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Dermatology

ADULT ACNE: ITS CLINICOEPIDEMIOLOGICAL FEATURES

Kirti Jangid — MD Dermatology, Venereology, Leprology DNB Grade 2 Teacher, Department of Dermatology, Seth V.C. Gandhi & M.A Vora Municipal General Hospital, M G road, Ghatkopar East, Mumbai 400077, India

Manish Khandare* — MD Dermatology, Venereology, Leprology Assistant Professor, Department of Dermatology, INHS Sanjivani, Naval Base, Kochi - 682 004, Kerala, India* Corresponding Author

Rahul Ray — MD Dermatology, Venereology, Leprology Professor, Department Of Dermatology, GITAM Institute of Medical Sciences and Research, Visakhapatnam., 530014, Andhra Pradesh, India.

ABSTRACT Although acne is principally a disorder of adolescence, the prevalence of adult acne is increasing. Adult acne has been defined as the presence of acne beyond the age of 25 years. Acne in adult women may have different clinical features i.e., more involvement of lower face, association with hair loss, premenstrual flare, signs and symptoms of insulin resistance, dyslipidaemias. Various studies have shown that a significant percentage of adult women with acne failed to respond to treatment with systemic antibiotics and isotretinoin which indicates a need for treatment alternatives with improved effectiveness and acceptable side effects for resistant acne. This study aims to study the different clinicoepidemiological features of adult acne.

KEYWORDS : acne, adult, hirsutism

INTRODUCTION

Acne vulgaris is the most common skin disease of adolescents and young adults with reported prevalence of nearly 80% [1].

Adult acne has been defined as the presence of acne beyond the age of 25 years. [2] Acne persisting beyond the age of 25 years is called persistent adult acne and acne developing for the first time after the age of 25 years is called late-onset adult acne. Both the types are more common in women. Late onset acne can be further subdivided into chin acne, which occurs around the chin and perioral area, is inflammatory and flares premenstrually and sporadic acne which occurs suddenly in adult life with no distinguishing features. It has been reported that patients with adult acne have a 40% prevalence of psychiatric comorbidity. [3, 4, 5]

Aims and objectives

To study the different clinicoepidemiological features of adult acne

Study design

The study was performed in accordance with Good Clinical Practices and after clearance from the ethical committee. This observational study was conducted in the outpatient department of a tertiary care hospital. Patients were recruited for the study from July 2018 to July 2020. Seventy two adult female patients presenting with acne fulfilling the inclusion and exclusion criteria were enrolled for the study. Epidemiological profile, historical details including gynaecological history, associated illnesses, clinical grading and pictographic record, complete physical examination, laboratory findings and ultrasonograhy (USG) pelvis were recorded.

Study period: July 2018 to July 2020

Inclusion criteria:

1. Patients above the age of 25yrs both males and females.
2. Patients experiencing onset of lesions first after the age of 25yrs
3. Patients of adolescent acne persisting into adulthood i.e. persisting beyond 25yrs of age.

Exclusion Criteria:

1. Patients receiving any systemic steroid, ATT, any other drugs known to cause acne.
2. Patients with occupational acne, chloracne.
3. Patients receiving any form of treatment for acne in the past two months.

A total of 72 patients of adult acne were included in the study after taking written informed consent. The sample size of 72 was calculated using OpenEpi software for the prevalence of 25 % (Prevalence of acne among adults more than 25 year old) at 95% confidence level, 80% power of study and 10% of absolute precision. 05 male patients presented with adult acne however were not included in the study as they did not consent to be a part of the study. A detailed history and examination was carried out for each patient, including a medical and family history. Information about the extent and site of involvement, aggravating factors including drug intake, sun exposure, application of cosmetics, stress, premenstrual flare, hairloss, associated comorbidity, signs of hyperandrogenism, menstrual irregularities. Gynaecological history of patients was noted. At the beginning of study all patients were assessed for presence of stress based on a semi structured perceived stress questionnaire (PSS). The PSS measures the degree to which situations in one's life are appraised as stressful. [6] Data was analysed using EPI-info software. Hairloss was graded on basis of Sinclair pictographic 5-point scale.[7]

