



A STUDY ABOUT COMPARISON OF PSORIASIS AREA SEVERITY INDEX, SIMPLIFIED PASI AND PHYSICIAN GLOBAL ASSESSMENT x BODY SURFACE AREA IN PATIENTS WITH PSORIASIS

Dermatology

Soorya Baskaran	Resident, Department of Skin and STD, Sree Balaji Medical College and Hospital, Chennai, India
Jayakar Thomas	Professor and Head, Department of Skin and STD, Sree Balaji Medical College and Hospital, Chennai, India
Sruthy SR	Resident, Department of Skin and STD, Sree Balaji Medical College and Hospital, Chennai, India
Paavai Senthil	Resident, Department of Skin and STD, Sree Balaji Medical College and Hospital, Chennai, India

ABSTRACT

BACKGROUND: Tools to measure and to monitor the severity of psoriasis over time are needed for research and for patient care. Hence reliability is essential to document the response to the treatment. This study is done to compare the reliability of PASI, PGA x BSA and SPASI in 100 psoriasis patients.

OBJECTIVE: We sought to evaluate the effectiveness of PASI (Psoriasis Area and Severity Index), SPASI (simplified PASI) and PGA x BSA (Physician Global Assessment and Body Surface Area) in grading the severity of psoriasis.

METHODS: A cross sectional study was done with 100 patients diagnosed with psoriasis (all types). All the patients were subjected to complete history, complete physical and dermatological examination and scoring using PASI, SPASI and PGA x BSA.

RESULTS: In our study on comparing PASI, PGA x BSA and SPASI, the coefficient of variation was low in SPASI (80.27), followed by PGA x BSA (93.73) and PASI (122.30). Thus SPASI can be a simplified scoring for measuring psoriasis in the day to day practice.

CONCLUSION: Several scoring systems are available to evaluate the severity of psoriasis. Because PASI is better studied and elaborated, it remains the score of choice for clinical trials, but the simpler SPASI and PGA may be used in day to day practice.

KEYWORDS

PASI, SPASI, PGA, BSA, psoriasis

INTRODUCTION:

Psoriasis is an immune mediated inflammatory disorder. It commonly affects the skin, nails, and joint. Psoriasis has a great impact on patient's quality of life. Scoring of psoriasis can help in the grading the severity, choosing the treatment and for research. Several scoring systems have been introduced but all of them had certain limitations.

AIM:

To evaluate the effectiveness of PASI (Psoriasis Area and Severity Index), SPASI (simplified PASI) and PGA x BSA (Physician Global Assessment and Body Surface Area) to grade the severity of psoriasis

MATERIALS & METHODS:

A cross sectional study was done with 100 patients diagnosed with psoriasis (all types). All the patients were subjected to complete history, complete physical and dermatological examination, scoring using PASI, SPASI and PGA x BSA.

RESULTS:

Data of the participants were analyzed. In our study the commonest age group affected was between 21 – 40 years of age (43%), followed by 28% in the age group of 41-60 years, 25% in the age group of 61-80 years and 4% below 20 years [TABLE 1]. This study shows more or less equal gender predilection [TABLE 2]. The commonest type of psoriasis is psoriasis vulgaris (71%), followed by palmoplantar psoriasis (10%), plantar psoriasis (8%), scalp psoriasis (7%) and palmar psoriasis (4%) [TABLE 3].

In our study on comparing PASI, PGA x BSA and SPASI, the coefficient of variation was low in SPASI (80.27), followed by PGA x BSA (93.73) and PASI (122.30) [TABLE 4]. Thus SPASI can be a simplified scoring for measuring psoriasis in the day to day practice.

DISCUSSION:

Multiple scoring systems are available for psoriasis like PASI, PGA, BSA, The National Psoriasis Foundation- Psoriasis Score (NPF-PS)^[1], The Salford Psoriasis Index, The Lattice system physician's global assessment and dermatological life quality index.

PASI (Psoriasis Area and Severity Index) is the most common scoring

for the severity of psoriasis. PASI was first introduced in 1978 in an etretinate trial by Fredriksson and Pettersson^[2]. PASI is measured in four sites of affection, the head (h), upper limb (u), trunk (t) and lower limbs (l), are scored by using three parameters - erythema, induration, and desquamation, each of which is graded on a severity scale of 0 to 4, where 0 = nil, 1 = mild, 2 = moderate, 3 = severe and 4 = very severe. The area-wise percentage involvement of the involved sites is calculated as: 1 = less than 10% area; 2 = 10-29%; 3 = 30-49%; 4 = 50-69%; 5 = 70-89%; and 6 = more than 90%.

$$PASI = 0.1 (Eh + Ih + Dh) Ah + 0.2 (Eu + Iu + Du) Au + 0.3 (Et + It + Dt) At + 0.4 (El + Il + Dl) Al$$

The maximum score of PASI is 72. It is commonly considered as a denominator for satisfactory results of any treatment modality for psoriasis^[3].

