DIFFERENCES IN SEBORRHEIC DERMATITIS AREA SEVERITY INDEX IN IMMUNOCOMPROMISED AND NON-IMMUNOCOMPROMISED PATIENTS

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DOI: https://doi.org/10.33508/jwmj.v6i2.5482

ABSTRACT

Introduction: Seborrheic Dermatitis (DS) is a papulosquamous skin disorder with a predilection for areas rich in sebaceous glands, scalp, face and body. Seborrheic dermatitis in immunocompromised patients is clinically different from non-immunocompromised seborrheic dermatitis patients. Seborrheic dermatitis is one of the clinical symptoms and is most often found in immunocompromised patients such as individuals who have HIV/AIDS compared to seborrheic dermatitis patients in general.
Objective: To determine the difference in seborrheic dermatitis area severity index in immunocompromised and non- immunocompromised patients.
Method: This research design uses analytical observational with a cross sectional approach. The population of seborrheic dermatitis patients was 70 people with 35 immunocompromised patient respondents and 35 non-immunocompromised respondents. Data collection starts from September 22 to October 26 2023. Seborrheic dermatitis examination is carried out on the face and scalp by comparing the area affected by seborrheic dermatitis with the surrounding area and then assessing the degree of the area affected by seborrheic dermatitis using SDASI. The assessment of the area of the lesion is multiplied by the sum of the erythema, scale and papule scores with a severity classification, namely: Mild: 0-7.9, Moderate: 8-15.9, Severe: >16. The results of the examination will be recorded and a score for the severity of seborrheic dermatitis on the face and scalp will be calculated.
Results: Seborrheic dermatitis in 35 immunocompromised respondents and 35 non-immunocompromised respondents. The results obtained from the seborrheic dermatitis patient group were immunocompromised patients, namely 14 respondents with mild degrees (40.0%), 17 respondents with moderate degrees (48.6%), and four respondents with severe degrees (11.4%) while in the group of non-immunocompromised patients there were 20 respondents with mild degrees. (57.1%), 11 respondents had a moderate degree (31.4%), and four respondents had a mild degree (11.4%). The results of research analysis using the independent T-test showed that there was a difference in SDASI in immunocompromised and non-immunocompromised patients with a value of $p = 0.040$ ($p < 0.05$).
Conclusion: There are differences in SDASI in immunocompromised and non-immunocompromised patients.

Keywords: seborrheic dermatitis area severity index, immunocompromised, non-immunocompromised

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INTRODUCTION

Skin is the outermost layer of the human body. Healthy skin conditions really support a person's self-confidence, when skin is unhealthy it can affect self-image and become a health problem that needs attention. There are many aetiologies that cause health problems on the skin starting from bacteria, viruses and Malassezia such as seborrheic dermatitis.[1] Seborrheic dermatitis (DS) is a papulosquamous skin disorder with a predilection for areas rich in sebaceous glands, scalp, face and body. Seborrheic dermatitis can occur at any age, and is divided into two age groups, namely neonates and adults. Seborrheic dermatitis in babies is related to the number and activity of the sebaceous glands. Sebaceous glands are active in new born babies due to stimulation of androgen hormones from the mother, then these glands become inactive until puberty.[2] Seborrheic dermatitis is usually suffered by more men than women because the production of androgen hormones is higher in men so that production There is more sebum in men as a result of increased sebaceous gland activity. Increased sebum can induce Malassezia proliferation and trigger seborrheic dermatitis.[3]

Clinically, seborrheic dermatitis manifests with scaly erythematous lesions distributed symmetrically in areas with many sebaceous glands, such as the scalp, nasolabial folds, eyebrows, eyelids, postauricular area, sternum, and upper back in areas with many sebaceous glands. Among the predilection areas, the most common areas were the face (87.7%), upper body (26.8%), lower extremities (2.3%), and upper extremities (1.3%). On the scalp, the manifestations of seborrheic dermatitis can vary from mild symptoms appearing as pityriasis sicca (dandruff) to oily, scaly erythematous lesions.[4] Seborrheic dermatitis is more common in immunocompromised patients such as HIV/AIDS. According to the Indonesian Ministry of Health in 2017, the cumulative number of HIV/AIDS cases in Indonesia has increased to 242,699 HIV cases and 87,453 AIDS cases. helper (CD4+). CD4+ cells are also found in skin tissue such as Langerhans cells and can be infected by HIV. Therefore, people with HIV/AIDS who have a reduced immune system can experience opportunistic infections.[5,6] Opportunistic infections in HIV/AIDS patients cause a decrease in the number of CD4 lymphocytes. Individuals with immune systems A good person has a CD4 value that ranges between 1400-1500 cells/μ, while people with a poor immune