For evaluation of hirsutism a modified Ferriman Gallwey scale was used which quantified the presence of terminal hair over nine body parts: the upper lip, chin, chest, upper and lower abdomen, thighs, upper and lower back, and upper arms. They were divided into five classes and grades zero to four (0-4) assigned to them as follows: (0) in case of no hair, (1) only vellus hair, (2) terminal hair lower than 10, (3) more than 10 terminal hairs but restricted, and (4) high terminal hairs and countless. The subjects with a score of 8 or higher were defined as hirsute. [8,9,10]

Clinical assessment of each patient included type of acne lesions, distribution, severity and grading of acne was carried out. For the purpose of grading, acne Score (Hayashi et al 2008) was calculated based on the lesion count ie. inflammatory eruptions on half of the face. [11]

Rosacea was excluded on the basis of clinical examination. Associated findings such as obesity, hirsutism and alopecia indicating hormonal imbalance were also noted.

All the patients were screened on the 2nd day of the menstrual cycle for hormonal assay and transabdominal ultrasound sonography (USG) pelvis. Fasting blood sample was collected. Following set of investigations were done for all patients.

- Baseline blood pressure recording
- Complete blood count
- Liver and kidney function tests
- Lipid profile
- Blood sugar (fasting and postprandial)
- Thyroid profile
- serum Leutinizing Hormone, Follicle Stimulating Hormone, Testosterone (total), prolactin levels

- -USG pelvis

Sonographic features of PCOS included the presence of 12 or more follicles in either ovary with 2-9 mm diameter and/or increased ovarian volume (>10 mL). Serum dehydroepiandrosterone (DHEAS), 17 OH progesterone and fasting insulin levels were not done due to nonavailability. All patients were reviewed with all investigation reports.

RESULTS

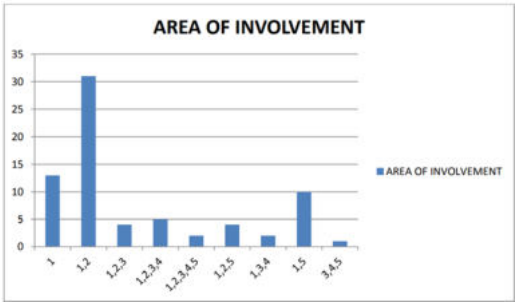
Mean age of study subjects was 30.40 years, mean weight being 62.89 kg, minimum age of onset being 12 years and highest age of onset reported in this study being 47 years. 73.61% (53) patients had persistent acne and 26.39% (19) patients had late onset acne. 79.2% subjects had normal BMI, 16.7% subjects were overweight and 4.2% subjects obese (Table 1).

Table 1. Baseline Characteristics of Study Subjects

VARIABLES	N	Mini	Max	Mean	SD
AGE	72	25	47	30.4	4.439
WEIGHT (KG)	72	40	90	62.89	9.296
BMI	72	20	32	23.1	2.7
AGE OF ONSET	72	12	47	11.3	3.7

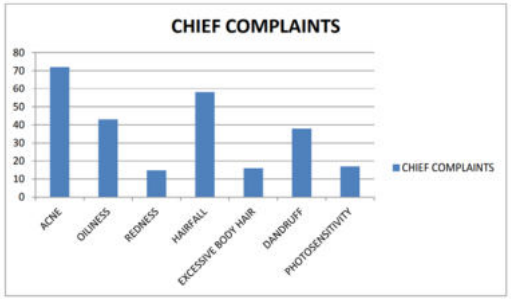
Table depicts mean age of study subjects was 30.40 years, mean weight being 62.89kg, mean duration of acne in years was 11.3 years, minimum age of onset being 12 years and highest age of onset reported in this study being 47 years.

