International Journal of Pharmacy and Pharmaceutical Sciences

Print ISSN: 2656-0097 | Online ISSN: 0975-1491 Vol 14, Issue 11 2022

Original Article

A STUDY OF CLINICAL PATTERN OF ACNE VULGARIS PATIENTS PRESENTING IN A TERTIARY CARE HOSPITAL

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Received: 14 Jul 2022, Revised and Accepted: 18 Sep 2022

ABSTRACT

Objective: To evaluate the clinical pattern of acne vulgaris in patients attending a tertiary care hospital.

Methods: This hospital-based observational study was conducted from September 2021 to March 2022. A total of 203 consecutive patients with acne vulgaris attending dermatology OPD were included. Pregnant and lactating women, drug-induced acne, and other acneiform eruptions were excluded. Data were collected in a pre-designed proforma. The parameters included were age, gender, age of onset, duration, sites of involvement, acne grade, types of lesions, menstrual history, and post-acne complications. Results were expressed in percentages. MS Excel software was used for data entry and analysis.

Results: Two hundred and three cases were included, among which 61.6% were female and 38.4% were male. The commonest age group affected was 21-25 y (37.9%) followed by 16-20 y (31.5%). The commonest site of involvement in acne was the face (86.2%) followed by the trunk (9.4%). Arms (2.5%) and the neck (1.9%) were less affected areas. The majority of patients had Grade 2 (53.7%) acne, followed by Grade 3 (21.8%) and Grade 1 (20.7%) and Grade 4 (3.9%). Persistence of acne in females till late age was observed. Post-acne hyperpigmentation 98 (48.3%) and scarring 46 (22.7%) were most common complications. Premenstrual flare was seen in 36 (17.7%) patients. The commonly associated disease with acne is seborrheic dermatitis, observed in 28 (13.8%) patients.

Conclusion: This study revealed the clinical pattern of acne vulgaris in a tertiary care hospital in Assam.

Keywords: Acne vulgaris, Tertiary care hospital, Clinical pattern

DOI: https://dx.doi.org/10.22159/ijpps.2022v14i11.45824. Journal homepage: https://innovareacademics.in/journals/index.php/ijpps.

INTRODUCTION

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous unit characterized by various lesions such as comedones (hallmark lesions), papules, pustules, nodules, and scarring [1]. Acne is one of the most common skin disorders worldwide, with an estimated global prevalence of 9.38% [2]. According to the Global Burden of Diseases (GBD) study, acne affects ~85% of young adults [3]. In India, acne is prevalent in 72.3% of adolescents and 27% of the adult age group [4, 5]. Acne usually affects the face, chest, back, upper arms, and neck region, having a higher distribution of pilosebaceous glands [6]. Both genders are affected by acne; however, a more severe form occurs in males relative to females, which is contributed by androgen activity [7]. Females have an earlier onset of acne than males relating to the earlier onset of puberty and tend to be more persistent in females till later ages [8]. Acne is a multifactorial skin disorder with key factors including follicular epidermal hyperproliferation, excess sebum production, inflammation, and activity of *Propionibacterium acne* (now referred to as *Cutibacterium acne*) [6, 9]. Another recent exciting factor is the 'host-microbiome' interaction contributing to the pathogenesis of acne vulgaris [9]. There is a notable increase in the incidence of acne vulgaris in recent times. The contributing factors of which may include personal hygiene, environmental factors, westernization of diet, and variation in lifestyle. On top of the discomfort due to symptoms experienced by patients, acne also has a psychological impact due to its complication like post-acne hyperpigmentation and scarring [10]. Although few studies had been carried out to describe the clinico-demographic profile of acne in different parts of India, data regarding its clinical pattern is lacking in the Northeastern region of the country. Our study aims at bridging this knowledge gap by evaluating the clinical pattern in patients with acne vulgaris attending a tertiary care hospital in Upper Assam. This will help in better understanding the magnitude of the problem as well as help in the decision-making by the clinician to prevent and control acne vulgaris.

