

Original Research Article

STUDY ON CLINICO-EPIDEMIOLOGICAL AND INVESTIGATIVE STUDY OF POST ADOLESCENT ACNE IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: Skin conditions are a major cause of morbidity in outpatient wards, especially in developing countries. It was the 18th most common cause of morbidity and the fourth most common cause of nonfatal diseases globally in 2010. Acne, one of the most common dermatological disorders, irritates or obstructs the sebaceous glands.

Materials and Methods: A thorough history and clinical examination were performed on 138 acne patients over the age of 21 who were recruited for the study. All of the patients had their hormonal profiles completed. Inferences were made after a statistical analysis of the data.

Results: Acne lasted anywhere from two weeks at the very least to twenty years. Persistent acne, which has been present throughout adolescence, was present in 86 (62.1%) of the patients. 52 individuals (37.7%) had late-onset acne, which developed beyond adolescence. Twelve (8.7%) of the patients had a family history of acne in a first-degree relative. Acne of grade II 78 (55.7%) affected the majority of patients, followed by grade III 33 (23.9%), grade IV 20 (14.5%), and grade I 07 (5.07%). the comparison of late-onset and persistent acne grading.

Conclusion: The study found important trends and contributing variables to post-adolescent acne, offering insightful information for specialized treatment plans.

Keywords: Dermatological disorder, Hyperandrogenism, adult acne and acne.

INTRODUCTION

One of the main sources of morbidity in outpatient wards is skin diseases, particularly in underdeveloped nations. In 2010, it was ranked as the fourth leading cause of nonfatal diseases and the 18th leading cause of morbidity worldwide.^[1] One of the most prevalent dermatological conditions, acne, causes irritation or obstruction of the pilo sebaceous glands.^[2] Seborrhea, open and closed comedones, papules, pustules, and in more severe cases, nodules and pseudocysts, are the hallmarks of acne, a chronic inflammatory condition of the pilosebaceous units. Numerous mechanisms, including increased sebum production, follicular hyperkeratinization, propionibacterium acne proliferation within the follicle, androgen activity, inflammation, and immunological host reactivity, are implicated in the etiology.^[3] The prevalence of

adult acne is rising, despite the fact that acne is generally thought of as an adolescent illness. The standard definition of adult acne is acne that appears beyond the age of 21.^[4] Adult acne comes in two varieties: late-onset acne and chronic acne. Teenage acne that lasts past the age of 21 is referred to as persistent adult acne, while acne that appears for the first time after the age of 21 is referred to as late-onset adult acne. Although adolescent acne is the subject of most research, little is known about the prevalence and clinical characteristics of post-adolescent acne. For patients with post-adolescent acne to be properly evaluated and managed, it is essential to comprehend the traits and contributing factors of adult acne. In order to identify potential etiological factors and draw attention to potential distinctions from adolescent acne, the study's goals were to investigate the prevalence, clinical

characteristics, contributing etiological factors, and aggravating factors of acne in adults.

MATERIALS AND METHODS

The present study was conducted in the department of dermatology, ESIC Medical College and Hospital, Pandeypur, Varanasi. Since it was an observational study, ethical approval was not acquired. After gaining informed consent, study participants who were over 21 and presented with acne vulgaris to the dermatology outpatient department were added. A pre-made proforma was used to record the clinical characteristics and epidemiological data. Regarding the beginning, length, scope, and location of involvement, a thorough medical history was obtained. Additionally, a history of aggravating factors was recorded, including stress, drug use, sun exposure, seasonal variations, cosmetic application, premenstrual flare-ups, and the impact of pregnancy on acne. Seborrhea, hirsutism, and irregular menstruation were reported in the history. Each patient's clinical evaluation comprised the kind, distribution, severity, and grading of acne lesions. Four grades of acne vulgaris were created using a straightforward system that took into consideration the most common lesions found. Grade I consisted of comedones and sporadic papules, Grade II of papules and comedones with few pustules, Grade III of predominant pustules, nodules, and abscesses, and Grade IV of mostly cysts, abscesses, and extensive scarring.[5] Seborrhea, hyperandrogenism (hirsutism, alopecia), and related symptoms such as obesity and acanthosis nigricans that point to a hormonal imbalance were observed, and where necessary, tests for insulin resistance and polycystic ovarian disease were conducted. Prolactin, testosterone, dehydroepi-androstenedione, follicle-stimulating hormone, and serum luteinizing hormone were among the pertinent tests conducted. Clinical examination was used to rule out rosacea and other disorders that caused papules and pustules on the face besides acne. The patient's responses to a questionnaire were used to assess stress. The patient produced a subjective assessment of its correlation with acne flare-ups. There was evidence of acanthosis nigricans. The statistical package for the social sciences (SPSS-20) software was used to examine all of the correctly coded and input data in Microsoft Excel. The proper significance tests were used.

RESULTS

The study involved 138 patients in total. 81.9% of the patients were female. The patients ranged in age from 21 to 55, with a mean age of 36.4±10.2. The majority of patients were between the ages of 21 and 30. [Figure 1] summarizes the age distribution of the study population. Acne lasted anywhere from two

weeks at the very least to twenty years. Persistent acne, which has been present throughout adolescence, was present in 86 (62.1%) of the patients. 52 individuals (37.7%) had late-onset acne, which developed beyond adolescence. Twelve (8.7%) of the patients had a family history of acne in a first-degree relative.

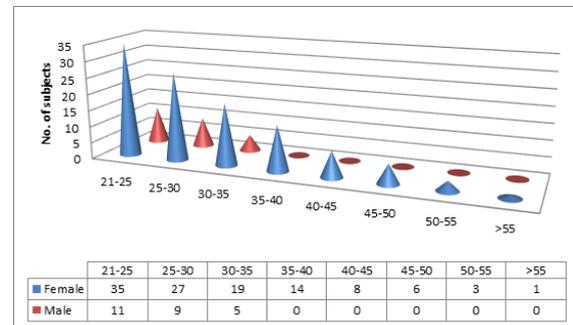


Figure 1: Shown the age distribution of the subject's a/c to gender.

