

A Comprehensive Retrospective Study in Patients with Guttate Psoriasis

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Abstract: Streptococcal infection is frequently the cause of guttate psoriasis, an acute inflammatory skin condition marked by the abrupt emergence of numerous tiny, drop-like erythematous scaly papules. The goal of the current study was to assess the main contributing variables, clinical characteristics, and treatment regimens of guttate psoriasis patients. This observational research comprised 131 patients in total. A recent streptococcal upper respiratory tract infection is frequently the cause of guttate psoriasis, an acute inflammatory subtype of psoriasis characterized by the abrupt appearance of numerous small, drop-like erythematous scaly papules. The goal of the current descriptive observational case study was to determine the main causes of guttate psoriasis, with a focus on streptococcal infection, and to assess the clinical characteristics, treatment patterns, and demographics of patients with the condition. In all, 131 individuals with guttate psoriasis were included in the study. The results revealed that the largest percentage of patients (51.1%) were under 20 years old, and that females (55.7%) were slightly more affected than males (44.3%). In 67.9% of patients, streptococcal infection was found to be the primary cause, followed by social behaviours (13.0%), psychological stress (9.2%), and genetic variables (3.1%).

Keywords: Guttate psoriasis, Streptococcal infection, Causative factors

1. Introduction

Guttate psoriasis is an acute, immune-mediated inflammatory skin disorder that typically affects children, adolescents, and young adults and is often triggered by Group A β -haemolytic streptococcal infection. In this observational study, 131 patients were evaluated, with 58 males (44.3%) and 73 females (55.7%). The largest age group was 11–20 years (32.9%), followed by social habits, psychological stress, and genetic factors. Early detection of triggers, prompt treatment, patient education, and appropriate dermatological management are crucial for preventing recurrence and improving quality of life.

often caused by a Group A β -haemolytic streptococcal throat infection and affects children, teenagers, and young adults. Genetic susceptibility, psychological stress, alcoholism, smoking, skin injuries, drugs, and environmental variables are other contributing factors. This study evaluated the risk factors and demographics of guttate psoriasis in 131 individuals at a tertiary care facility. The majority of patients (55.7%) were female and between the ages of 11 and 20. The most commonly found risk factor was streptococcal infection, underscoring the significance of prompt diagnosis, suitable treatment, and preventive measures.

3. Review of Literature

3.1 Özlem Karabudak Abuaf Bilal Dogan et al. reported the chronic inflammatory skin disease that is impacted by both environmental triggers and genetic vulnerability, according to the author et al. Infections, especially *Streptococcus pyogenes*, and some drugs are important environmental factors that can cause or exacerbate the illness. A recent streptococcal throat infection is closely linked to guttate psoriasis, an acute clinical variation that primarily affects children and young people. The precise pathogenic process is still unknown, despite the documented link between guttate psoriasis and streptococcal infection. According to available data, an aberrant immune response involving pro-inflammatory cytokines and activated T cells may play a role in the onset of illness. Additionally, the authors pointed out that there are no well recognized treatment protocols for acute guttate psoriasis.

3.2 Dhanya E. Thomas et al. described a 66-year-old woman who had Group A streptococcal pharyngitis and developed an unusual instance of guttate psoriasis. This example shows that guttate psoriasis can develop in older persons following a recent upper respiratory tract infection, even though it is usually seen in children and young adults. The authors stressed that although the precise pathogenic pathways are still unknown, doctors should take guttate psoriasis into account in patients of any age who present with distinctive skin lesions following streptococcal infections. By showcasing an unusual appearance of guttate psoriasis in an



These results highlight the fact that guttate psoriasis is closely linked to antecedent streptococcal infection and primarily affects younger people. Reducing illness recurrence and improving quality of life requires early diagnosis, timely treatment of streptococcal infections, identification of triggering events, and patient education.

2. Background of the Study

A chronic inflammatory skin condition, psoriasis affects two to three percent of people worldwide. The second most prevalent clinical subtype of psoriasis, after plaque psoriasis, is guttate psoriasis, which is typified by the abrupt emergence of several tiny, scaly, erythematous, drop-shaped lesions. It is

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older patient with numerous comorbidities, this case adds to the body of material already in existence and emphasizes the significance of early detection and effective clinical care.

