in tinea incognito, and who described micropustules and translucent hairs as follicular invasion markers[8].

Diffuse erythema was the most frequent dermoscopic feature across all lesion sites (56.3–72.2%), followed by peripheral moth-eaten and perifollicular scales. Vascular changes and vellus hair abnormalities were also noted with minor site variation. These findings, consistent with studies that highlighted dermoscopy's value in assessing lesion morphology, the need to integrate clinical, dermoscopic, and microbiological data for accurate diagnosis in skin of color[24].

These novel findings emphasized the reliability of dermoscopy and contributed to bridge the research gap with previous studies, which constituted a notable strength of this study.

Conclusion

Dermoscopy demonstrated characteristic patterns in tinea corporis, with annular arrangement with an inward free margin showing the most consistent diagnostic performance across lesion sites. Red and brown dots or globules and translucent hairs also demonstrated potential diagnostic relevance. These findings support dermoscopy as a useful, noninvasive adjunct for the recognition and assessment of tinea corporis.

Strength, novelty and limitations

This study provides early evidence from Bangladesh on dermoscopic patterns in mycologically confirmed tinea corporis, including a potentially novel dermoscopic marker consistently observed across different lesion characteristics. Standardized dermoscopy, digital image documentation, predefined criteria, and consecutive recruitment strengthened the study design. However, the small sample size, single-center setting, and cross-sectional design may limit generalizability. Larger multicenter studies with appropriate controls are needed to validate these findings.

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