Content available at: iponlinejournal.com

IP Indian Journal of Clinical and Experimental Dermatology

Journal homepage: www.innovativepublication.com

Original Research Article

A study of clinical pattern of acne vulgaris – In a tertiary care hospital in India

V.Shanmuga Sundaram[1], P Gunalan[1,*], S.Steffi Elizabeth[1]

[1] *Dept. of Dermatology, Karpagam Faculty of Medical Science and Research, Coimbatore, Tamil Nadu, India*

ARTICLE INFO

Article history:
Received 19-02-2020
Accepted 26-02-2020
Available online 21-04-2020

Keywords:
Pilosebaceous units
Androgenicity
Comedones
Post inflammatory hyperpigmentation

ABSTRACT

Background: Acne vulgaris is a chronic inflammatory disease of the pilosebaceous units. Sebaceous gland is an important epidermal appendage involved in its pathogenesis. It is one of the most common skin condition of adolescents and adults. In this disease it develops multiple lesions like comedones, papules, nodules, cysts and scars. Factors like androgenetic hormones, amount of sebum secretion, follicular microbial flora, and fat rich diets are responsible for its cause. With this background we conducted this study of clinical pattern of acne vulgaris in a tertiary care hospital in India.
Aim of the study: To study about the clinical pattern of acne vulgaris in patients attending dermatology OPD in a tertiary care hospital in India.
Materials and Methods: A total of 200 consecutive patients attending the dermatology OPD with clinical features of Acne vulgaris was included in the study. Pregnant women and patients with drug induced acne vulgaris were excluded from the study. This hospital based observational study was carried out from November 2019 to January 2020. The datas were collected in a predesigned proforma which includes age, gender, marital status, age of onset, duration, body sites involved, number and severity of acne lesions, menstrual history, features of androgenicity, post inflammatory hyperpigmentation and scarring of skin.
Results and Conclusion: A total of 200 Acne vulgaris patients were studied with 59% males and 41% females. Age group wise, patients above 18 years (51%) followed by 14 to 18 years (38%) were affected. The common body sites involvement were face (45%), trunk (18%) and neck (13%) are mainly involved. Acne grading shows, grade 3(53%), grade 2(21%) were involved. Males with androgenetic features were 20 patients (38%) and females were 33 patients (62%). Total number of patients having androgenetic features were 53(26.5%).

1. Introduction

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous units. Acne vulgaris is the most common skin condition seen in adults and adolescents, mostly affecting face, midchest, back, shoulders and upper arms of the body. This disease involves development of multiple lesions like comedones, papules, nodules, cysts and scars. Acne vulgaris occurs in all races worldwide, affecting about 90% of people in their lifetime.[1] The Japanese people are affected less than Americans[2] and cystic acne is more common in whites.[3] The age of onset is at puberty or a few months before puberty. The peak incidence is between 14 to 17 years in women and 16 to 19 years in men. Acne is more common and more severe in males than in females, relating it to androgen activity. Patients with genotypes XYY were more severely affected as shown in one study.[4] Neonatal lesions related to circulating maternal hormones are also known.[5] Acne was found to be more common in urban boys than in their rural counterparts.[6] *Ge*netic factors influence the susceptibility to acne.[7]

2. Materials and Methods

The present study is a hospital based observational study carried out from November 2019 to January 2020 in a

* *Corresponding author*.
E-mail address: drgunalan86@gmail.com (P. Gunalan).

https://doi.org/10.18231/j.ijced.2020.004

tertiary care hospital after obtaining institutional ethical committee clearance. A total of 200 consenting patients attending the Dermatology OPD with clinical features of Acne vulgaris was included in the study. Pregnant women and Patients with drug induced acne vulgaris were excluded from the study (ex: Corticosteroids, Isoniazid, phenytoin, lithium carbonate, cyclosporine, disulfiram). Since this study is clinical observational study no laboratory investigations were carried out. The following datas were collected in a predesigned proforma after getting consent from the patient which included age, gender, marital status, age of onset, duration, body sites involved, number and severity of acne lesions, menstrual history, features of androgenicity, post inflammatory hyperpigmentation and scarring.

