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Original Research Article

Clinical profile of acne vulgaris: an observational study from a tertiary care institution in Northern Kerala, India

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ABSTRACT

Background: Acne is one of the most common disease affecting adolescence. Although prior studies have evaluated epidemiologic patterns of acne in different ethnicities and regions, literature is lacking from this part of the country. The objectives of the study were to delineate the clinical and epidemiological profile of acne vulgaris in a population from northern Kerala in South India.
Methods: The study was carried out for 6 months and it included 100 patients. Epidemiology including pattern, aggravating factors, seasonal variation, diet, smoking, markers of androgenecity and associations were evaluated in all newly diagnosed cases of acne vulgaris who attended the outpatient department in Kannur Medical College, Kannur, Kerala, India from January 2018 to June 2018.
Results: Out of 100 patients females (74%) outnumbered males (26%) and although the majority affected belonged to the age group of 21-25 years (38%), adult acne was observed in 28%. Grade 3 acne was the commonest (44%), followed by grade 2 (30%) and grade 4 (18%). Face was affected in all patients with cheeks (91%), followed by forehead (72%), mandible (36%) and chin (28%) and trunk (23%). Scarring was found in 34% and pigmentation in 40%. Family history of acne was observed in 33%.
Conclusions: This study brings out the clinical profile of acne in a tertiary care hospital in South India.

Keywords: Acne vulgaris, Females, Adult acne, Seborrhoeic dermatitis

INTRODUCTION

Acne vulgaris is one of the most common skin diseases worldwide affecting all ethnicities and races.[1-3] Though highest prevalence is seen in adolescent age group, the burden of acne remains high in adults.[4] Clinical presentation includes non-inflammatory and/or inflammatory lesions extending over the face and/or trunk. Scarring and post inflammatory pigment changes contributes to significant physical and psychosocial impact. A 2001 study showed that though acne peaked during teenage years more than 25% women suffered acne after 21 years of age, with a peak of 45% in women with 21-30 years of age.[5,6] As there is paucity of literature from this part of the country on acne vulgaris author aimed to analyzing the difference in clinical and epidemiological data in different age groups with special reference to exacerbating factors.

METHODS

Patients attending outpatient Department Clinic of Dermatology Department of Kannur Medical College, Kannur, Kerala, India a tertiary care medical teaching institute in Kerala state South India for a period of 6 months from January 2018 to June 2018 were selected for the study. All patients with acne vulgaris attending outpatient department who consented to participate in the

study were included and those not willing to participate in the study and patients with drug-induced and other acneiform eruptions were excluded. The parameters evaluated include age, gender, age of onset, duration of lesions, site of lesions, grade, relation to menstrual cycle, markers of androgenicity, family history and type of lesions such as comedones, papules, pustules, nodules, post acne scarring and hyperpigmentation.

A simple grading system was used to grade acne.

- Grade 1-comedones, occasional papules,
- Grade 2-papules, comedones, few pustules,
- Grade 3-predominant pustules, nodules, abscess,
- Grade 4-mainly cysts, abscess, widespread scarring.

Aggravating factors including premenstrual flare, cosmetics, seasonal variation, smoking, stress and associations such as seborrhea and seborrhoeic dermatitis were also noted. The data was analysed using simple statistical methods.

RESULTS

Out of the 100 patients included in the study 74% were women and 26% were men. The age of patients varied from 11-45 years with a mean age of 23.09 years. The most common age group involved was 21-25 years (38%), followed by 16-20 years (32%). Adult acne was found in 28% in this study were females (92.8%) outnumbered males. The mean age of onset was 18.54 years in males and 21.20 years in females (Table 1).

Table 1: Age and sex distribution.

Age group (years)	Males	Females	Total (%)
10-15	1	2	3
16-20	13	19	32
21-25	10	28	38
26-30	1	18	19
>30	1	7	8
Total	26	74	100

Face was affected in all patients with cheeks 91%, forehead 72%, mandible 36% and chin 28%. Truncal involvement was less with chest 10%, back 13%, shoulder 8% and upper arm 3% (Table 2).

About 44% had grade 3, 30% had grade 2 and 18% had grade 4 acne and 8% had grade 1 acne. grade 3 and 4 acne predominated in females (46%) than males (16%) (Table 3).

Scarring was found in 34% and icepick scars were the commonest noted (Table 4) (Figure 1). Post acne hyperpigmentation was noted in 46%. Premenstrual flare was seen in 44%, summer exacerbation was seen in 14%, family history of acne was noted in 33%. 97% of the cases were non vegetarians. Exacerbation with cosmetics were noted in 26%, stress exacerbation was noted in 10%. Markers of hyperandrogenecity such as irregular menses (5%), hirsuitism (7%), and alopecia (1%) were noted in female patients. Seborrhoea was noted in 32% and seborrhoeic dermatitis in 54%. None out of the 100 reported smoking habit.

Table 2: Site of involvement.

Site	Males	Females	Total (%)
Forehead	23	49	72
Cheeks	22	69	91
Mandible	7	29	36
Chin	0	28	28
Chest	4	6	10
Back	7	6	13
Shoulder	4	4	8
Upper arm	0	3	3

Table 3: Grade of acne.

Grade	Males	Females	Total (%)
1	6	4	10
2	10	20	30
3	13	33	64
4	5	13	18

Table 4: Type of acne scars.

