

# Prevalence of Acne Vulgaris in Population of Rural Area in Western Rajasthan.

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## ABSTRACT

**Background:** The incidence of acne is different from various countries and ethnic groups. It commonly affects adolescents and young adults and is characterized by open and closed comedones, erythematous papules and pustules, and in severe cases nodules, deep pustules, and pseudocysts. Aim of the study: To assess the prevalence of acne vulgaris in population of rural areas of western Rajasthan. **Methods:** The study was conducted in the department of dermatology of the Bangur District Hospital, Pali, Rajasthan. For the selection of the study population we selected randomly 100 individuals from the rural area of Western Rajasthan. The subjects were examined for the presence of acne, site and severity, and lesions present were graded as mild, moderate, and severe according to the classification of the American Academy of Dermatology. **Results:** A total of 100 patients participated in the study. In the study group, acne was present in 38 subjects (38%) and was not present in 62 subjects (62%). We observed that the prevalence of acne in males was 41 % whereas acne in females was 33.33%. **Conclusion:** The prevalence of rural area of western Rajasthan is 38%. The acne is more prevalent in males as compared to females.

**Keywords:** Acne, rural, Rajasthan.

## INTRODUCTION

Acne, a very common skin disease among adolescents, is the fourth most common reason for patients aged 11–21 years to visit a doctor in the India. Acne is estimated to affect 9.4% of the world's population with the highest prevalence in adolescents.<sup>[1,2]</sup> Acne vulgaris-associated disease burden exhibits global distribution and has continued to grow in prevalence over time within this population. In addition, a group of increasing epidemiological data suggests that acne also affects a considerable number of adults, and women are more frequently affected by adult acne than men. The incidence of acne is different from various countries and ethnic groups.<sup>[3,4]</sup> It commonly affects adolescents and young adults and is characterized by open and closed comedones, erythematous papules and pustules, and in severe cases nodules, deep pustules, and pseudocysts. Data from population-based epidemiologic studies of acne are important in quantifying social burden, distribution of the disease in the community and its social and psychological impact, particularly in adolescent age group.<sup>[5,6]</sup> Hence, we planned the study to assess the prevalence of acne vulgaris in population of rural areas of western Rajasthan.

## MATERIALS AND METHODS

The study was conducted in the department of Dermatology of the Bangur District Hospital, Pali, Rajasthan. The ethical clearance for the study was obtained from the ethical board of the institute prior to commencement of the study. For the selection of the study population we selected randomly 100 individuals from the rural area of Western Rajasthan. An informed written consent was obtained from each subject. The diagnosis of acne was clinical, and no laboratory investigation was performed to corroborate the diagnosis. The subjects were examined for the presence of acne, site and severity, and lesions present were graded as mild, moderate, and severe according to the classification of the American Academy of Dermatology.

1. Mild acne: Characterized by the presence of a few papules and pustules mixed with comedones, but no nodules
2. Moderate acne: Characterized by the presence of many papules and pustules, together with a few nodules
3. Severe acne: Characterized by the presence of numerous or extensive papules and pustules as well as many nodules.

The demographic data of the patients including age, sex, onset date of acne etc. were noted. A detailed history of the patients regarding acne such as history of onset of acne, duration of acne, severity of pain, pus drainage positive or negative etc. were taken

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from each patient. The data was tabulated and subjected to statistically analysis.

The statistical analysis of the data was done using SPSS version 20.0 for windows. The Student's t-test and Chi-square test were used to check the significance of the data. The p-value less than 0.05 was predetermined as statistically significant.

## RESULTS

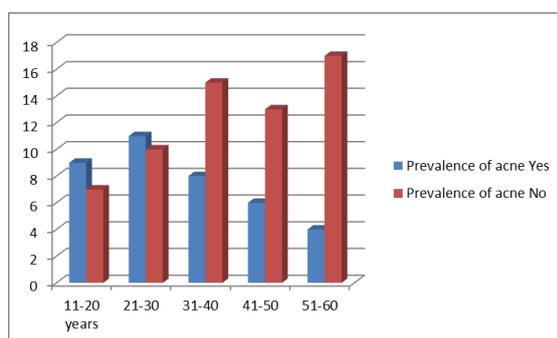
[Table 1] shows the prevalence of acne in the study group based on age groups. A total of 100 patients participated in the study. Number of patients in age group 11-20 years was 16, in age group 21-30 was 21, in age group 31-40 was 23, in age group 41-50 is 19, in age group 51-60 was 21. In the study group, acne was present in 38 subjects (38%) and was not present in 62 subjects (62%). [Table 2] shows the prevalence of acne in the study group on the basis of sex of subjects. We observed that the prevalence of acne in males was 41 % whereas acne in females was 33.33% [Figure 1].