Acne vulgaris were graded into 4 grades based on a grading system as follows:

GRADE 1 - comedones, occasional papules
GRADE 2 - papules, comedones, pustules
GRADE 3 - predominant pustules, nodules
GRADE 4 - mainly cysts, abscess, scarring

2.1. Inclusion criteria

Total of 200 consenting patients attending the Dermatology OPD with clinical features of Acne vulgaris was included in the study.

2.2. Exclusion criteria

1. Pregnant women,
2. Patients with drug induced acne vulgaris was excluded from the study (ex: Corticosteroids, Isoniazid, phenytoin, lithium carbonate, cyclosporine, disulfiram,) etc.

3. Observations and Results

The following observations were obtained in the study and the results were analysed.

Table 1: Age and sex distribution

Age	Males n (%)	Females n (%)	Total n (%)
9 – 12 Years	2(1.7%)	2(2.4%)	4(2%)
12 – 14 Years	8(6.8%)	10(12.2%)	18(9%)
14 – 18 years	32(27.1%)	44(53.65%)	76(38%)
18 years and above	76(64.40%)	26(31.70%)	102(51%)
Total (200)	118(59%)	82(41%)	200(100%)

A total of 200 patients with clinical features of Acne vulgaris were studied out of which 59% patients were males (n=118) and 41% patients were females (n=82). Thus the male to female ratio is approximately 3:2.

According to age distribution majority of patients affected were above 18 years and they constituted 51% of study group. The second most common age group is between 14 and 18 years which constitutes 38% of the study population. The least affected age group is between 9 to 12 years which constituted only 2% in our study group.

Table 2: Involvement of anatomical region

Body site	Males (n)	Females (n)	Total n (%)
Face	48	42	90(45%)
Neck	12	14	26(13%)
Trunk	22	14	36(18%)
Chest	18	6	24(12%)
Arms	14	10	24(12%)

According to anatomical regional distribution, face is the commonly affected site with 45% involvement followed by trunk 18%. The arm and chest are equally involved with 12% of patients showing skin involvement.

Table 3: Grades of severity

Grade	Males n	Females n	Total n (%)
1	22	16	38(19%)
2	24	18	42(21%)
3	68	38	106(53%)
4	6	8	14(7%)

Among grades of severity, 106 patients (53%) are affected in grade 3 followed by grade 2 (21%), grade 1 (19%), and grade 4 (7%).

Table 4: Androgenetic features

Androgenetic features	Males n	Females n	Total n (%)
Alopecia	12	16	28(14%)
Obesity	8	2	10(5%)
Hirsutism	0	8	8(4%)
Pcod	0	4	4(2%)
Amenorrhea	0	2	2(1%)
Infertility	0	1	1(0.5%)

In this study androgenetic features like alopecia (14%) was noticed followed by obesity (5%), hirsutism (4%), PCOD (2%), amenorrhea (1%) and Infertility (0.5%).

4. Discussion

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous units. It is the most common skin condition seen in adults and adolescents. Acne vulgaris occurs in all races worldwide, affecting about 90% of people in their lifetime.[1] The disease is occurring in both the sexes but seen more widely in females over 40 years according to one study.[8] However this study showed male predominance (59%) [Table 1] as in case of another study done in south Indian population.[9] Also this study shows more number of females affected in the pubertal age group and less number of females affected after 18 years.[Table 1] This

is in contrast to males, where less number was affected in pubertal age and more numbers affected among greater than 18 years. In this study adult acne case were (51%) [Table 1] whereas in another study conducted in south India where only 9.3% adult acne cases were reported.[9] The common age group involving both males and females affected in this study were 18 years and above (51%) [Table 1] where as it was 16 to 20 years [60%] in the other study.[9] In our study, involvement of anatomical region shows majorly face involvement (45%) followed by trunk involvement (18%), neck involvement (13%), chest and arms (12%) [Table 2]. These findings were similar to the earlier study.[9–12][10 to 12] Our study shows majority of patients with grade 3 acne (53%) followed by grade 2 (21%) [Table 3]. These findings were in contrast to the study done by Hazarika N and Rajaprabha R K.[13] and also study done by Durai and Nair which showed maximum patients with grade 1 acne[14]In this study androgenetic features like alopecia (14%) followed by obesity (5%) and hirsutism (4%), PCOD (2%), amenorrhea (1%) and Infertility (0.5%) was observed. [Table 4]. This is in contrast to another study done in South Indian population where the incidence of hirsuitism and menstrual disturbances were reportedly 9.48% and 10.2% respectively.[9] Khunger et al, in their study of adult acne also found similar findings as the other study.[15] Thus among these studies there is no association between severity of acne and features of androgenicity.