Type of scar	No. of patients
Ice pick	12
Distensible retraction	8
Non-distensible crater like	3
Non-distensible superficial	8
Hypertrophic	2
Keloid	1

Figure 1: Icepick scars.

DISCUSSION

Acne vulgaris is a chronic disease affecting the pilo-sebaceous glands. Though a disease predominating in adolescence data indicates that the age distribution of acne is widening and this is happening in both sexes but more prominently in woman over the age of forty years.[7] A previous study in South Indian population showed a male preponderance, this study reported a female preponderance.[8] The mean age was 23.09 years and the mean age of onset was 18.54 years in males and 21.20 in females. The age of onset in males was almost similar with some studies while the age of onset in females differed in this study with a slight late onset.[8,9]

In this study, the adult acne cases were reported predominantly (28%). This stands against the previous study from South India which reported only 9.3% adult acne (age >25 years).[8] Again, the most common age group involved in this study was 21-25 years (38%) while it was 16-20 years (59.8%) in the same study.[8]

Present study showed involvement of face in 100% cases. Other sites included chest (10%), back (13%), shoulder (8%), upper arm (3%). These findings agree with the earlier reported literature.[8,10-12]

Present study graded the lesions using a simple 4 graded system.[13] Authors got predominantly grade 2 (30%) and grade 3 (44%) lesions in these subjects. Grade 1 (8%) and grade 4 (18%) were reported less. This finding is a diversion from the previous studies, and it points to the possibility of a greater inflammatory nature of acne vulgaris in this part of the country.[8,14,15] Also, severe grades of acne were more in females, 46% compared to 16% in males. Scarring was noted in 34% of the cases (Figure 3). This is almost similar to the results of previous studies.[8,16] 50% of male cohort were affected by scarring. Authors found that all cases with scarring had more than 1-year duration of acne. Present study showed that longer the duration of acne greater the scarring.[8,17,18] Authors got icepick scars as the commonest post acne scar lesions, a finding similar to previous studies.[8,18] Adityan et al, reported a low incidence of hyperpigmentation in South Indian population.[8] But Kane A et al, Yeung CK et al, and Taylor et al, reported 67.7%, 52.6% and 52.6% incidence of hyperpigmentation in their studies respectively.[16,19,20] Present study finding showed 46% incidence of post acne hyperpigmentation. The increased incidence of hyperpigmentation may be due to the predominance of inflammatory lesions (Figure 2).

Premenstrual flare is another characteristic of acne. Present study found 44% cases with premenstrual flare, similar to the results reported by Stoll et al.[21]

In this study, clinical features suggestive of hyperandrogenism such as hirsuitism (7%), menstrual disturbances (5%) and alopecia (1%) were present. In a similar study in South Indian population the incidence of hirsuitism and menstrual disturbances were reportedly 9.48% and 10.2% respectively.[8] Khunger et al, in their study of adult acne also found similar findings as this study.[22] Authors could not find any association between severity of acne vulgaris and clinical markers of androgenicity.

Studies have shown that adolescent and adult acne occurred at a higher rate in first and second degree relatives of acne patients than in relatives of people without acne.[22-24] Present study also suggest the role of genetic factors in the etiology of acne with 33% of patients having acne in their first degree relatives.

In this study, 10% patients reported stress as an aggravating factor of acne. Chronic stress has been suggested as a cause of increased androgen secretion and acne in various studies.[22,25]

An important etiology in mild to moderate acne in females has been the use of cosmetics.[22,26] In this study, 26% of patients reported an aggravation of acne with cosmetic use.

Conventionally, acne is proposed to have an exacerbation in winter and improvement in summer. A study from our part of the world suggested seasonal variation in 25.9% cases with summer exacerbation noticed in 23% and winter exacerbation in 2.9 %.[8] Sardana et al, reported exacerbation of acne in summer season.[27] Present study supports similar finding with summer exacerbation in 20% and sweating exacerbation in 14% in contrary to the popular notion of summer improvement and winter exacerbation.

Seborrhoea plays a central role in acne and seborrheic dermatitis. Both diseases affect the seborrheic areas of the body.[28] In this study, seborrheic dermatitis was associated with 54% of the patients. Authors reported a much stronger association between the two when compared to other reported studies.[8,29]

Figure 2: Inflammatory lesions.

Figure 3: Hypertrophic and atrophic scars.

CONCLUSION

To conclude, present study included 100 patients with acne vulgaris that showed a female preponderance and the majority of the age group 21-25 years. The study also enlightened the increased incidence of adult acne cases. Face was involved in all cases with the cheek area being the most involved site.

Grades 2 and 3 were the most common types and females outnumbered males with these grades. Scarring proportionated the duration of acne with icepick scars being the commonest. Post acne hyperpigmentation was observed in most cases which corresponded to the inflammatory nature of lesions. The strongest association noted in our study was with seborrhoeic dermatitis and others being premenstrual flare up, hyperandrogenism, cosmetic usage along with a strong genetic predisposition.

This study brings light on the clinical profile of acne vulgaris in a tertiary hospital in South India. As this was a hospital-based study, future studies are warranted with more number of patients and also population based studies for bringing out the true nature and definition of acne vulgaris in our community.

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