Clinical evaluation of the Self-Administered Psoriasis Area and Severity Index (SAPASI)

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ABSTRACT

Introduction: Psoriasis Area and Severity Index (PASI) is used by dermatologists to assess psoriasis disease intensity. The Self-Administered Psoriasis Area and Severity Index (SAPASI) was developed to allow patients to evaluate the intensity of psoriasis by themselves.

Objectives: This study was undertaken to evaluate the validity and usefulness of the SAPASI scoring method in Polish psoriatic patients.

Material and methods: 51 patients suffering from psoriasis were included into the study. PASI assessment was performed by trained staff and the Extent Score from Salford Psoriasis Index (SPI) was calculated. Moreover, the patients were asked to complete SAPASI evaluation. The studied indexes, as well as their elements (area involvement, severity), were compared using Spearman rank correlation test.

Results. SAPASI significantly correlated with PASI and Extent Score from SPI for the whole group of patients. Both females and males assessed their total skin symptoms (SAPASI) similarly to PASI evaluation, however stronger correlation between SAPASI and PASI was found for female than male patients. There was no significant correlation between severity SAPASI and severity PASI when assessed by male patients. The age of patients did not influence their evaluation of skin lesions. Patients with longer history of psoriasis assessed intensity of the disease more accurately than those with shorter duration of psoriasis.

Conclusion: SAPASI appeared to be a useful instrument in measuring clinical intensity of psoriasis.

KEY WORDS

psoriasis, clinical assessment, SAPASI, PASI

Introduction

The Psoriasis Area and Severity Index (PASI) was originally described as a method for quantifying the intensity of psoriasis, and for evaluating its improvement with treatment (1). This index is based on the quantitative assessment of three typical signs of psoriatic lesions: erythema, infiltration, and desquamation, combined with the skin surface area involvement. Since its development in 1978 (1) this instrument has been used

throughout the world by clinical investigators. Because PASI measures require trained staff, its application to large-scale research on psoriasis is limited. Self-Administered Psoriasis Area and Severity Index (SAPASI) was developed for self-measurement of psoriasis severity for its use in the future large-scale studies (2,3).

The purpose of this study was to evaluate validity and usefulness of SAPASI scoring method in population of Polish psoriatic patients with respect to sex, age and duration of the disease.

Material and methods

The study group consisted of 51 individuals (18 females, 33 males) in the age group from 12 to 78 years, mean 46.6±17.3 years. The shortest period of disease was 2 months and the longest one 48 years, mean 17.8±11.9 years. 40 patients suffered from psoriasis vulgaris, and 11 from arthropathic psoriasis.

Each patient had performed PASI assessment. The PASI values were from 0.6 to 48.8 points, mean 16.1±11.9 points. SAPASI instrument consisted of two parts (2,3). The first was a line-drawing silhouette of the front and back of patient's body and patients were instructed to shade areas affected by psoriasis. A single investigator (MS) assigned a numeric value of 0 to 6 corresponding to 0 to 100% involvement for each of the 4 areas: head, upper extremities, trunk and lower extremities. Both the original PASI score and the SAPASI cover the involvement of these above mentioned areas: as 10%, 20%, 30% and 40% of the total body surface area, 10% (head), 20% (upper extremities), 30% (trunk), 40% (lower extremities) of the total body surface area. The second part of this sheet contained three modified visual analog scales (VAS) enabled patients to describe the color, thickness, and scaling of an "average" psoriatic lesion. The VAS for erythema contains the following word descriptions: no redness, slight pink, pink, red, and dark red. Similarly, the VAS for thickness contained the descriptions: no thickness, feels firm, raised, thick, and very thick; scaling VAS contained: no scale, slight scale, scaly, flaky, very flaky. The SAPASI was calculated from the equation given below:

$$SAPASI=[(0.1xA_H)+(0,2xA_U)+(0,3xA_T)+(0,4xA_L)][0,0333x(VAS_E+VAS_I+VAS_S)]$$

A_H- head area score; A_U- upper extremity area score; A_T- trunk area score; A_L- lower extremity area score; VAS_E- VAS erythema score; VAS_I- VAS induration score; VAS_S- VAS scale score

We calculated and compared the following data: SAPASI, PASI, area SAPASI, area PASI, severity SAPASI (sum of erythema, induration, and scaling for "average" lesion chosen by patient), severity PASI (sum of erythema, induration, and scaling for region chosen by patient, total severity PASI (sum of erythema, induration, and scaling for all parts of the body), and Extent Score from Salford Psoriasis Index (SPI) (Table 1) (4). Statistical analysis was performed using Spearman rank correlation test. *P*-values <0.05 were considered significant.

