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ORIGINAL PAPER

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Smoking Cigarettes and Consuming Alcohol in Patients with Psoriasis

Eldina Malkic Salihbegovic¹, Nermina Kurtalic², Esed Omerkic¹

¹Health Center Zivinice, Zivinice, Bosnia and Herzegovina

²Cantonal Hospital "Irfan Ljubijankic", Bihac, Bosnia and Herzegovina

Corresponding author:
Assist. Prof. Eldina Malkic Salihbegovic, MD.
Address: Health Center Zivinice, Department of Dermatology. Alije Izetbegovica 17, 75270 Zivinice, Bosnia and Herzegovina. E-mail: elmasa976@yahoo.com. ORCID ID: <http://www.orcid.org/0000-0000-0000-0000>.

ABSTRACT

Introduction: Psoriasis is a chronic disease. Research shows the emergence of harmful habits such as cigarette smoking and alcohol consumption in people with psoriasis. **Aim:** The aim of this study was to determine the frequency of habits, cigarette smoking and alcohol consumption in patients with psoriasis, sexual distribution, and the relationship of habits with the severity of the disease. **Methods:** The prospective study included 129 subjects with psoriasis, of which 67 or 51,94% were women and 62 or 48,06% were men. **Results:** The frequency of cigarette smoking was 41,09%, alcohol consumption 24,80%. The gender distribution of cigarette smoking was: 35,82% of women and 46,77% of men smoked cigarettes. The gender distribution of alcohol consumption is: women 5,97% and men 45,16%. The severity of psoriasis, that is PASI score and cigarette smoking were statistically significantly related ($r=0,63$), and PASI score and alcohol consumption were not statistically significantly related ($r=0,32$). **Conclusion:** Cigarette smoking and alcohol consumption are present in psoriasis sufferers, cigarette smoking is associated with disease severity, and alcohol consumption is not. It takes knowledge of the habits of people with psoriasis and a multidisciplinary approach to get rid of harmful habits.

Keywords: Psoriasis, habits, cigarettes, alcohol, PASI score.

1. BACKGROUND

Psoriasis is a chronic disease that affects about 2-3% of the world's population (1). It affects the lifestyle, diet and habits of patients. Studies have shown that in patients with psoriasis, harmful habits such as smoking and alcohol consumption are present, and this is influenced by the chronicity and incurability of psoriasis (2). Cigarette smoking and alcohol consumption

have been identified as risk factors for the occurrence of psoriasis, but also exacerbation of existing psoriasis (3, 4). Current and former smokers are more likely to have psoriasis than non-smokers (5, 6).

Increased mortality in psoriasis patients due to smoking and alcohol consumption has been found (7). There are various research results on the connection between the severity of psoriasis and cigarette smoking and alcohol consumption. Some studies have shown an association between cigarette smoking and alcohol consumption with the severity of psoriasis (8, 9) but Sobhan et Farshchian (10) did not find a significant association between cigarette smoking and alcohol consumption with disease severity.

2. OBJECTIVE

The aim of this study was to determine the frequency of habits, cigarette smoking and alcohol consumption in patients with psoriasis, sexual distribution, and the relationship with the severity of the disease.

3. METHODS

This is a prospective study, and included 129 subjects with psoriasis over the age of 18, of whom 67 or 51,94% were women and 62 or 48,06% were men. The mean age of the subjects was 48,13 (SD= $\pm 14,45$) years. The prevalence of psoriasis was: psoriasis vulgaris 82,95%, psoriasis guttata 11,63%, psoriasis pustulosa generalista 3,87%, psoriasis pustulosa palmaris et plantaris 1,55%.

Psoriasis patients older than 18 years participated in the research. Excluded from the study are those subjects who, in addition to psoriasis, also suffer from some other skin disease, suffer from psoriasis for less than a year, use systemic therapy for psoriasis, and pregnant women and mothers. All participants in the research were

Grade	0	1	2	3	4	5	6
Erythema (E)							
Infiltration (I)	None	Mild	Medium	Strong	Very Strong	-	-
Desquamation (D)							
Enveloped area of the skin % (A)	0	1-9	10-29	30-49	50-69	70-89	90-100

Table 1. Measurement of PASI

explained the purpose and manner of conducting the research, and written consent was requested to participate in the research. Then a medical history was taken, including data on habits, cigarette smoking and alcohol consumption, a dermatological examination of the skin and visible mucous membranes was performed, and a PASI score was determined. Smoking data included questions: does he smoke cigarettes, how many cigarettes (per day) and for how many years? Data on alcohol consumption included: do they consume alcohol, how many drinks (daily, weekly or monthly) and for how many years? For determining the severity and outspread of psoriasis, Psoriasis Area and Severity Index (PASI) was used. In four regions body-head, torso, upper and lower extremities. In the four regions of the body-head, torso, upper and lower extremities evaluated the characteristics of the disease, severity of erythema, infiltration and desquamation with the score 1-4, and the affected area of skin psoriatic changes with the score 1-6 (Table 1). In assessing the severity of erythema scales may not be removed. Theoretically PASI can range from 0-72 (11).