3.3 Kirstin Altman et al. stated that guttate psoriasis is an acute form of psoriasis that primarily affects the trunk and proximal extremities and is characterized by the abrupt appearance of numerous tiny (1–10 mm), drop-shaped erythematous papules with fine scales. Lesions usually emerge two to three weeks after a Group A β -haemolytic streptococcal upper respiratory tract infection, and the disease primarily affects children, teenagers, and young adults. Lesions continue to grow throughout the first month, stable during the second, and frequently go away by the third, according to the authors' observations. While guttate psoriasis typically resolves on its own, 25–39% of people may develop chronic plaque psoriasis. They also mentioned that there are still few standardized treatment recommendations and that the illness can be brought on by viral infections and some drugs.

3.4 Luigi Barrea et al. stated that the combination of environmental variables and genetic vulnerability causes psoriasis, a chronic inflammatory skin condition mediated by the immune system. Males and females are equally affected by the condition, which often strikes adults in their second to fourth decades of life. About 2–4% of people worldwide suffer from psoriasis, which is linked to a number of systemic comorbidities, including as obesity, metabolic syndrome, and cardiovascular disease. The scientists emphasized that the pathogenic connection between fat and psoriasis may be persistent inflammation. Additionally, they underlined that psoriasis severely lowers patients' quality of life by affecting their social, psychological, and physical health. Additionally, they recommended that in order to ameliorate the severity of the disease and lessen the consequences associated with obesity in psoriasis patients, medical therapy should be combined with nutritional assessment, weight management, and lifestyle changes.

3.5 Stephanie S. Gardner et al. stated that the abrupt emergence of tiny, round or teardrop-shaped erythematous papules with a diameter of roughly 2–10 mm is the hallmark of guttate psoriasis. The lesions are frequently covered in thin scales and appear on the arms, legs, and trunk. One typical symptom that can be extremely uncomfortable is pruritus, or itching. According to the scientists, a guttate psoriasis episode typically lasts two to three weeks, though medical intervention may be necessary to alleviate symptoms, stop secondary infections, and lower the chance of recurrence.

4. Aim and Objectives

Aim

To identify and analyse the major causative factors responsible for the occurrence of guttate psoriasis and to assess their distribution among the study population.

Objectives

- To determine the prevalence of streptococcal infection as the primary causative factor of guttate psoriasis among patients attending a healthcare clinic.

- To determine whether the development of guttate psoriasis is linked to a recent streptococcal upper respiratory tract infection.
- To lower the incidence and recurrence of guttate psoriasis by raising awareness of the need of early detection and timely treatment of streptococcal infections.
- To assess how guttate psoriasis manifests clinically in individuals who have had a recent streptococcal infection.
- To evaluate the connection between guttate psoriasis severity or recurrence and repeated streptococcal infections.
- To emphasize the importance of early detection and appropriate treatment of streptococcal infections in preventing the onset and recurrence of guttate psoriasis.

Plan of Study

Patient demographics, age, gender, medical history, family history, clinical presentation, triggering variables including streptococcal infection, stress, smoking, alcohol use, skin injuries, and other related risk factors were all documented using a systematic data collection form. When available, information about the course of treatment and pertinent laboratory tests was also recorded.

Descriptive statistical techniques were used to assess the gathered data once it was imported into Microsoft Excel. The results were summarized using tables, pie charts, bar graphs, frequencies, and percentages. The study's main objectives were to ascertain the distribution of guttate psoriasis by age and gender, identify common risk factors, and assess the correlation between these factors and the prevalence of the illness. In order to derive significant conclusions and offer suggestions for enhancing the clinical management of patients with guttate psoriasis, the results were analysed and contrasted with findings from earlier research.

Preliminary literature search

Review of Literature

- Designing of study protocol
- Designing of data collection form
- Institutional ethical committee approval process
- Selection of study subjects based on inclusion and Exclusion criteria
- Obtain informed consent
- Perform data collection

Data analysis

- Statistics
- Result and discussion

5. Conclusion

Methodology

Study Design: In order to assess the clinical presentation, etiological factors, diagnostic tests, treatment, and outcome of a patient with guttate psoriasis, this study was carried out as a descriptive observational case study, with a focus on streptococcal infection as the main triggering factor.

Study Setting: The case study was conducted in the **Department of Dermatology** at Usha clinic (Dr. Dinesh Kumar) Uthangarai, Sri kani clinic (Dr. Raja) Alangayam.

Study Duration: The study was carried out over a period of 6–8 months, including patient assessment, treatment, and documentation.

Study Subject: Patient with a confirmed diagnosis of guttate psoriasis was selected for the study based on the inclusion criteria.

Study Population: A total of 131 patients diagnosed with guttate psoriasis were included in the study.

Sample Size: The study included 131 confirmed cases of guttate psoriasis collected from Clinical medical records.