MATERIALS AND METHODS

This is a hospital-based observational study conducted within the period from September 2021 to March 2022 at Jorhat Medical College and Hospital after obtaining approval from the Institutional Ethics Committee (IEC) filed under the No. SMEJ/JMCH/MEU/841/Pt-2011/3686(A). The inclusion criteria of the study were all consenting patients presenting with acne vulgaris in the dermatology outpatient department. The exclusion criteria of the study were the patients with drug-induced acne and other acneiform eruptions and pregnant and lactating women. The parameters included for assessment were age, gender, age of onset, duration of acne, site of lesions, grade of acne, and types of lesions, menstrual history, any post-acne hyperpigmentation, and scarring. The data were collected using a peer-reviewed pre-defined proforma using one-on-one interviews of the consenting participants. Data entry was done using MS excel software. Results were expressed in terms of percentage.

Acne vulgaris was classified into four grades using a simple grading system [11]:

Grade 1: Comedone, occasional papule,

Grade 2: Papules, comedones, few pustules,

Grade 3: Predominant pustules, nodules,

Grade 4: Cysts abscess and widespread scarring.

RESULTS AND DISCUSSION

Acne is one of the common disorders of the skin, virtually affecting every individual at least once in their lifetime [12]. A total of 203 cases presented with acne vulgaris were included in our study. Among these 61.6% were female and 38.4% were male shown in fig. 1. Female predominance of acne vulgaris relative to males was observed, similar to findings of other studies [13, 14]. The males to female ratio were 1:1.6.

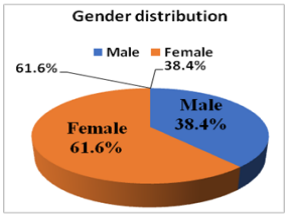

Fig. 1: Gender distribution of acne vulgaris

The majority of the patients were in the age group of 16-25 y. Among them, the commonest age group affected was 21-25 y (37.9%) followed by 16-20 y (31.5%) represented in table 1. These findings are similar to previous studies [15, 16]. The earlier onset of clinical acne in girls than boys is noted, presumably related to their earlier onset of puberty [8]. The mean age of the participants was 19.78 y, similar to another study [17]. It was observed that acne vulgaris persisted till later years among females as compared to males are shown in fig. 2. Findings are similar to the ones discussed in other studies [18, 19].

Table 1: Table shows age and sex distribution of acne

Age range (in years)	Male (n)	Female (n)	Total (%)
<10	0	0	0%
10–15	12	14	26 (12.8%)
16–20	30	34	64 (31.5 %)
21–25	29	48	77 (37.9%)
26–30	3	16	19 (9.4%)
>30	4	13	17 (8.4%)
Total	n=78	n=125	203 (100%)

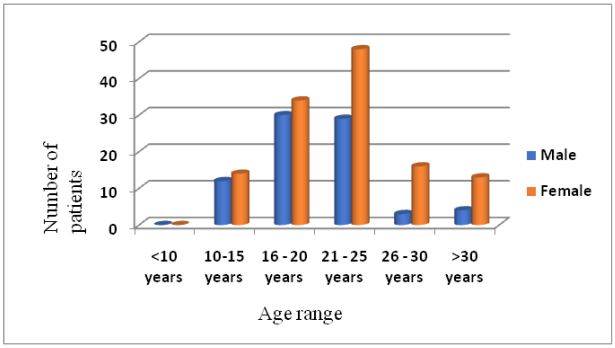

Fig. 2: Age-wise distribution of acne

In the present study, 97 (47.8%) patients had a duration of acne less than 1 y, 73 (35.9%) patients had a duration between 1-2 y, while only 14 (6.9%) had a duration between 3-4 y and 19 (9.4%) had more than 4 y duration of the lesion shown in table 2. These findings are in contrast to another study [18]. Persistent acne is a continuation or relapse of acne onto adulthood and middle age [18].

Table 2: Distribution of acne cases according to the duration of acne

Duration of acne (years)	No. of cases (n)	Percentage (%)
<1	97	47.8%
1–2	73	35.9%
3–4	14	6.9%
>4	19	9.4%
Total	n = 203	100%

Acne usually affects areas with a higher distribution of pilosebaceous glands [6]. The distribution of acne according to the site of involvement is shown in table 3. The face was the most common anatomical region affected by acne vulgaris in our study, similar to findings discussed in another study [17]. Acne over the face and neck are shown in fig. 3(a) and fig. 3(b).