By this method we calculate:

- * Buttocks as a part of lower extremities, that is, region of the leg (l)

- * Armpits and shoulders as a part of upper extremities, that is, region of the arm (a)

- * The neck is calculated as a part of the head (h)

Torso (t)

For calculating the PASI, the summation of Erythemas, infiltrations and desquamations of single region is multiplied with the numerical value of the region of the body and with the percentage by which the lesions have spread at a single region. Results obtained for each single region are calculated in PASI.

Form for calculating PASI:

$$PASI = 0,1x(Eh+Ih+Dh)xAh+0,3x(Et+It+Dt)xAt+0,2x(Ea+Ia+Da)xAa+0,4x(El+Il+Dl)xAl$$

Legend :

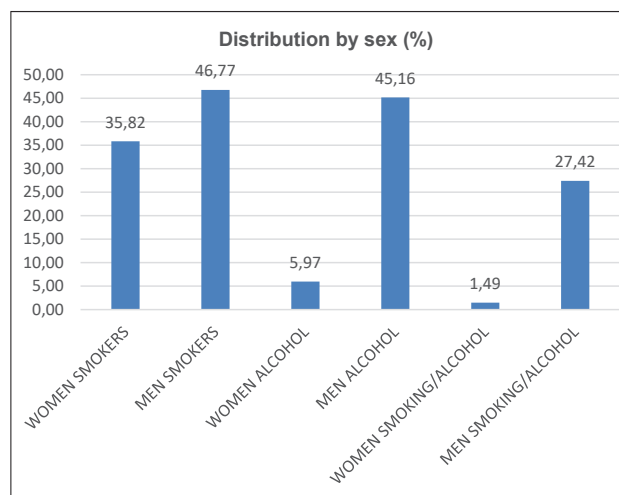
- E- Erythema
- I – Infiltration
- D – Desquamation
- A – Area
- a–arm
- h – head
- t – torso
- l–leg

Statistical analysis

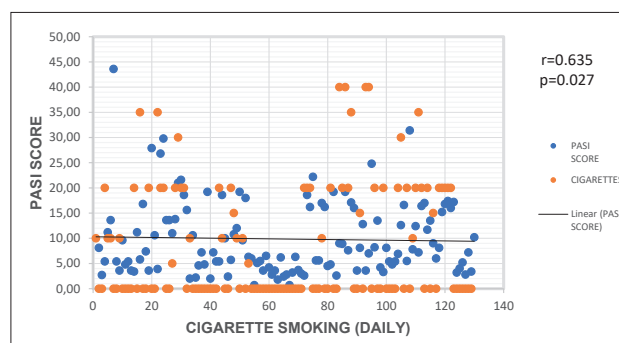
For the purposes of statistical calculation and obtaining results, real data were used, which were processed in Microsoft Excel. Measures of central tendency-mean value and measures of dispersion-standard deviation were used. The correlation between the two variables was made by the Pearson correlation coefficient (since they are linear models). The lowest value of the significance level is $p < 0,05$.

3. RESULTS

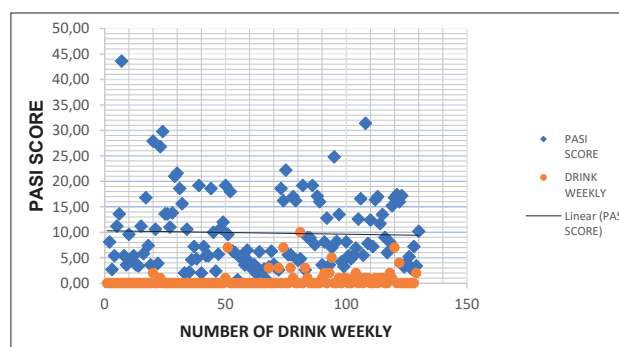
The smoking frequency was 41,09%, and the frequency



Graph 1. Distribution by sex of cigarette smoking, alcohol consumption and both



Graph 2. Correlation between PASI score and cigarette smoking (daily)



Graph 3. Correlation between PASI score and alcohol consumption of alcohol consumption was 24,80%. The average values of PASI score was 9,85 (SD=±7,27). The average duration of smoking was 21,09 (SD=±12,45) years. The average number of cigarettes smoked was 20,28 per day, and ranged from 5 cigarettes to 40 cigarettes per day.

