



ORIGINAL RESEARCH PAPER

Dermatology

STUDY OF ASSOCIATION BETWEEN ACNE AND STRESS IN TEENAGERS

KEY WORDS: Stress, Acne, Teenager

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ABSTRACT

Background: Acne vulgaris is the most common chronic inflammatory skin disease of the hair follicle. Psychological stress has also been identified amongst factors that exacerbate acne. Several studies have shown that psychological stress can alter the immune functions of the skin

Materials and methods: A total of 300 patients were included in the study. Patients were divided in two groups; subject and control groups with each group containing 150 patients. Both the cases and controls were given 14 items questionnaires of Perceived Stress Scale to assess the stress level. All the cases were also assessed by Global Acne Grading Scale to assess severity of acne

Results: Out of the 300 patients enrolled, 170 patients were females and 130 patients were males. Showing Low stress score among 48 cases as compared to 96 cases in controls. Moderate stress score was seen in 84 of cases as compared to 45 controls. High stress score was seen in 18 cases as compared to 9 controls.

Conclusion: Acne as a disease lasts longer and persists into adulthood. Stress triggers or worsens acne by multiple mechanisms. The role of stress induced acne has been identified very accurately. Stress management must be emphasized upon during management of acne.

INTRODUCTION

Acne vulgaris is the most common chronic inflammatory skin disease of the hair follicle. It is almost universally present in adolescents (about 95% are affected)^{1,2}. The pathogenesis of acne vulgaris is multifactorial, with hormones, sebum production and bacterial colonization playing major roles^{3,4}. Psychological stress has also been identified amongst factors that exacerbate acne^{5,6,7}. Moreover, several studies have shown that psychological stress can alter the immune functions of the skin⁸ and cutaneous barrier function⁹.

MATERIALS AND METHODS

A case control study was planned as method for this project. The cases were the teenagers (age 13-18 yrs) suffering from Acne vulgaris visiting in the Dermatology Out Patient Department of the hospital. A control group not diagnosed as any psychiatric or any other medical disorder and similar socio-demographic profile as that of cases group was selected for the study. Considering the proportion of controls exposed to risk of stress factor at 45% and keeping Odds Ratio at about 2 with 90% confidence interval and 80% power, the sample size as calculated by Software Open Epi Info came out to be 290 i.e. 145 in each group. We took 150 subjects per group. After taking well informed written consent the subjects were included in the study.

Both the cases and controls were given 14 items questionnaires of Perceived Stress Scale to assess the stress level. This test helps to assess the stress level over the period of one month. All the cases were also assessed by Global Acne Grading Scale to assess severity of acne. There are four different grades of acne as per this scale namely comedones, papules, pustules and nodules. The Data was entered in MS EXCEL and analysis was done by calculating Chi square test and p value levels using Chi Square Test Calculator Software of Social Science Statistics.

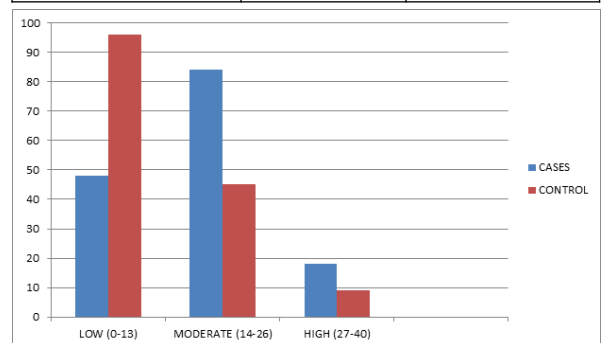
RESULTS

A total of 300 patients were included in the study. 170 patients were females and 130 patients were males.

Table 1 summarizes the results showing Low stress score among 48 cases as compared to 96 cases in controls. Moderate stress score was seen in 84 of cases as compared to 45 controls. High stress score was seen in 18 cases as compared to 9 controls.

Table 1: Stress score in patients and controls

Perceived Stress Score	cases	Controls
Low (0-13)	48 (32%)	96 (64%)
Moderate (14-26)	84 (56%)	45 (30%)
High (27- 40)	18 (12%)	9 (6%)
TOTAL	150(100%)	150(100%)

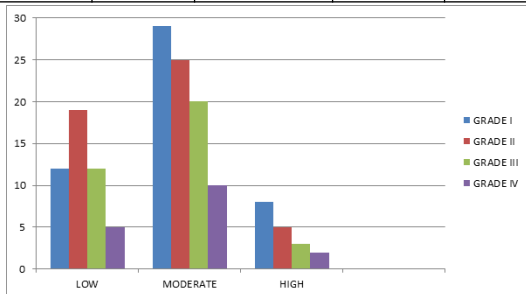


Graph 1: Stress score in patients and controls

Table 2 summarises that perceived acne stress score was low for grade IV acne vulgaris where as it was high in grade I, II acne vulgaris. The severity of acne was associated with increase in stress levels. In cases with Grade I acne, 12 cases had low stress, 29 patients had moderate stress, 8 cases had high stress. Grade II Acne showed that 19 cases had low stress score, 25 cases had moderate score and 5 cases has high score. Grade III Acne showed 12 cases of low stress score, 20 cases moderate score and 5 cases had high stress score and for grade IV were 5 cases had low stress score, 10 cases had moderate stress score and 2 cases had high stress score.

Table 2: Perceived stress score

Grades of Acne	Perceived stress score			Total
	LOW	MODERATE	HIGH	TOTAL
I	12	29	8	49
II	19	25	5	49
III	12	20	3	35
IV	5	10	2	17
TOTAL	48	84	18	150



Graph 2: Perceived stress score

DISCUSSION

In our study, total patients included were 150 patients each in control group and subject group.

In a recent survey among 215 sixth-year medical students, 67% of the students identified stress as the cause of their acne¹⁰.

In a study by George RM, Sridharan R¹¹, 36 (32.7%) patients reported exacerbation during periods of emotional stress.

In the study of Khunger and Kumar¹², 25.7% of patients reported stress as an aggravating factor, in contrast to Goulden *et al.*¹³, who reported that in 71% of their patients acne flared with stress.

In our study it was evident that patients with higher perceived stress had higher incidence of acne and rightly called as stress acne.

CONCLUSION

Acne as a disease lasts longer and persists into adulthood. Stress triggers or worsens acne by multiple mechanisms. The role of stress induced acne has been identified very accurately. Stress plays a role in induction as well as aggravation of acne. Hence stress management must be emphasized upon during management of acne.

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