system, for example infected with HIV, have a CD4 value that decreases over time. Opportunistic infections generally occur when the CD4 count is <200/ml. A decrease in CD4 causes manifestations of skin disorders due to infection from various microorganisms such as bacterial, viral, fungal infections, or the emergence of malignancies which can be seen in skin disorders, one of which is seborrheic dermatitis.[7] Seborrheic dermatitis in immunocompromised patients is different from seborrheic dermatitis in non-immunocompromised patients.

Seborrheic dermatitis in immunocompromised patients such as HIV/AIDS is more extensive, severe, usually more difficult to treat, and clinically appears more extensive with more severe inflammation and desquamation and a higher load of Malassezia spp than in healthy subjects with visible macular facial lesions. erythema like butterflies while seborrheic dermatitis generally feels itchy like burning and makes the scalp become red and a yellowish oily scale appears. The prevalence of seborrheic dermatitis in the general population ranges from 2.35% - 11.30%, while in immunocompromised patients it increases by 34%-83% such as in HIV/AIDS patients with the prevalence rate of seborrheic dermatitis patients almost equal in children, women and men.[8] Determining the severity of seborrheic dermatitis in immunocompromised patients and *non-immunocompromised* can be assessed using the seborrheic dermatitis area severity index (SDASI). Seborrheic dermatitis area severity index (SDASI) is an assessment of the area of the lesion multiplied by the sum of the erythema, scale and papule scores with a classification of severity levels, namely: Mild: 0-7.9, Moderate: 8-15.9, Severe: >16.9

Based on the description above, seborrheic dermatitis in immunocompromised patients is clinically different from non- immunocompromised seborrheic dermatitis patients. Seborrheic dermatitis is one of the clinical symptoms and is most often found in immunocompromised patients such as individuals who have HIV/AIDS compared to seborrheic dermatitis patients in general, so researchers are interested in knowing the differences between seborrheic dermatitis in immunocompromised and non-immunocompromised patients based on the seborrheic dermatitis area severity index (SDASI) score.

METHOD

This research design uses analytical observational with a cross sectional approach. The population of seborrheic dermatitis patients was 70 people with 35 immunocompromised patient respondents

and 35 non-immunocompromised respondents. Data collection starts from September 22 to October 26 2023. Seborrheic dermatitis examination is carried out on the face and scalp by comparing the area affected by seborrheic dermatitis with the surrounding area and then assessing the degree of the area affected by seborrheic dermatitis using SDASI. The assessment of the area of the lesion is multiplied by the sum of the erythema, scale and papule scores with a severity classification, namely: Mild: 0-7.9, Moderate: 8-15.9, Severe: >16. The results of the examination will be recorded and a score for the severity of seborrheic dermatitis on the face and scalp will be calculated

The data will be processed by the application Statistical Product and Service Solution (SPSS) 26th version with nominal and ordinal data scales. Data analysis technique using the Independent T-test correlation test to look for differences between two variables.

RESULT

Based on the research, the following data was obtained.

Table 1. characteristics of the research sample based on gender

Gender	Frequency	Percentage (%)
Man	60	71.4%
Woman	10	28.6%

Table 1 shows that research analysis based on gender shows that 60 (71.4%) people affected by seborrheic dermatitis were men, while 10 people affected by seborrheic dermatitis were women (28.6%).

Table 2. Characteristics of the research sample based on degree of severity

	Light	Medium	Heavy
Immuno-compromised	14	17	4
Non-Immunocompromised	14	17	4

In table 2 above it can be explained that in the immunocompromised group there were 14 patients (40.0%) with mild grade seborrheic dermatitis, 17 patients (48.6%) with moderate grade seborrheic dermatitis, and four patients (11.4%) with severe grade seborrheic dermatitis while in the non-immunocompromised group contained 20 patients (57.1%) with mild seborrheic dermatitis, 11 patients (31.4%) with moderate seborrheic dermatitis, and four patients (11.4%) with severe seborrheic dermatitis.