It is considered as the gold standard score for the assessment of extensive psoriasis, but it has several limitations like inconvenient to use, different types of psoriasis can yield a similar score, difficult to interpret and inter-observer variation and difficulty to practice in daily life^[4].

Physician global assessment is a measurement of erythema, desquamation and induration averaged over entire body at a given point of time^[5]. It is a 7- Point scale ranging from no lesion to severe lesions

Clear type - No lesions are seen but post inflammatory hyperpigmentation can be seen

Almost clear type - Intermediate between mild and clear

Mild type- plaque with slight elevation, scaling, and erythema

Mild to moderate type - Intermediate between moderate and mild

Moderate type- plaque with moderate elevation, scaling, and erythema

Moderate to Severe type – plaque with marked elevation, scaling, and

erythema

Severe type - Very marked plaque elevation, scaling, and erythema
 PGA = (E + I + D) / 3

Since PGA does not measure the overall severity they are used along with body surface area

$$PGA \times BSA = BSA \times (E + I + D) / 3$$

The limitations for PGA are: It is employed with different descriptions and scores making it tough to interpret, does not discriminate small changes and range not properly defined^[6].

Simplified PASI is done to improve the limitations of PASI score^[7]. SPASI multiplies the sum of overall erythema, desquamation and induration and surface area involved.

$$SPASI = A \times (E + I + D)$$

But it is insensitive in patients with mild to moderate psoriasis.

There is no best score for psoriasis. Ideal scoring has to be valid, reliable and appropriate. Multiple studies are done to identify the best scoring system for psoriasis. Larger studies are needed to evaluate the best score for all grades of psoriasis.

CONCLUSION:

Several scoring systems are available to evaluate the severity of psoriasis. Because PASI is better studied and elaborated, it remains the score of choice for clinical trials, but the simpler SPASI and PGA may be used in day to day practice.

LEGENDS TO FIGURES & TABLES:

TABLE 1: AGE DISTRIBUTION

AGE DISTRIBUTION	NUMBER	PERCENTAGE
< 20 YEARS	4	4 %
21 – 40 YEARS	41	41 %
41 – 60 YEARS	30	30%
61 80 YEARS	25	25%
TOTAL	100	100 %

TABLE 2: GENDER DISTRIBUTION

GENDER DISTRIBUTION	NUMBER	PERCENTAGE
MALE	51	51 %
FEMALE	49	49%
TOTAL	100	100%

TABLE 3: TYPE OF PSORIASIS

TYPE OF PSORIASIS	NUMBER	PERCENTAGE
PSORIASIS VULGARIS	72	72 %
PALMOPLANTAR PSORIASIS	9	9 %
PALMAR PSORIASIS	4	4 %
PLANTAR PSORIASIS	8	8%
SCALP PSORIASIS	7	7%
TOTAL	100	100%

TABLE 4: COEFFICIENT OF VARIATION BETWEEN PASI, SPASI and PGA x BSA

SCORE	NUMBER	MINIMUM	MAXIMUM	MEAN	SD	CV
PASI	100	0.12	42.30	6.3327	7.74515	122.30
S PASI	100	2	58	14.5890	11.71083	80.27
PGA X BSA	100	1.30	50.10	9.1843	8.60803	93.73

REFERENCES:

1. Feldman SR, Krueger GG. Psoriasis assessment tools in clinical trials. *Annals of the rheumatic diseases*. 2005 Mar 1;64(suppl 2):ii65-8.
2. Fredriksson T, Pettersson U. Severe psoriasis: oral therapy with a new retinoid. *Dermatologica* 1978;157:238-44.
3. Bhor U, Pande S. Scoring systems in dermatology. *Indian J Dermatol Venereol Leprol* 2006;72:315-21.
4. Shankar V, Ghosh S, Ghosh K, Chaudhuri U. PASI and PQOL-12 score in psoriasis: Is there any correlation?. *Indian journal of dermatology*. 2011 May;56(3):287.
5. Bonifati C, Berardesca E. Clinical outcome measures of psoriasis. *Reumatismo*. 2007;59(1s):64-7.
6. Robinson A, Kardos M, Kimball AB. Physician Global Assessment (PGA) and Psoriasis Area and Severity Index (PASI): why do both? A systematic analysis of randomized

controlled trials of biologic agents for moderate to severe plaque psoriasis. *Journal of the American Academy of Dermatology*. 2012 Mar 31;66(3):369-75.

7. Walsh JA, McFadden M, Woodcock J, Clegg DO, Helliwell P, Dommasch E, Gelfand JM, Krueger GG, Duffin KC. Product of the Physician Global Assessment and body surface area: a simple static measure of psoriasis severity in a longitudinal cohort. *Journal of the American Academy of Dermatology*. 2013 Dec 31;69(6):931-7.