**Table 1: prevalence of acne in the study group based on age groups.**

Age groups (years)	Prevalence of acne		Total
	Yes	No	
11-20	9	7	16
21-30	11	10	21
31-40	8	15	23
41-50	6	13	19
51-60	4	17	21
Total	38	62	100

**Table 2: prevalence of acne in the study group on the basis of sex of subjects**

Sex	Prevalence of acne		Total
	Yes	No	
Male	25	36	61
Female	13	26	39



**Figure 1: Prevalence of acne in the study group on the basis of sex of subjects.**

## DISCUSSION

In the present study we evaluated the prevalence of acne in rural area of western Rajasthan. We observed that the prevalence of acne was 38% in the study population. The prevalence of acne in males was 41% whereas in females was 33.33%. on

comparison we found that the results were statistically non-significant. The results were compared with previous studies and results were consistent with previous studies. Li D et al estimated the prevalence of acne in Mainland China comprehensively and quantified its association with gender, region and age. They searched electronic databases with predetermined search terms to identify relevant studies published between 1 January 1996 and 30 September 2016. We pointed out repeated results using Note Express software and evaluated the studies for inclusion. Two independent reviewers extracted the data, followed with statistical analyses using Comprehensive Meta-Analysis software version 2.0. A random effects model was adopted to calculate the overall pooled prevalence and to merge categories, including gender (males and females), region (Northern China and Southern China) and age (primary and secondary students: 7–17 years old; undergraduates: 18–23 years old; overall: no limits of age) for subgroup analyses. 25 relevant studies were included in this meta-analysis. The overall pooled prevalence rates of acne were 39.2%. The prevalence rates in different age groups were 10.2% overall, 50.2% for primary and secondary students, and 44.5% for undergraduates; by gender, the prevalence rates were 35.7% for females and 39.7% for males; and by region, the prevalence rates were 34.2% for Northern China and 46.3% for Southern China. The associations between acne and the predictors age, gender and region were statistically significant. They concluded that in Mainland China, primary and secondary students exhibited higher prevalence rates than undergraduate students; males had higher prevalence rates of acne than females; and the prevalence rates of acne in Southern China was higher than Northern China. Lynn DD assessed the global burden of the disease associated with acne vulgaris for late adolescents (15–19-year olds) and provided an overview of the epidemiology, pathophysiology, and treatment options for acne in this population. Geographic region-level disability-adjusted life year rates (per 100,000 persons) associated with acne vulgaris in years 1990 through 2010. Median percentage change in disability-adjusted life year rates was estimated for each region across the specified study period. They concluded that acne vulgaris-associated disease burden exhibits global distribution and has continued to grow in prevalence over time within this population. This continued growth suggests an unmet dermatologic need worldwide for this disorder and potential opportunities for improved access and delivery of dermatologic care. Our analysis of the literature revealed numerous opportunities for enhanced patient care.<sup>[7,8]</sup>

Wu TQ et al assessed the prevalence and risk factors of acne vulgaris among Chinese adolescents. In the Zhou Hai district of Guangdong Province, 3163 students 10 to 18 years old were selected from 7

schools. Information was collected using self-administrated questionnaires and physician examinations. The prevalence of acne vulgaris was calculated from the collected data. Potential risk factors including age, gender, diet, skin type, sleeping habits, and facial make-up use were analyzed using stepwise logistic regression. The results showed a prevalence of acne vulgaris of 53.5% in all adolescents, with 51.3% in males and 58.6% in females. The prevalence of inflammatory acne in males and females combined was 25.8% and of acne scarring 7.1%. Increased age was related to higher prevalence and severity of acne vulgaris: 15.6%, 44.9%, and 70.4% for 10, 13, and 16 year olds, respectively. Acne vulgaris was more prevalent in girls under and boys over 14 years of age. Significant risk factors of acne vulgaris included age, skin type (oily, mixed, or neutral skin in comparison with dry skin), insufficient sleep, and cosmetic make-up use. They concluded that acne vulgaris is prevalent among Chinese adolescents 10 to 18 years old. Health education to address this condition in Chinese adolescents could have important implications for public health. Ismail KH et al conducted a study between July 1st, 2011 and November 1st, 2011. A convenience sample of 510 patients attending private clinic in Erbil city was taken. Verbal informed consent was obtained from all participants. The Cardiff acne disability index (CADI) was used in this study. The sample included 510 patients (173 males and 337 females); their mean  $\pm$  SD age was  $20.08 \pm 4.23$  years (ranged from 11 to 36 years) with a male: female ratio of 0.41:1. The mean  $\pm$  SD ages of males and females were  $18.62 \pm 3.19$  and  $20.83 \pm 4.49$  years, respectively. Results revealed that there is significant association between age and quality of life impairment, and it revealed that quality of life was more impaired (47.2%) among female than that (37.6%) among male patients. There was significant association between grading of acne and QOL impairment. They concluded that acne negatively affects quality of life, females were more affected than the males, age group 21–25 more than the other age groups and the greater the grade "severity" of acne, the greater the level of impairment of quality of life.<sup>[9,10]</sup>

## CONCLUSION

Within the limitations of the study we conclude that the prevalence of rural area of western Rajasthan is 38%. The acne is more prevalent in males as compared to females.

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