Inclusion Criteria:

- Patients of any age and either sex diagnosed with guttate psoriasis by a dermatologist. Patients with a recent history of streptococcal pharyngitis, tonsillitis, or upper respiratory tract infection (within the previous 2–6 weeks).
- Patients with complete medical records, including clinical history, examination findings, laboratory investigations, and treatment details.
- Patients who provided written informed consent to participate in the study.
- Patients with clinical or laboratory evidence of streptococcal infection, such as:
 - Elevated Ant streptolysin-O (ASO) titre,
 - Positive throat swab culture, or
 - Clinical diagnosis of streptococcal pharyngitis.

Exclusion Criteria:

- Individuals with erythrodermic, inverse, pustular, or plaque psoriasis diagnoses.
- Patients who have not had a recent streptococcal infection.
- Patients whose test or clinical records are lacking.
- Guttate psoriasis may be difficult to diagnose in patients with concomitant dermatological conditions.
- Individuals who declined to give informed consent.

Data Collection:

- Demographic details (age, sex, occupation)
- Chief complaints
- History of present illness
- Past medical history
- Family history
- Drug history
- Social habit
- Laboratory reports
- Final diagnosis
- Causative factor
- Treatment
- Managements

6. Results

In all, 131 patients with guttate psoriasis linked to streptococcal infection were included in the case study.

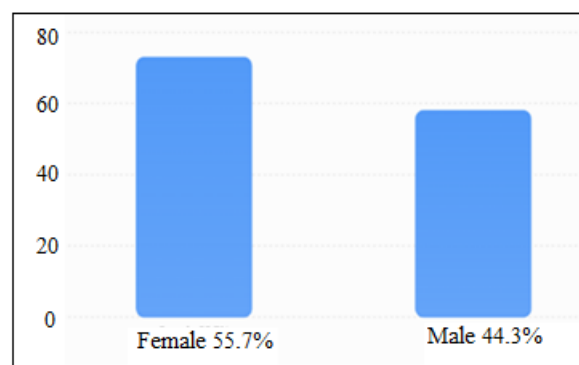
Children and young people were primarily impacted by the condition, as evidenced by the fact that 51.1% of patients were under 20 years old. Compared to male patients (44.3%), female patients (55.7%) were marginally more affected. The fact that every patient had a recent history of streptococcal infection confirmed that this was the main cause.

Based on Gender

Gender distribution of the total study population, 73 patients (55.7%) were females and 58 patients (44.3%) were males.

Graph showing the gender distribution of patients with guttate psoriasis (n = 131). Females constituted 73 patients (55.7%), while males constituted 58 patients (44.3%). The male-to-female ratio was 58:73 (1:1.26), indicating a slightly higher prevalence among females.

Gender	Number	Percentage (%)
Female	73	55.7
Male	58	44.3
Total	131	100

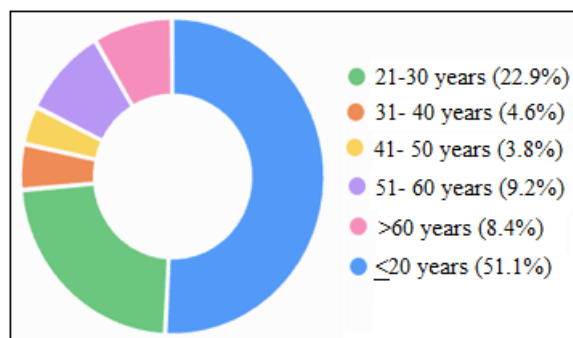


Graph showing the gender distribution of patients with guttate psoriasis (n = 131). Females constituted 73 patients (55.7%), while males constituted 58 patients (44.3%). The male-to-female ratio was 58:73 (1:1.26), indicating a slightly higher prevalence among females.

Based on Age

The process of classifying and presenting research participants into various age groups in order to ascertain the frequency and percentage of patients in each category is known as age-wise distribution. It makes it easier to compare the incidence of the disease across various age ranges and aids in determining the age group most frequently impacted by the illness.