5. Conclusion

This study of Acne vulgaris patients shows that males were affected more than females. People of age above 18years were affected more than below 18 years. Face, trunk, neck were affected more commonly followed by other sites. Acne vulgaris Grade 3 and grade 2 were more frequently seen. Among androgenetic features females were affected more than males and Alopecia is a common presenting feature. Thus from this study we have found males above 20 years were more affected than females relating to their androgen activity and this helps in providing greater understanding of Acne vulgaris.

6. Source of funding

None.

7. Conflict of interest

None.

References

1. Burton JL, Cunliffe WJ, Stafford I. The prevalence of acne vulgaris in adolescence. *Br J Dermatol*. 1971;85(2):119–126.
2. Hamilton JB, Terada H, Mestler GE. Greater Tendency to Acne in White American than in Japanese Populations1. *J Clin Endocrinol Metab*. 1964;24:267–272.
3. Wilkins JW. Prevalence of nodulocystic acne in white and Negro males. *Arch Dermatol*. 1970;102(6):631–634.
4. Voorhees JJ, Wilkin JW, Hayes E. Nodulocystic acne as a phenotypic feature of XYY genotype. Report of five cases. *Br J Dermatol*. 1972;105:913–919.
5. Hurwitz S. Acne vulgaris. Current concepts of pathogenesis and treatment. *Am J Dis Child*. 1979;133:536–544.
6. Pandey SS, Kaur P, Singh G. Has acne urban bias? *Indian J Dermatol Venereol Leprol*. 1980;46:80–82.
7. Walton S, Wyatt E, Cunliffe WJ. Genetic control of sebum excretion and acne—a twin study. *Br J Dermatol*. 1988;118:393–396.
8. Lucky AW, Biro FM, Simbartl LA. Predictors of severity of acne vulgaris in young adolescent girls: Results of a five-year longitudinal study. *J Pediatr*. 1997;130(1):30–39.
9. Thappa DM, Adityan B. Profile of acne vulgaris-A hospital-based study from South India. *Indian J Dermatol, Venereol Leprol*. 2009;75(3):272–278.
10. Simpson NB, Cunliffe WJ. Disorders of sebaceous glands. In: T B, S B, N C, C G, editors. Rookís Textbook of Dermatol. vol. 43. Blackwell Publishing; 2004. p. 1–43.
11. Zaenglein AL, Graber EM, Thiboutot DM, Strauss JS. Acne vulgaris and acneiform eruptions. In: AS P, DJ L, editors. Fitzpatrickís Dermatol General Med. vol. 16. McGraw Hill Publishing; 2008. p. 690–703.
12. Amado JM, Matos ME, Abreu AM, Loureiro L, Oliveira J, et al. The prevalence of acne in the north of Portugal. *J Eur Acad Dermatol Venereol*. 2006;20(10):1287–1295.
13. Hazarika N, Rajaprabha R. Assessment of life quality index among patients with acne vulgaris in a suburban population. *Indian J Dermatol*. 2016;61(2):163–168.
14. Salek MS, Khan GK, Finlay AY. Questionnaire techniques in assessing acne handicap: Reliability and validity study. *Quality Life Res*. 1996;5(1):131–138.
15. Khunger N, Kumar C. A clinico-epidemiological study of adult acne: Is it different from adolescent acne? *Indian J Dermatol, Venereol, Leprol*. 2012;78(3):335–341.

Author biography

V.Shanmuga Sundaram Associate Professor

P Gunalan Senior Resident

S.Steffi Elizabeth Senior Resident

Cite this article: Sundaram VS, Gunalan P, Elizabeth SS. **A study of clinical pattern of acne vulgaris – In a tertiary care hospital in India**. *IP Indian J Clin Exp Dermatol* 2020;6(1):15-17.