Table 3. Data normality test using the Shapiro Wilk test

	Significance	Description
Immunocom-promised	0.53	Significant
Non-Immunocompromised	0.60	Significant

Based on table 3, the results of the normality test in the immunocompromised group can be described, namely with a significant value of 0.53 and the non-immunocompromised group with a significant value of 0.60. The results of this value indicate that the data is normally

distributed because it meets the significance requirements of the Shapiro Wilk test.

Table 4. Homogeneity test of research results

	Significance	Description
Immunocom-promised and non-Immunocompromised	0.982	Homogeny

Based on table 4, the results of the homogeneity test above show that the value of the immunocompromised and non- immunocompromised variables shows a significance result of 0.982, which meets the requirements for the significance value.

Table 5. Homogeneity test of research results

	Significance	Description
Immunocom-promised and non-Immunocompromised	**0.040**	**Homogeny**

Based on table 5, it can be seen that the significance value of the immunocompromised and non-immunocompromised variables is 0.040, so it can be concluded that there is a difference between immunocompromised and non-immunocompromised Seborrheic Dermatitis Area and Severity Index.

DISCUSSION

This research is an analytical observational study with a cross sectional approach. The subjects of this study were 70 seborrheic dermatitis patients. In this study, we compared the differences between the Seborrheic Dermatitis Area and Severity Index, which was divided into two, namely immunocompromised and non-respondents (11.4%) with severe seborrheic dermatitis. Meanwhile, in the patient group immunocompromised, there were 14 respondents (40.0%) with mild seborrheic dermatitis, 17 respondents (48.6%) with moderate seborrheic dermatitis, and four respondents (11.4%) with severe seborrheic dermatitis.

Based on the results of the severity of seborrheic dermatitis in immunocompromised and non-immunocompromised patients, it can be seen that the severity of seborrheic dermatitis in immunocompromised patients is more severe than in non-immunocompromised seborrheic dermatitis patients. In previous research it was said that immunocompromised patients were more severe because it was associated with a decrease in the immune system. Low levels of CD4 T cells (body defence cells) in immunocompromised patients, especially in HIV/AIDS patients, cause opportunistic infections to occur. An opportunistic infection that is often found in HIV/AIDS patients is seborrheic dermatitis, a chronic inflammatory skin disease whose pathogenesis is not yet fully understood but is thought to be due to dense colonies of Malassezia sp.

Based on the results of data analysis from a total of 70 respondents, it was found that 60 (71.4%) seborrheic dermatitis respondents were men and 10 seborrheic dermatitis patient respondents were women (28.6%). This shows that seborrheic dermatitis patients based on gender are more likely to be men than women. This is similar to the theory which states that gender is a risk factor for seborrheic dermatitis written by Lausarina Bas et al who also say that men experience an increase in incidence twice as large as women, which is associated with androgen hormone stimulation. Androgen hormone production is higher in men, so that men produce more sebum as a result of increased sebaceous gland activity.

Increased sebum can induce the proliferation of Malassezia sp and trigger seborrheic dermatitis. This may be supported by the production of androgen hormones which stimulate or control the development and maintenance of male characteristics. Hypothesis testing was carried out in this study using an independent T-test comparison test by comparing the Seborrheic Dermatitis Area and Severity Index between immunocompromised and non-immunocompromised seborrheic dermatitis patients. Through this test, the results were $p<0.05$. This shows that there are significant differences in the Seborrheic Dermatitis Area and Severity Index variable groups between immunocompromised and non-immunocompromised.

CONCLUSION

In this study there were significant differences in the Seborrheic Dermatitis Area and Severity Index variable groups in immunocompromised and non-immunocompromised patients.

ACKNOWLEDGEMENTS

The researcher would like to express his gratitude to the Faculty of Medicine, Widya Mandala Catholic University Surabaya and the researcher would also like to thank the supervisors, examiners, and all those who have been involved and participated in this research from start to finish.

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