Age Group (Years)	Number of Patients	Percentage (%)
≤20	67	51.1
21–30	30	22.9
31–40	06	4.6
41–50	05	3.8
51–60	12	9.2
>60	11	8.4
Total	131	100

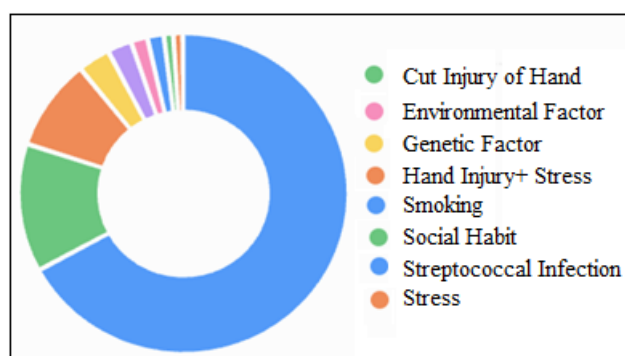


Pie chart displaying the distribution of patients with guttate psoriasis by age (n = 131). The age group of ≤20 years old comprised the biggest percentage of patients (67 patients; 51.1%), followed by the age group of 21–30 years old (30 patients; 22.9%). The remaining patients fell into four age groups: 31–40 years (6; 4.6%), 41–50 years (5; 3.8%), 51–60 years (12; 9.2%), and >60 years (11; 8.4%).

Based on Causative Factor

To determine the primary variables causing guttate psoriasis in the study subjects, the causative factor-wise distribution was examined. Numerous etiological factors were assessed, such as skin injuries, stress, social habits, genetics, environmental factors, and streptococcal infection. This study aids in identifying the most frequent cause of the development of the disease. Understanding illness patterns and developing effective preventive and treatment measures depend on identifying these causal variables. The distribution of causal factors was evaluated among 131 participants in the current study.

Causative Factor	Number of Patients (n)	Percentage (%)
Streptococcal infection	89	67.9
Social habit	17	13
Stress	12	9.2
Genetic factor	4	3.1
Stress and social habit	3	2.3
Environmental factor	2	1.5
Social habit(smoking)	2	1.5
Cut injury of hand	1	0.8
Injury of hand and stress	1	0.8
Total	131	100



The distribution of causal factors among 131 guttate psoriasis patients is shown in the pie chart and bar graph. With 89 patients (67.9%), streptococcal infection was the most frequent cause, followed by stress (12 patients; 9.2%) and social behaviours (17 patients; 13.0%). Additional contributing factors included genetic factors (4 patients;

3.1%), stress plus social habits (3 patients; 2.3%), environmental factors (2 patients; 1.5%), smoking (2 patients; 1.5%), hand cut injuries (1 patient; 0.8%), and stress-related hand injuries (1 patient; 0.8%). Overall, the results show that guttate psoriasis was mostly caused by streptococcal infection in the study population, with other causes accounting for a lower percentage of cases.

7. Discussion

A focus on streptococcal infection, the current study assessed the clinical characteristics, treatment patterns, causes, and demographics of individuals with guttate psoriasis. The study comprised 131 patients in total. Males made up 44.3% of the study population, and females made up 55.7%. Guttate psoriasis is more common in younger people because the majority of patients (51.1%) were 20 years of age or younger. Streptococcal infection was the most common trigger among the identified causal causes, accounting for 67.9% of cases. Social behaviours (13.0%), psychological stress (9.2%), genetics (3.1%), environmental factors, skin trauma, and smoking were additional contributing causes. These results suggest a robust correlation between guttate psoriasis and streptococcal infection. Drop-like erythematous scaly papules were the most often seen presentation, accounting for 55.0% of cases, according to the clinical feature analysis. Pruritus (21.4%), sore throat with skin lesions (11.5%), scaling (6.1%), fever with skin lesions (3.8%), and burning feeling (2.3%) came next. (8%). Inclusive, the study shows that the most common cause of guttate psoriasis was streptococcal infection. Recurrence can be decreased and quality of life can be enhanced by early detection and proper treatment of streptococcal infection, prompt treatment of cutaneous symptoms, patient education on avoiding triggers, and routine follow-up. The results highlight the significance of guttate psoriasis early detection and all-encompassing treatment. Emollients and topical corticosteroids were the most commonly given drugs for treatment, followed by vitamin D analogs, emollients, antibiotics, and antihistamines. The necessity of treating underlying streptococcal infection is further supported by the widespread usage of antibiotics.

8. Conclusion

With a focus on the role of streptococcal infection, the current study was carried out to assess the clinical features, treatment patterns, demographics, and causative factors of patients with guttate psoriasis. The results showed that guttate psoriasis primarily affected children and young adults, with the age group of ≤20 years old accounting for the largest number of patients. The study population also showed a slight female predominance. These results suggest that age and recent infection are significant factors in the disease's incidence. Through a streptococcal infection accounting for 67.9% of all cases, the study clearly identified streptococcal infection as the primary causative factor. Smoking, skin trauma, social habits, genetic predisposition, psychological stress, and environmental factors all contributed to a smaller percentage of cases.

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