Table 1. Conversion table PASI to Extent Score from SPI (4)

PASI	Extent Score
0	0
0.1-3	1
3.1-5	2
5.1-8	3
8.1-11	4
11.1-14	5
14.1-18	6
18.1-23	7
23.1-29	8
29.1-36	9
36+	10

Results

Detailed results are given in table 2. Generally, SAPASI scoring method appeared to be a useful index of psoriasis intensity assessment in studied psoriatic patients. A significant correlation was found between SAPASI and PASI for the whole group of patients ($p<0.0001$) (Fig. 1, Table 2). Similarly, in the whole group of patients SAPASI significantly correlated with the Extent Score from SPI ($p<0.00001$). Also elements of SAPASI scores, such as area and severity revealed significant relationships with corresponding elements of PASI ($p<0.000001$ and $p<0.01$, respectively) (Table 2).

Both female and male patients assessed their total skin symptoms (SAPASI) similarly to the evaluation performed by trained staff (PASI), however, there was stronger correlation between SAPASI and PASI, as well as SAPASI and Extend Score from SPI, for female than male patients (Table 2). Assessment of area involvement by both females and males highly significantly correlated with area PASI. However, there was a difference between females and males in the evaluation of the lesion severity. Severity SAPASI assessed by female patients significantly correlated with both severities PASI and total severity PASI ($p<0.01$). Such correlations were not significant for male patients ($p<0.2$ and $p<0.43$, respectively) (Table 2).

The age groups of patients did not differ in the evaluation of total SAPASI and area SAPASI, they showed significant correlation with PASI, Extent Score from SPI and area PASI. (Table 2). The severity SAPASI significantly correlated with severity PASI only in the group of pa-

Table 2. Compared indexes

Compared indexes	Groups	Correlations r	p-value	
SAPASI & PASI	**whole group**	**0.62**	**<0.00001**	
	males	0.45	<0.01	
	females	0.85	<0.00001	
	<30 years old	0.75	<0.01	
	30-55 years old	0.51	<0.01	
	>55 years old	0.82	<0.001	
	<2 years duration of psoriasis	1		NS
	2-10 years duration of psoriasis	0.78	<0.01	
	>10 years duration of psoriasis	0.56	<0.001	
SAPASI & Extent Score from SPI	**whole group**	**0.62**	**<0.00001**	
	males	0.47	<0.01	
	females	0.82	<0.0001	
	<30 years old	0.75	<0.01	
	30-55 years old	0.51	<0.01	
	>55 years old	0.83	<0.001	
	<2 years duration of psoriasis	0.94	<0.06	NS
	2-10 years duration of psoriasis	0.49	<0.1	NS
	>10 years duration of psoriasis	0.39	<0.03	
Area SAPASI & area PASI	**whole group**	**0.82**	**<0.000001**	
	males	0.76	<0.000001	
	females	0.92	<0.000001	
	<30 years old	0.92	<0.0001	
	30-55 years old	0.8	<0.00001	
	>55 years old	0.9	<0.0001	
	<2 years duration of psoriasis	0.94	<0.06	NS
	2-10 years duration of psoriasis	0.83	<0.001	
	>10 years duration of psoriasis	0.77	<0.000001	
Severity SAPASI & severity PASI	**whole group**	**0.35**	**<0.01**	
	males	0.24	<0.2	NS
	females	0.64	<0.01	
	<30 years old	0.06	<0.9	NS
	30-55 years old	0.3	<0.2	NS
	>55 years old	0.78	<0.001	
	<2 years duration of psoriasis	0.94	<0.06	NS
	2-10 years duration of psoriasis	0.49	<0.09	NS
	>10 years duration of psoriasis	0.39	<0.03	
Severity SAPASI & total severity PASI	**whole group**	**0.33**	**<0.02**	
	males	0.14	<0.43	NS
	females	0.77	<0.001	
	<30 years old	0.46	<0.2	NS
	30-55 years old	0.81	<0.000001	
	>55 years old	0.67	<0.01	
	<2 years duration of psoriasis	0.83	<0.16	NS
	2-10 years duration of psoriasis	0.71	<0.01	
	>10 years duration of psoriasis	0.26	<0.2	NS

tients older than 55 years ($p<0.001$) (Table 2).