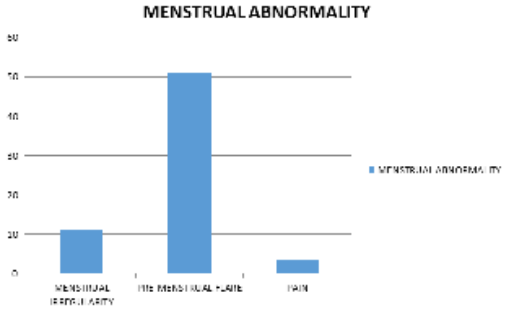
Maximum number of patients i.e. 31 patients (43.06%) had lower face and jawline involvement. One patient (1.4%) had truncal acne.



(1: LOWER FACE, 2: JAWLINE, 3: CHEST, 4: BACK, 5: UPPER FACE)

80.6 % patients reported history of hairfall, 59.7% patients reported history of oiliness of facial skin. 22.2% of patients reported excessive body hair. 15.3% patients complained of irregular menses, 70.8% patients complained of premenstrual flare of acne.





2.8% patients were suffering from hypertension and type 2 DM each. 5.6 % patients suffered from thyroid illness and 4.2% patients suffered from other disorders (atopic dermatitis, chronic urticaria and chronic eczema) {Table 2}.

4.2% (3) patients reported one or more family members diagnosed with PCOS

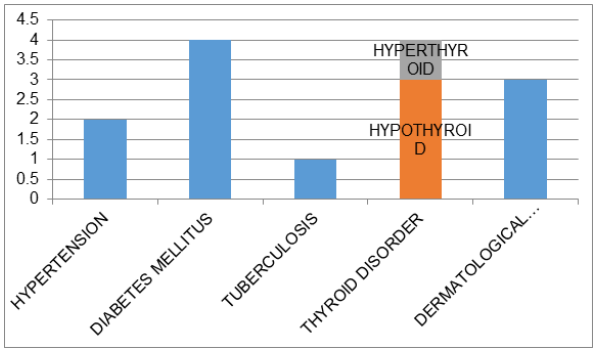
4.2% (3) patients reported excessive hair growth in male distribution in mother/ sister. 2.8% (2) patients reported family history of thyroid illness. 1.1% (8) patients reported a history of diabetes in the mother, 9.7% (7) in the father and 1.4% (1) in both the parents.

6.9% (5) patients reported sleep disturbance in the form of decreased sleep (less than five hours). 11.1% (8) patients were diagnosed to have stress based on the questionare.

Table 2. PAST HISTORY OF STUDY SUBJECTS

Past History	N	%
HYPERTENSION	2	2.8%
TYPE 2 DM	2	2.8%
TB	1	1.4%
Hyperthyroidism	1	1.4%
Hypothyroidism	3	4.2%
Dermatological disorder	3	4.2%

Past history of study subjects revealed that 2.8% patients were suffering from hypertension and type 2 DM each. 1.4% patients had past history of pulmonary tuberculosis, 5.6 % patients suffered from thyroid illness and 4.2% patients suffered from other disorders (atopic dermatitis, chronic urticaria and chronic eczema).



69.4 % patients showed features of FPHL with maximum number of patients (29) falling into Sinclair grade 1. 15.28% patients had hirsutism with maximum number of patients (6) having ferriman galleway score of 8. 22.2% (16) patients showed signs of acanthosis nigricans, 5.6% (4) patients had acrochordons, 9.7% (7) patients showed evidence of Seborrhoea.

Maximum patients were falling in Hayashi moderate (count of 5 to 20 inflammatory lesions) and 5 patients were classified as Hayashi mild.

37.5% of patients had dyslipidemia. 4.17% had deranged FSH levels. Deranged TFT were observed in 4.16% of patients. 8.3% had abnormal USG out of which three patients met the criteria for PCOS.