The average length of alcohol consumption was 22,031 (SD=±10,88) years. The average number of alcoholic beverages consumed per week was 2,5 and ranged from one

beverage per month to two beverages per day.

The correlation value, ie the product-moment coefficient of PASI score and cigarette smoking is $r=0,63$, which indicates a medium strong correlation, ie the increase in the value of PASI score and cigarette smoking, were statistically related, in a medium strong correlation.

The correlation value, ie the product-moment coefficient of the PASI score and alcohol consumption was $r=0,32$, which indicates a relatively weak correlation, ie the increase in the value of the PASI score and alcohol consumption were not statistically significantly related.

4. DISCUSSION

A prospective study was conducted to determine the frequency of cigarette smoking and alcohol consumption, sexual distribution, and the association of cigarette smoking and alcohol consumption with the severity of psoriasis. In this study, the smoking frequency was 41,09%. Other studies have also shown an increased incidence of cigarette smoking in psoriasis patients and more frequent cigarette smoking in psoriasis patients than in controls (12-15). This is important because the health status of psoriasis sufferers who smoked was worse than in non-smokers (16), and on the other hand smoking almost doubles the risk of psoriasis (17). The frequency of alcohol consumption was 24,80%. The results of other studies showed that alcohol use was higher in patients with psoriasis than in the control group (18-20). literature, 4 of 5 studies have shown alcohol as a risk factor for psoriasis (21).

The gender distribution of cigarette smoking and alcohol consumption in this study was such that women smoked cigarettes less frequently than men, and in particular consumed less alcohol than men. 35,82% of women smoked cigarettes, 5,97% consumed alcohol, and 46,77% of men smoked cigarettes and 45,16% consumed alcohol. Also, both cigarette smoking and alcohol consumption are significantly less common in women compared to men, 1,49% vs. 27,42%. These findings are consistent with other studies because the prevalence of cigarette smoking and alcohol consumption was higher in men, (22). Another study found that 46,6% of men smoked cigarettes, 39,2% of women, 22,3% of men and 5,5% of women consumed alcohol (9).

In this study, cigarette smoking was statistically significantly associated with psoriasis severity, and alcohol consumption was not statistically significantly associated with psoriasis severity. Other studies have shown different results on the association of psoriasis severity with cigarette smoking and alcohol consumption. Some research has shown that smoking and alcohol consumption are associated with severe forms of psoriasis (13, 23). Also, smoking and alcohol consumption were associated with a PASI score greater than 10 (24). Smoking is associated with an increase in the severity of psoriasis, apropos PASI score (25). And people with psoriasis, with more severe forms of the disease, smoked more compared to milder forms (26). On the other hand, some studies have not found a link between cigarette smoking and alcohol consumption with the severity of psoriasis. Beata et al. (19) found no association between smoking and the severity of psoriasis. Also, smoking was associated with a 70% higher risk of psoriasis,

but was not associated with weight or PASI score (27). And there was no association between the severity of psoriasis and alcohol consumption (28). Geographical, ethnic, social and religious norms, as well as their relationship and impact on cigarette smoking and alcohol consumption, should always be taken into account when assessing the frequency of cigarette smoking and alcohol consumption, as well as their gender distribution.

The connection between psoriasis and cigarette smoking and alcohol consumption is quite complex and has not been fully investigated. Cigarette smoking, ie nicotine and alcohol affect many processes in the body, and can affect psoriasis in several ways. Cigarette smoking works by nicotine increasing the production of proinflammatory cytokines, such as TNF- α , IL-12, IL-17, IL-2 (21).

In addition to affecting the production of proinflammatory cytokines, alcohol also affects the proliferation of keratinocytes (29). Alcohol consumption and cigarette smoking affect psoriasis, but psoriasis and everything that accompanies it, stigmatization, prejudice and consequent isolation can affect the habit of smoking cigarettes and consuming alcohol. Caring for habits is part of a comprehensive care for psoriasis. Quitting cigarette smoking and alcohol consumption in psoriasis sufferers should be one of the goals of long-term disease control.

5. CONCLUSION

Cigarette smoking and alcohol consumption are present in psoriasis sufferers, cigarette smoking is associated with the severity of the disease, and alcohol consumption is not. Encourage patients to get used to it, and enable a multidisciplinary approach to this problem.

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- **Conflict of interest:** The authors declare no conflict of interest.
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