Analysis of correlations between studied indexes according to the duration of the disease revealed that patients with long-lasting psoriasis assessed their total intensity of psoriasis (SAPASI) and severity of the lesions (severity SAPASI) more accurately than patients with shorter history of the disease (Table 2).

There was no significant difference in the evaluation of skin lesions in the compared indexes between patients suffering from psoriasis vulgaris and arthropathic psoriasis (data not shown).

Discussion

Psoriasis is a common chronic dermatosis. It affects up to 2% of general population (5,6,7). A huge number of clinical investigations of psoriasis are published each year. However, the evaluation of clinical symptoms in psoriasis is still a dilemma. Several clinical scoring methods have been proposed, among them PASI being the most popular one (8-12). Moreover, several substances, such as serum levels of cytokines, adhesion molecules and other agents have been studied as eventual markers of psoriasis intensity (13-16). In 1994 a new scoring method – SAPASI was proposed (2). This method seems to be interesting due to possibility of its use for bigger studies, as the patients could monitor disease intensity by themselves. To the best of our knowledge only two papers evaluating validity and usefulness of SAPASI scoring method have been published in English literature (2,3). Both these studies showed significant correlation between SAPASI and PASI, indicating that SAPASI could be successfully used in psoriatic patients (2,3). Both studies were performed in the States only in one center and the American psoriatic patients were included into them (2,3). As there are several differences in health care system organization and education of psoriatic patients between United States and Poland, the results of the mentioned papers on SAPASI, could not be directly applied in our country. In Poland there are still no organized education groups for psoriatic patients. Moreover, more patients are hospitalized. Therefore, the present study seems to be relevant to confirm validity and usefulness of SAPASI in Polish psoriatic patients.

SAPASI appeared to be a useful scoring method for our patients, as we were able to demonstrate significant correlation between SAPASI and PASI, which is in agreement with previously published data (2,3). Feldman et al. (3) found evaluation of intensity of induration performed by female patients less accurate than done by male patients. However when erythema and scaling were considered, SAPASI performed by females showed stronger correlation with PASI than compared to males (3). Interestingly, our female patients evaluated their skin symptom more accurately than males, especially if severity of all lesions together was assessed. Moreover, patients suffering from psoriasis for longer periods evaluated intensity of psoriasis better than patients did with shorter history of the disease. This is not very surprising, as these patients have more experience with their disease and probably are better dermatologically educated.

Conclusion

The study showed strong relationship between SAPASI and PASI assessments. Based on our detailed analysis it seems that SAPASI – evaluation of psoriatic lesions by patients – could be successfully used worldwide in future clinical studies for all psoriatic patients except those suffering over short periods. For those patients PASI evaluation should be recommended. More objective methods for clinical evaluation of the intensity of psoriasis are still required.

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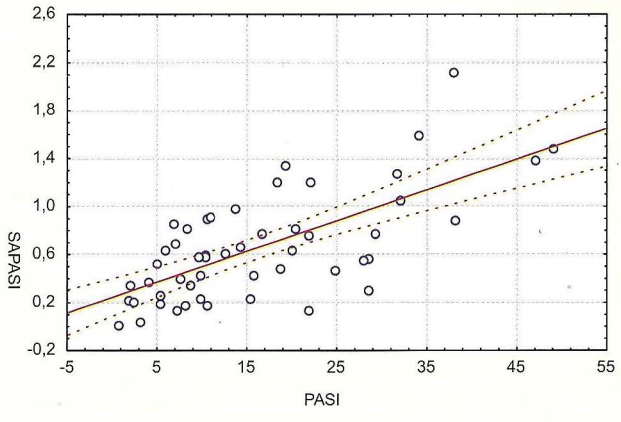
Figure 1. Correlation between SAPASI and PASI in the whole group of studied patients ($n=51$, $r=0.62$, $p<0.00001$)



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