Guttate Psoriasis Outcomes

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PRACTICE **POINTS**

- Following an initial episode of guttate psoriasis, a patient has a 25.3% chance of developing plaque psoriasis (PP).
- A streptococci culture can be prognostic; if the culture is positive, the patient is less likely to develop PP.
- If the patient's rash clears within 1 year, he/she is less likely to develop PP.

Guttate psoriasis (GP) typically occurs following an acute infection such as streptococcal pharyngitis. It is thought to have a better prognosis than chronic plaque psoriasis (PP). This retrospective cohort study of 79 patients with GP aims to assess the likelihood of developing PP after the first episode of GP as well as compare clinical and laboratory data in patients with GP who do and do not develop PP.

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Guttate psoriasis (GP) typically occurs abruptly following an acute infection such as streptococcal pharyngitis. It is thought to have a good prognosis and show rapid resolution; however, there are limited studies addressing long-term outcomes of GP, particularly the probability of developing chronic plaque psoriasis (PP) following a single episode of acute GP.

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Ko et al[1] reported a long-term follow-up study of Korean patients with acute GP. The investigators determined that 19 of 36 participants (38.9%) with acute GP went on to develop chronic PP over a mean follow-up period of 6.3 years. Martin et al[2] reported a smaller follow-up study of 15 patients in England; 5 of 15 patients (33.3%) developed chronic PP within 10 years.

Methods

A retrospective cohort study was performed using data from the Geisinger Medical Center (Danville, Pennsylvania) electronic medical records from January 2000 to September 2012 to identify medical records that showed a specific clinical diagnosis of GP or a diagnosis of either dermatitis or psoriasis with a positive molecular probe for streptococci or antistreptolysin O (ASO) titer. (A molecular probe is used in place of culture for streptococcal pharyngeal specimens at our institution.) A separate search of the Co-Path database for biopsy-proven GP also was performed. Each medical record was reviewed by one of the authors (L.F.P.) to confirm the true diagnosis of GP. Exclusion criteria included a prior diagnosis of PP or a follow-up period of less than 1 year. Based on this chart review, the prevalence of developing chronic PP in patients with GP was determined. The patients were split into 2 cohorts: those who had a single episode of GP with resolution versus those who developed PP. We compared the clinical characteristics to those who developed chronic PP. The clinical characteristics that were recorded included patient age; whether or not the patient developed PP; length of time for clearance of

GP; molecular probe or ASO results; family history; GP treatment used; smoking status; and comorbid conditions such as hyperlipidemia, hypertension, diabete mellitus, and obesity, which were lumped under the category of metabolic syndrome due to their low prevalence individually.

The study group data set contained 79 patients with GP who had a history of at least 1 year of follow-up. Descriptive statistics of the patients were provided for continuous and categorical variables in the study. Continuous variables were described using the mean and SD or, for skewed distributions, the median and interquartile range (25th-75th percentiles), while categorical variables were presented using frequency counts and percentages. Comparisons between groups were tested using 2-sample *t* tests or Wilcoxon rank sum tests, or Pearson χ^2 or Fisher exact tests, as appropriate.

Results

A total of 79 patients were included in the study. Descriptive statistics for the total patient population as well as those who did and did not develop PP are shown in Table 1. The median age of patients was 37 years. The median follow-up time was 5 years. The majority of patients were female (68.4%). There were 20 patients (25.3%) who developed PP and 59 (74.7%) who did not (95% CI, 0.1-0.36).

Molecular probes for streptoccoci were obtained from 31 patients (39.2%) during the workup for GP. Patients who had a molecular probe and developed PP were less likely to have had a molecular probe that was positive for streptococci versus patients who did not develop PP (0% vs 61.5%; *P*=.0177) (Table 2). Patients who developed PP were more likely to have persistent GP at 12 months than patients who did not develop PP (26.3% vs 6.8%, respectively; *P*=.0414). At the end of the observation period, 4 patients (5.1%) did not yet show GP clearance. The patients who developed PP were more likely to have had a case of GP that never cleared than patients who did not develop PP (15.8% vs 1.7%; *P*=.0505)(Table 3).

No significant differences were detected among those who developed PP compared to those who did not with respect to any degree of family history of psoriasis (22.2% vs 26.4%; *P*=1.0000)(Table 4). There were no significant differences in the value of a positive ASO titer between groups (Table 2), but it should be noted that the small number of patients with positive values in each group impacts a test's power to detect statistically significant differences. There were no significant differences in the likelihood of developing PP if a patient was treated with systemic steroids or antibiotics (data not shown). Additionally, smoking status, hyperlipidemia, hypertension, diabetes mellitus, and obesity were not predictive of evolution of GP into PP (data not shown).

Comment

Ryan et al[3] noted in a report on research gaps in psoriasis that studies are needed to validate frequency and characteristic factors associated with spontaneous remission for different phenotypes of psoriasis, including disease severity, patient age, morphologic attributes

Table 1.

Descriptive Statistics for Patients With Guttate Psoriasis

Characteristic	Patients With PP (n=20)	Patients With No PP (n=59)	Total (N=79)	*P* Value
Median age, y	42	37	37	.6397
Median follow-up period, y	6	4	5	
Gender, n (%)				.7090
Female	13 (65.0)	41 (69.5)	54 (68.4)	
Male	7 (35.0)	18 (30.5)	25 (31.6)	

Abbreviation: PP, plaque psoriasis.

Table 2.

