A study to determine the quality of life in patients with acne vulgaris

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Abstract

Introduction: This study was undertaken to determine the severity of acne vulgaris and its relation with quality of life of these patients. There were 132 patients with mild grade, 29 patients with moderate grade and 2 patients with severe grade acne vulgaris according to Global Acne Grading System (GAGS). Quality of life was assessed using Cardiff Acne Disability Index (CADI) which showed moderate grade in most of the patients (50.3%). Patients with post acne scarring showed poor quality of Life. The present study demonstrated a significant correlation between severity of acne and impairment in quality of life. Patients with severe acne had high grade CADI whereas patients with mild acne had low grade CADI. Our study thus provides further evidence of the association between severity of acne and lowered quality of life, and also brings attention to the need for a holistic approach in the management of moderate-to-severe Acne vulgaris patients.

Keywords: Acne vulgaris, Cardiff Acne Severity Index (CADI), Global Acne Grading System (GAGS), Quality of Life.

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INTRODUCTION

Acne is a chronic inflammatory disease of the pilosebaceous units. The clinical pictures vary from mild comedonal acne, with or without sparse inflammatory lesions, to aggressive fulminant disease with associated systemic upset. Scarring usually follows deep seated inflammatory lesions. Appearance, particularly facial appearance, represents an important aspect of one’s perception of body image. Studies have shown that many acne patients experience shame, embarrassment and anxiety, lack of confidence, impaired social contact and a significant problem of unemployment. Clinical depression has been demonstrated in acne patients and the prevalence of active suicidal ideation is higher in acne patients than reported in the general population¹. Over the last decade, there has been renewed interest in the measurement and identification of disease disability and impact of disease on quality of life. The measurement tools can be used to monitor change in quality of life during therapy, and to devise strategies to improve adherence. Cardiff Acne Disability Index (CADI) was developed to quickly assess the level of disability caused by acne and to identify patients with increased disability and the need for additional intervention.

MATERIAL AND METHODS

A total of 163 patients with Acne vulgaris of age between 12 and 30 years old, who attended the Out Patient department of Dermatology, Pariyaram Medical College, Pariyaram, Kerala, constituted the subject material for the study. This was a hospital based cross sectional study. Individuals with history of a known psychiatric disorder and patients with somatic diseases such as cardiac, pulmonary and joint diseases, diabetes, hypertension and epilepsy that affect their mental status were excluded from the study. A detailed history of each patient was recorded in the Proforma specially designed for the study. The severity of acne was graded according to Global...
Acne Grading System (GAGS). Post acne scarring and hyper pigmentation, if any was recorded. GAGS are a simple, accurate and fast method for the determination of severity of acne. The severity was graded as mild if the score was 1–18, moderate with scores from 19 to 30, severe with scores from 31 to 38, and as very severe if the score is more than 38. The quality of life in these patients was assessed by Cardiff Acne Disability Index (CADI), which is a well validated self reported questionnaire consisting of five questions with a Likert scale, four response categories (0-3). The final score ranges from 0-15. The five questions were related to the feeling of aggression, frustration, interference with social life, avoidance of public changing facilities, and appearance of the skin—all over the last month—and an indication of how bad the acne was. The CADI score was calculated by summing the score of each question resulting in a possible maximum of 15 and minimum of 0. CADI score was graded as low (0-4), medium (5-9) and high (10-15). Lower the cumulative CADI score lower the level of disability experienced while a higher score indicates a higher level of disability.

OBSERVATION AND RESULTS

The mean age of the study group was 20.2 ± 4.1 years. Most of the patients in this study were in the age group between 16-20 years (49.1%). Of the 163 patients included in the study 72 patients were males (44.2%) and 91 patients were females (55.8%). The mean age of onset was 16.6 ± 3.5 years. Post acne hyperpigmentation was seen in 73 patients and 60 patients had post acne scarring. Stress was found to be an aggravating factor among 52 patients (31.9%).

Severity of Acne vulgaris according to Global Acne Grading System (GAGS)

Of the 163 patients in the study group, in 132 patients (81.0%) the severity of Acne vulgaris was graded as mild according to GAGS. 29 patients (17.8%) had moderate severity acne and 2 patients (1.2%) had severe type of grading of Acne vulgaris. The mean GAGS score was 12.5 ± 6.3.

Impairment of quality of life was assessed by Cardiff Acne Disability index. Impairment of quality of life was found to be low in 69 patients (42.3%), whereas medium in 82 patients (50.3%). 12 patients (7.4%) showed a high impairment in quality of life due to Acne vulgaris. The mean CADI score was 5.4 ± 2.6.

Comparison between severity of acne based on GAGS score and quality of life based on CADI was done. Impairment of quality of life was found to be low in 91.3% cases of mild degree severity of acne, and 8.7% cases of moderate / severe degree severity of acne. Medium grade severity of impairment in quality of life was seen in 80.5% mild acne cases and 19.5% moderate / severe acne cases. Severe impairment of quality of life was seen in 25.0% cases of mild acne cases and 75.0% cases of moderate / severe acne cases.
In patients with post Acne hyperpigmentation, CADI grades were low in 39.7%, medium in 52.1% and high in 8.2%.