Hayashi Score at baseline evaluation showed a maximum 95.1% patients falling in the moderate category and 4.9% patients in the mild category.

DISCUSSION

Adult acne has been defined as the presence of acne beyond the age of 25 years [4].

In the present study, mean age of study subjects was 30.40 years (age range of 25-47 years) that is consistent with previous study done by Niti Khunger et al. in 2012 in which the mean age of the patients was 30.5 years with a range of 26-50 years. [12] Hormonal factors, increased use of cosmetics and exposure to hot and humid conditions while cooking may play a role.

Facial involvement was present in 100% of patients. Lower face was involved in 98.6% of patients. Jawline was involved in 63.8% of patients. Upper face was involved in 23.6%. Truncal involvement was seen in only 19.4% of patients. In studies done by Goulden V et al, Poli F et al., and Capitano B et al., involvement of lower face and mandibular area was seen more commonly in adult acne cases. [13,14,15]

Other features observed in decreasing order were hairfall (80.6%), premenstrual flare (70.8%), dandruff (52.8%), acanthosis nigricans (22.2%), menstrual irregularities (15.3%), hirsutism (15.28%). In 2001, Stoll et al studied the effect of the menstrual cycle on acne, 44 percent of respondents experienced perimenstrual acne flare. [16] Niti Khunger et al. reported clinical features suggestive of hyperandrogenism such as premenstrual flare (11.7%), hirsutism (5.7%) and alopecia (1.8%). [12]

In the present study, FPHL was observed in 69% of patients. Approx. 60% patients had grade 1 FPHL as per Sinclair grading. Acne scoring was done as per Hayashi scoring. 93.1 % of patients did belong to the moderate category as per Hayashi scoring. No significant correlation was observed amongst Hayashi acne scoring and Sinclair grading of FPHL.

About 22% patients had family history of DM, 4.2% had Positive family history of PCOS and hirsutism each, only 2.8% had family history of acne. Studies have shown that increased serum levels of IGF-1 have been observed in adult women and men with acne, giving rise to the possibility of hyperinsulinemia in acne. As insulin resistance is usually familial, serum insulin levels should be measured in patients of treatment resistant acne especially in patients with positive family history of DM. [17]

In the present study, semistructured questionnaire stress scale was devised to know the level of stress in acne patients. 11.1 % had positive history of stress due to acne vulgaris. According to Goulden et al., who reported that in 71% of their patients acne flared with stress. [13] Kligman AM proposed that perhaps the major etiological factor in adult acne was increased levels of stress, leading to increase in adrenal androgens. [18]

In the present study, 12.5% had a positive history of use of cosmetics. While in a study by Niti Khunger et al. 40 patients (22%) out of 176 using some form of cosmetics reported aggravation due to cosmetic use. [12]

The present study reported that 37.5% of patients had dyslipidemia. Deranged thyroid function was observed in 4.16% of patients. 8.3% had abnormal USG out of which three patients 4.17% fulfilled the criteria for PCOD. Legro RS et al. and Nina Madnani et al had described that PCOS has been associated with metabolic complications including obesity, dyslipidemia, insulin-resistance (IR) and a risk of developing Type 2 diabetes mellitus (T2DM). [19, 20]

CONCLUSION

The present study was conducted with the objective of assessing the clinical spectrum of adult acne.

Acne in adult women may have different clinical features i.e. more involvement of lower face, association with hairloss, premenstrual flare, signs and symptoms of insulin resistance, dyslipdemias.

Dermatologists play a critical role in the diagnosis of PCOS as acne is a common cutaneous and presenting sign. It is important to look for potential symptoms and signs of hyperandrogenism and to exclude an underlying hormonal disorder by complete history, physical examination and relevant investigations.

All patients of adult acne may not have an underlying hormonal imbalance or hyperandrogenism.

Further studies with longer follow up are recommended to assess the treatment response in the management of adult acne patients.

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