Results of Molecular Probes for Streptococci or ASO

Laboratory Results	Patients With PP, n (%)	Patients With No PP, n (%)	Total, n (%)	*P* Value
ASO titer[a]				1.0000
Positive	5 (71.4)	7 (77.8)	12 (75.0)	
Negative	2 (28.6)	2 (22.2)	4 (25.0)	
Streptococci molecular probe[a]				.0177
Positive	0 (0)	16 (61.5)	16 (51.6)	
Negative	5 (100)	10 (38.5)	15 (48.4)	

Abbreviations: ASO, antistreptolysin O tite; PP, plaque psoriasis.
[a]Those with results only.

Table 3.

Length of Time for Clearance of Guttate Psoriasis

Disease Clearance	Patients With PP, n (%) (n=19)[a]	Patients With No PP, n (%) (n=59)	Total, n (%) (N=78)[a]	*P* Value
Status at 3 mo				.4056
Cleared	5 (26.3)	23 (39.0)	28 (35.9)	
Improving	4 (21.1)	15 (25.4)	19 (24.4)	
Persisting	10 (52.6)	21 (35.6)	31 (39.7)	
Status at 6 mo				.1799
Cleared	6 (31.6)	31 (52.5)	37 (47.4)	
Improving	6 (31.6)	17 (28.8)	23 (29.5)	
Persisting	7 (36.8)	11 (18.6)	18 (23.1)	
Status at 12 mo				.0414
Cleared	7 (36.8)	36 (61.0)	43 (55.1)	
Improving	7 (36.8)	19 (32.2)	26 (33.3)	
Persisting	5 (26.3)	4 (6.8)	9 (11.5)	
Status after 12 mo				.0505
Cleared	9 (47.4)	39 (66.1)	48 (61.5)	
Improving	7 (36.8)	19 (32.2)	26 (33.3)	
Persisting	3 (15.8)	1 (1.7)	4 (5.1)	

Abbreviation: PP, plaque psoriasis.
[a]One patient missing from follow-up data.

Table 4.

Family History of Guttate Psoriasis[a]

Family History	Patients With PP, n (%) (n=20)	Patients With No PP, n (%) (n=59)	Total, n (%) (N=79)	*P* Value
Presence of a family history (any degree)				1.0000
Yes (any degree)	4 (22.2)	14 (26.4)	18 (25.4)	
No	14 (77.8)	39 (73.6)	53 (74.6)	
Presence of a family history (first degree)				1.0000
First-degree relative	2 (11.8)	7 (13.7)	9 (13.2)	
Not first-degree relative	15 (88.2)	44 (86.3)	59 (86.8)	

Abbreviation: PP, plaque psoriasis.
[a]For patients who answered these questions.

of plaques, and comorbidities. Our analysis attempts to bridge this gap in reference to type, specifically GP, and factors associated with development of chronic PP.

Our study showed that 20 of 79 patients (25.3%) with GP went on to develop chronic PP. The incidence is slightly lower than in prior smaller studies from Korea and England, which reported incidence rates of 38.9% and 33.3%, respectively.[1,2] Although Ko et al[1] noted that a younger age of onset was more frequently found in the cohort with complete remission of GP, this finding was not observed in our study. Although only a minority of patients underwent a molecular probe for streptococci, of those who were tested and had positive results, they were significantly less likely to develop chronic PP (P=.0177). This finding supports the classic teaching that GP originates after an episode of a streptococcal infection. Of those who developed PP, only one-fourth had been tested for streptococci via molecular probe and all were negative. Interestingly, there was no difference noted in those that had ASO titers drawn (P=1.0000). Although the data were too low to achieve statistical significance, this finding contrasts with Ko et al[1] who reported that a high ASO titer correlated with a good prognosis (ie, GP did not evolve into PP). There was no difference in the likelihood of developing PP seen in patients that were treated with antibiotics (P=.1651), suggesting that obtaining a molecular probe that is positive for streptococci may be predictive of prognosis (ie, resolution) and thus is a reasonable diagnostic test to obtain. We do recognize that nonpharyngeal sources for streptococci may occur (ie, perianal), but these data were not captured in our patient population.

In our study, patients were more likely to develop chronic PP if they had a GP history that was longer than 12 months. Ko et al[1] also showed that GP patients who did not develop PP were typically cleared after 8 months. There were no statistical differences noted when comparing the different treatments used to treat GP. It appears that the rapidity with which the episode clears is more predictive than the method used to clear it.

There were several limitations to this study including the small number of patients, the median 5-year follow-up time, and the retrospective design.

Conclusion

Based on our cohort study, we have concluded that GP evolves into chronic PP in approximately 25% of cases. Obtaining a group A streptococcal molecular probe or culture may serve as a prognostic tool, as physicians should recognize that GP flares associated with a positive result indicate a favorable prognosis. Additionally, GP flares that resolve within the first year of an outbreak, regardless of treatment choice, are less likely to be followed by chronic PP.

REFERENCES

1. Ko HC, Jwa SW, Song M, et al. Clinical course of guttate psoriasis: long-term follow up study. *J Dermatol*. 2010;37:894-899.

2. Martin BA, Chalmers RJ, Telfer NR. How great is the risk of further psoriasis following a single episode of acute guttate psoriasis? *Arch Dermatol*. 1996;132:717-718.
3. Ryan C, Korman NJ, Gelfand JM, et al. Research gaps in psoriasis: opportunities for future studies. *J Am Acad Dermatol*. 2014;70:146-167.