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Assessment of psychological state in patients with acne

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Abstract

Background: Acne vulgaris is a cutaneous chronic inflammatory disorder with complex pathogenesis. It is characterized by the development of seborrhea, comedones, papules, pustules ,nodules and cyst. Acne has been suggested to have many psychological effects, such as low self-esteem, low self-confidence, anxiety, depression, and even suicidal ideation. The aim of this work is to assess psychological state in patients with acne. Methods: This was case/control study which was carried out at Dermatology, Venereology and Andrology, in collaboration with psychiatry Department at Benha University Hospitals. Fourty participants were included in this study. They were divided in to two groups. The first group included 30 acne patients and the second group included 10 age and sex matched healthy acne free volunteers serving as controls. Results: There was significant difference in severity of depression according to Beck scale score between acne patients and control. Conclusion: There is a significant positive correlation between Beck scale score and severity of acne.

Key words: psychological state, Acne vulgaris.

1. Introduction

Acne vulgaris is one of the commonest skin disorders that dermatologists have to treat, mainly affecting adolescents, but it may present at any age. It is a chronic inflammatory disease of pilosebaceous unit**.** Microcomedone is the earliest subclinical 'lesion' in acne that may change into open and closed comedones and into different inflammatory lesions, such as papules, pustules, nodules and cysts [1]

Patients suffering from skin diseases are often affected by a variety of psycho-pathologic problems such as depression, anxiety, disorders of self-image, distortion of body image, behavioral problems, and low self-esteem. These conditions occur in about 30%~60% of dermatological patients, significantly more often than the general population, and might have their source in a complex interplay that takes place between the skin and neuroendocrine and immune systems [2].

Although acne vulgaris is not life threatening, it can lead to significant cosmetic disfigurement. In addition, acne vulgaris is frequently associated with impaired quality of life and psychiatric problems such as depression and anxiety. Higher levels of depression and anxiety have been observed in acne patients than in general population. There might be common pathophysiologic factors that promote the development of acne and increase risk of depression and anxiety in acne patiens [3]

Acne pathogenesis is not clearly understood. Cutebacterium acnes result in the release of some chemotactic factors that cause an accumulation of neutrophils and some inflammatory factors, such as lysosomal enzymes, as a result of phagocytosis and damage to the follicular epithelium. ROS are released from the active neutrophils in the inflammatory tissue. These oxidants attack DNA and/or membrane lipids and cause chemical injury [4]. ROS synthesized from neutrophils are closely associated with the pathogenesis of various inflammatory skin diseases [5].

2. The aim of this work

Is to assess psychological state in patients with acne.

3. Patients and Methods

Type of the Study

This study is a case control study.

Administrative Design and Ethical Considerations

The study was approved by the local Ethic Committee of Benha Faculty of Medicine. Informed consent was obtained from each individual before being enrolled in the study.

This study was conducted on 40 participants; they were divided into 2 groups:

Patient groups

It included 30 acne patients diagnosed according to Global Acne Grading Scale (GAGS) 10 mild , 10 moderate, 10 severe [10].

Control group

It included 10 age and sex matched apparently healthy persons with no acne lesions or history of acne.

Inclusion criteria

The study included patients suffering from acne vulgaris of different gender, age and different degrees of severity.

Exclusion criteria

- Patients suffering from any systemic disease or skin disease
- Patients suffering from any psychological disease

Methods

All patients were subjected to the following:

History taking

- A detailed history regarding acne; course, onset, duration, and previous treatment.

Questionnaire:

The participants were asked to answer a self-filling questionnaire Anonymously(BDI-II**)** [(11).] The Arabic Version of Beck's Depression Inventory – II (BDI-II) [12].

General medical examination:

To detect the signs of other systemic diseases.