Figure 5: Measurement of quality of life based on post acne hyperpigmentation

DISCUSSION
The present study revealed a female preponderance (male: female ratio 1:1.26) as observed by Al-Ameer et al (M:F ratio 1:1.8) while Adityan et al in their study found a male predominance, M:F ratio 1.25:1 \(^{2,3}\). Stress was found to be an aggravating factor among 52 patients (31.9%). Patients with acne often complain of breakouts following the experience of frustrating or stressful events and it has been observed that post adolescent patients with acne tend to be intense and ambitious people with high-visibility jobs. The mechanisms may include an increased glucocorticoids and adrenal androgens, possibly inducing sebaceous hyperplasia. Stress induced release of neuroactive substances within the epidermis has also been proposed to aggravate acne. Study by Lorenz et al linking acne exacerbation with emotional factors reported an increase in acne lesion count on days following an interview during which anger was intentionally provoked\(^4\). Kane et al noticed that 40.2% of their 93 patients with acne vulgaris had post acne scarring. Kilkenny et al reported 25% of the 615 patients with post-acne scarring\(^5,6\). Post-acne scarring was noticed in 60 patients (36.8%) and was in accordance with kane et al. study. In our study, 73 patients (44.8%) presented with post-acne hyperpigmentation. Kane et al noted that 67.7% of their patients had post-acne pigmentation\(^7\). Similarly Taylor et al reported that 52.6% of their patients had post-inflammatory hyperpigmentation\(^7\). Facial acne was graded using the Global Acne Grading System (GAGS). In this study GAGS score ranged from 3 to 38. 132 patients (81.0%) had mild acne (GAGS score 1-18). 29 patients (17.8%) had moderate acne (GAGS score 19-30). 2 patients had severe acne (GAGS score 31-38). However, no patients were classified as very severe acne (GAGS score >38). The mean GAGS score in our study was 12.5 ± 6.3. Amal Kokandi in his study of Clinical severity of Acne vulgaris using Global Acne Grading System, conducted in 112 cases recorded that most cases (82) were classified as mild acne (73.2% of the cases), 28 were classified as moderate severity (25% of the cases), 2 were classified as severe acne (1.8% of the cases) and no cases were classified as very severe\(^8\). Hanishah A and Khairani et al in their study on school-aged adolescents in Malaysia, consisting of 276 subjects, found that 249 patients (90.2%) had mild acne.\(^9\) 20 patients (7.3%) had moderate severity acne and 7 patients (2.5%) had severe acne. The findings of our study are consistent with previous studies and showed that majority of acne cases were of milder variety. Over the last decade, there has been renewed interest in the measurement and identification of disease disability and impact of disease on quality of life. The Cardiff acne disability index (CADI) was used in this study. In our study CADI score ranged from 1 to 13. The mean CADI score in our study was 5.4 ± 2.6. 69 patients (42.3%) were classified as having low grade CADI. Majority of the patients were included in medium grade CADI. This group included 82 patients, constituting 50.3% of the total patients. High grade CADI was seen only in 12 patients (7.4%). Amal Kokandi in his study in Acne female adults, consisting of 112 cases found that the impairment of quality of life as determined using CADI questionnaire, most of the cases were classified as mild (n=82) or moderate (n=28)\(^8\). In this study there was a significant correlation between acne severity and quality of life. Patients with low impairment of quality of life, were having mostly mild type of acne (n=63) (91.3%). Whereas patients with high grade CADI, i.e. having severe impairment of quality of life were having moderate/ severe acne (n=9) (75.0%). In our study there was also a significant association between quality of life and acne scarring (p value=0.002). Most of the patients had at least moderate impairment of quality of life due to acne scarring (56.7%), than low impairment in the quality of life (28.3). However there was no association between post acne hyperpigmentation and quality of life in our study. Golchai in his study showed that prevalence of anxiety was 68.3% in acne patients which showed a significant difference with control group\(^10\). However they found that there was no relationship between severity of acne and severity of anxiety and depression. Amal Kakandi found that CADI did not correlate with acne severity as assessed by GAGS\(^8\). A recent study showed similar result in Hongkong, which found no correlation between GAGS acne severity score and CADI score\(^11\). A similar result was obtained using different scoring system for acne severity, ECLA scale. As ECLA overall scale did not correlate with CADI score in French population sample, similarly in Turkish sample of patients there was no significant relationships between acne severity and AQOLS/DLQI\(^12,13\). Additionally anxiety or depression
(assessed by HAD, hospital anxiety and depression scale) were reported not to correlate with acne severity. These studies showed that quality of life was impaired in acne vulgaris patient’s irrespective of their severity. On the other hand, Walker and Lewis-Jones found that a good correlation existed between CADI and other life quality measures CLDQI (Children’s Dermatology Life Quality Index) in Scottish teenagers. Lasek et al reported greater over all effects on quality of life, in older adult acne patients regardless of disease severity, with similar effects on both sexes. Jones-Caballero et al also found that older patients had a worse acne-related quality of life. Although its influence was small. In their study, women experienced greater quality of life impairment, although acne was significantly more severe in men. Acne can have profound impact on quality of life. Although there was a direct correlation with disease severity in our study, its effect on quality of life does not always correlate with acne severity as suggested by other studies. The disability caused by acne must be taken into account when individualizing treatment. As with other diseases, measures of quality of life in patients with acne can supplement measures of clinical severity in assessing comprehensively the outcomes of disease and treatment.

CONCLUSION

Acne vulgaris is common among teenagers and can cause major impact in their quality of Life. There is a direct correlation between severity of acne and their quality of life. Greater the severity of grade of acne, greater the impairment in the quality of life. Scarring in acne can significantly impair the quality of life. Quality of life measures can influence the choice of therapy. Early treatment can prevent progression of the disease, its complications and thus improve the quality of life in acne patients. In patients with a severe impact on their quality of life, a more aggressive therapy may be justified. Psychological support along with pharmacological therapy should be part of acne treatment plan.

REFERENCES


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