Most patients (122, or 88.4%) had facial involvement, however 6 patients (4.3%) exclusively had truncal involvement. The most often implicated place on the face was the cheek (106, or 76.8%), which was followed by the chin (85, or 61.6%), mandibular area (45, or 32.6%), forehead (37, or 26.8%), and nose (18, or 13.04%). The chin, jawline, and neck were the primary areas of distribution for patients with late-onset acne.

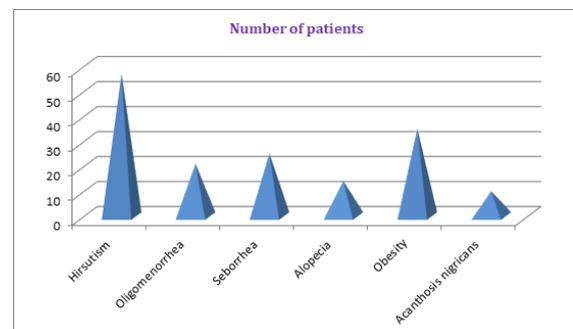


Figure 2: Shows the clinical features of hormonal imbalance/ hyperandrogenism.

Acne of grade II 78 (55.7%) affected the majority of patients, followed by grade III 33 (23.9%), grade IV 20 (14.5%), and grade I 07 (5.07%). the comparison of late-onset and persistent acne grading. Five individuals experienced acne after taking drugs (two taking B-complex supplements, one taking ayurvedic treatment, and one taking antipsychotic medication). 36 individuals (26.08%) showed seasonal fluctuation, with the majority having exacerbations in the summer. Of the female patients, 42 (30.43%) experienced a premenstrual flare. Stress-related agitation was observed in 17 individuals (12.31%). However, only 4 out of 113 female patients (3.5%) had elevated testosterone levels, which is laboratory evidence of hyperandrogenism. No patient had abnormal serum

DHEAS or PRL levels. One patient's serum LH was determined to be elevated. One patient's serum FSH was lower, and three patients' LH:FSH ratios were 2:1, favoring polycystic ovarian syndrome. Ten (8.84%) female patients had ultrasound reports that supported a polycystic ovarian disorder diagnosis. Insulin resistance was shown by elevated fasting insulin levels in only one subject.

DISCUSSION

The most prevalent age group in our study was 21–35 years old, and acne rates steadily decreased beyond that age. Two further investigations found similar results, although another study found no discernible decline after 40 years.^[6,7] According to our study, women were more likely than males to have post-adolescent acne (81.9%). This is consistent with research conducted by Goulden et al. and Khunger et al., which found that 76% and 82.1% of the women, respectively, were impacted.^[4,8] This could indicate that women are more likely than men to seek treatment. But according to a community-based poll of over 700 persons over 25, 3% of men and 12% of women reported having clinical facial acne. Adult acne in women may be more common in women due to hormonal causes, increasing cosmetic use, and exposure to hot and muggy circumstances when cooking. Of the patients in our study, 85 (61.6%) had persistent acne. In contrast, Goulden et al. observed that 82% of their patients had chronic acne, whereas Khunger et al. stated that 73.2% of their patients had persistent acne.^[4,8] The most often involved site in our analysis was the cheeks (105, or 76.08%), followed by the chin (84, or 60.9%) and the mandibular region (44, or 31.9%). Khunger et al. found a similar distribution, with the cheeks being the most often involved site.^[8] This contrasts with a research by Capitanio et al. that found that the mandibular region and lower face were more frequently affected by post-adolescent acne.^[9] In our study, 31.2% of female patients experienced a premenstrual flare. Swathi et al. and Stoll et al. saw similar outcomes.^[10,11] 37% of women in the Goulden et al. study showed at least one hyperandrogenism-related characteristic, such as hirsutism (24.2%), alopecia (7.2%), or menstrual disruption (17.7%). Only 6 (4.02%) of the women in our sample revealed elevated laboratory markers of hyperandrogenism, despite the presence of clinical symptoms suggestive of hyperandrogenism, such as premenstrual flare (31.2%), hirsutism (41.8%), menstrual abnormalities (15.1%), and alopecia (10%). Our findings contrast with a small number of research that found a higher prevalence of hormone abnormalities.^[4,12] These conflicting results imply that end-organ hypersensitivity, rather than testosterone levels, may be the primary cause of adult female acne.^[13] Alternative explanations for the pathophysiology of this illness could include

increased local metabolism of androgen hormones in the skin to strong androgen metabolites or greater sensitivity of the sebaceous gland to androgens.^[14] The idea that target tissue androgens may be a key factor in the pathophysiology of female acne is further supported by research.^[15] It seems plausible that a specific proportion of follicles are prone to acne, and that these follicles exhibit varying degrees of vulnerability to the hormones in circulation. Our investigation found that some factors, such as stress (17.31%), cosmetics 21 (15.21%), and topical steroid abuse 57 (41.30%), were important. These findings are in line with earlier research by Addor et al. and Khunger et al.^[4,16]

CONCLUSION

In conclusion, the multifaceted genesis and incidence of post-adolescent acne in adults, providing insight into its unique characteristics. More research is necessary to understand how hormonal and non-hormonal factors, such as stress, family history, seasonal fluctuations, cosmetic use, and drug use, interact to cause acne after puberty. For improved patient care and treatment results, these insights can direct customized management techniques involving stress reduction, hormone modulation, and lifestyle adjustment.

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