- Patients will be carefully examined for distribution , clinical type and severity of acne and acne scars.
- Acne grading was performed using the (GAGS)

Statistical Analysis

The collected data was revised, coded, tabulated and introduced to a PC using Statistical package for Social Science (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.). Data were presented and suitable analysis was done according to the type of data obtained for each parameter. Mean, Standard deviation (± SD) for parametric numerical data, while Median and range for non-parametric numerical data. Frequency and percentage of non-numerical data. The following tests were used: Student T Test, Mann Whitney Test (U test), The Kruskal-Wallis test, Chi-Square test, Correlation analysis, The ROC Curve (receiver operating characteristic) and Regression analysis. A p value is considered significant if <0.05 at confidence interval 95%.

4. Results

There was significant increase in number of patients with severe depression in acne patients in comparison with control group according to Beck depression inventory scale score **(Table** 1**).**

Table (1) Beck scale score between patients and controls.

		Control group N=10		Acne group N=30		*p*
		N	**%**	**N**	**%**	
Beck scale	**Minimal**	6	60%	11	11.0%	**0.001**
	Mild	0	0%	1	1.0%	
	Moderate	4	40%	8	8.0%	
	Severe	2	20%	10	10%	

Beck scale score showed significant positive correlation with severity of acne (p=0.001), but non significant correlation with age, and duration of acne (p>0.05 for each) **(Table 2).**

Table (2) Correlations of Beck scale score with age, BMI, duration and severity of acne among studied cases.

	Patient group Beck scale	
	Rs	***P***
Age	0.219	0.083
Duration	0.242	0.081
Severity of acne	0.414	**0.001**
rs, Spearman's correlation coefficient		

5. Discussion

The present study showed that hundred percent (100%) of acne patients had depression. These results were in agreement with other studies as **Kamamoto et al. [13]**, who revealed that acne had a significant impact on self-esteem and quality of life. They also stated that treatment of acne had improved symptoms of depression.

That is why patients suffering from skin diseases are often affected by a variety of psycho-pathologic problems such as depression, anxiety, disorders of self-image, distortion of body image, behavioral problems, and low self-esteem. These conditions occur in about 30%~60% of dermatological patients, significantly more often than the general population.

It was also found that the risk of depressive symptoms or suicidal thoughts increases particularly in case of chronic dermatoses and lesions located on the visible parts of the body, especially involving the face. Also clinically mild and moderate severity skin lesions may be associated with significant suicidal attacks. The close interaction between the skin and the mind is revealed in chronic and cosmetically disfiguring lesions in the course of atopic dermatitis, psoriasis, alopecia areata , acne vulgaris, and vitiligo [17].

The quality of life of patients with acne can be as severely affected as those with other chronic medical conditions. The change in the skin' s appearance may be complicated by a changed body image, psychological distress, anger, fear, shame, embarrassment, and bullying and stigmatization within peer groups in addition to medications used for treatment of acne that can lead to psychiatric side effects including depression and suicidal thoughts [19].

Our results were in contrast to **Aktan et al. [20]** who showed non significant differences in anxiety and depression between their patients versus controls. This discrepancy could be due to methodological difference as they used Hospital Anxiety and Depression Scale (HADS) questionnaire.

The present study showed that there was a significant positive relation between acne severity and degree of depression. **Kang et al [21]** reported that the risk of depression in acne patients was increased with the increase in degree of acne severity. These results imply that the level of depression tends to escalate

with increasing severity of AV, which is supported by the findings of this study .

On the other hand, **Hahm et al [25] and Sereflican et al [26]** denied any relation of acne severity with depression . This discrepancy could beas the following: their study was conducted on only 38 acne patients receiving oral isotretinoin . They stated that oral isotretionin therapy alleviates depressive symptoms and improvement in depression was directly related to improvement in quality of life of acne patients rather than improvement in acne grade of severity.

The result of the present study showed that BDI scores had non significant correlation to age of patients and duration of acne lesions. These results were in agreement with other studies as **Duman et al [27],** who found no relation between depression and age and between depression and duration of disease. On the other hand, **Al-Huzali et al [28]** showed that BDI scores had significant positive correlation to age of patients and duration of acne lesions.

5. Conclusion

There is a significant positive correlation between Beck scale score and severity of acne.

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