Table 3: Distribution of acne according to an anatomical region

Anatomical region	Male (n)	Female (n)	Total (%)
Face	58	117	175 (86.2%)
Neck	1	3	4(1.9%)
Trunk	15	4	19 (9.4%)
Arms	4	1	5(2.5%)
Total	n = 78	n = 125	203 (100%)

Our study showed a majority of patients had Grade 2 as compared to the ones observed in previous studies [10, 18]. Less number of patients had Grade 4 acne vulgaris. Grades of acne severity are represented in table 4. Male predominance was seen in acne grade 3 and grade 4 in the present study related to the severity of acne represented in fig. 4. The severity of acne in males than females is due to androgen activity that acts as a potent stimulus to sebaceous secretion [8]. Acne is a pleomorphic disease [1]. The most common type of lesions was comedones (both closed and open) followed by papules and pustules, shown in fig. 5-7. These findings are similar to the ones discussed in other articles [15, 20].

Fig. 3(a): Facial acne

Fig. 3(b): Acne over neck region

Table 4: Grades of the severity of acne

Acne grades	Male (n)	Female (n)	Total (%)
1	8	34	42 (20.7%)
2	37	72	109 (53.7%)
3	26	18	44 (21.8%)
4	7	1	8 (3.9%)
Total	n = 78	n = 125	203 (100%)

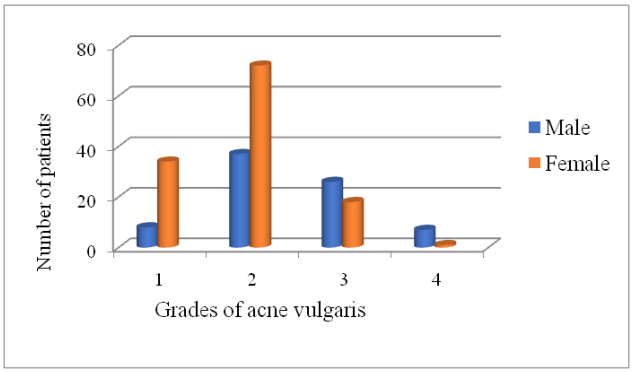

Fig. 4: Grades of acne severity

Fig. 5: Comedone in grade 1 acne

Fig. 7: Grade 3 acne

Fig. 6: Comedone and papule in grade 2 acne

Fig. 8: Post-acne hyperpigmentation

A usual and frequent complication of acne is post-acne hyperpigmentation [1]. Our study showed post-inflammatory hyperpigmentation in 98 (48.3%) patients, shown in fig. 8. Post-acne scarring is also well-recognized sequelae of acne vulgaris, however, actual extent and incidence of residual scars remains unknown [21]. In the present study, scarring was seen in 46 (22.7%) patients shown in fig. 9.

Fig. 9: Post-acne scarring

Premenstrual worsening of acne occurs in approximately 70% of female patients possibly related to hydration of the pilosebaceous unit or due to blockade of the sebaceous duct orifice [22]. Premenstrual flare was noted in 36 (17.7%) patients in the present study as compared to previous studies that showed a varying degree of pre-menstrual flare [13, 23, 24]. The commonly associated disease observed with acne was seborrheic dermatitis with 28 (13.8%) affected patients in our study as compared to a previous study [17].

The limitation of our study was that the clinical markers of androgenicity, if any, were not explored in detail. Our study attempted to bring out the clinical pattern of acne vulgaris patients in a tertiary care hospital in the Northeastern population which can help the clinicians to understand the extent of this skin disorder as well as help in better management of acne vulgaris patients.

CONCLUSION

This study of patients with acne vulgaris showed female predominance. Age group>20 y are more affected. The face was the common site of involvement, followed by the trunk and other sites. Acne severity of grade 2 was seen more frequently. The common associated feature observed was seborrheic dermatitis. Thus, this study revealed the clinical pattern of acne vulgaris in a tertiary care hospital in Assam. The prevalence of acne is much greater in the community than the prevalence seen in the present study, probably due to less seeking of health care services for the treatment of acne vulgaris by most adolescents and young adults.

ACKNOWLEDGEMENT

I would like to thank the whole Department of Pharmacology and Department of Dermatology, Venereology and Leprosy, Jorhat Medical College for their constant support during this entire research work.

FUNDING

Nil

AUTHORS CONTRIBUTIONS

The study protocol was designed by Prof (Dr.) Krishna Talukdar. Data collection, data analysis, and preparation of the manuscript were done by Dr. Juchitra Deuri. Editing of the overall research work was done by Dr. Geetamoni Dutta.

CONFLICTS OF INTERESTS

There are no conflicts of interest.

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