

# A Study of Clinical and Hormonal Profile of Adult Women with Acne

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## ABSTRACT

**Introduction:** Acne is a commonly encountered condition among patients attending the dermatologists. A chronic condition of the pilosebaceous glands, it is most commonly seen among the adolescents. The acne usually remits after adolescence but in some percentage of women it may persist into the adult life and in others it may appear for the first time in postadolescent age. Although mostly associated with hyperandrogenism but not always is this association seen. Current research aimed to study the clinical and hormonal profile in adult women in acne and see for any correlation between adult acne and hormonal abnormalities.

**Material and methods:** A total of 380 women over the age of 25 years with acne were taken up for the study and a detailed history and clinical examination was done. Hormonal profile was done in all the patients. The data was statistically evaluated and inferences drawn.

**Results:** A total of 380 women over the age of 25 years presenting to the outpatient department with acne were taken up for the study. The study was conducted over a period of six months at a tertiary centre of north India. Out of 380 women, 260 women (68.4%) had persistent acne and 120 women (31.5%) had late onset acne. Maximum women (136, 35.8%) with acne were in the age group of 25-30 years. 82.7% of persistent acne and 55% of late onset acne had clinical evidence of hormonal abnormalities.

**Conclusion:** Adult women with acne present with more inflammatory lesions predominantly over chin and lower half of the face, while comedones being rare in them. Most of them were having clinical and laboratory evidence of hormonal irregularities.

**Keywords:** Acne, Adult Women. Hormonal Profile, Hyperandrogenism

## INTRODUCTION

Acne is one of the most common skin condition for which the treatment is sought by the patients from the physicians worldwide. Affecting more than 80% of the adolescent, it primarily is considered a disease of the puberty but there is a rising trend towards increased prevalence of acne in adult women.<sup>1</sup> Of the females presenting to outpatient department, one third of the females are beyond the age of 25 years.<sup>2</sup> Adult acne is defined as acne in females beyond the age of 25 years. Adult acne has further been categorized into persistent adult acne, late onset adult acne and recurrent acne. Various studies have found persistent adult acne to be the most common type of acne and it is defined as a type of acne which has its onset in the adolescence and continues into adult hood. Late onset adult acne has its onset in the adult life for the first time whereas the recurrent acne is the acne which first appears in adolescence, then remits

to again appear in adulthood.<sup>3,4,5</sup> Late onset adult acne further has been divided into chin acne which is more inflammatory with premenstrual flare ups and a sporadic acne with no such findings.<sup>6</sup> Hormonal abnormalities have been shown to be associated with adult acne in various studies but other studies didn't find any such association. Adult onset acne pathogenesis involves a complex interplay between endocrine disorders (hyperandrogenism), genetic predisposition, cosmetics, stress and topical applications.<sup>7</sup> This study was undertaken in the department of dermatology at a tertiary centre of Jammu region to study the clinical and hormonal abnormalities in women with adult acne and to see for any specific clinical features specific to adult acne.

## MATERIAL AND METHODS

This was an observational study carried out in the department of dermatology, Govt. Medical College, Jammu. A total of 380 women above the age of 25 years presenting to the outpatient department with acne were taken up for the study. A detailed history regarding the onset, duration, site and severity of acne was taken. Also history of aggravating factors like stress, premenstrual flare up, drug intake, topical application was noted. A detailed gynaecological and obstetric history was noted including amenorrhea, oligomenorrhea, obesity, hirsutism was also taken. A detailed clinical examination regarding type of lesions, site and severity was noted. Features regarding hyperandrogenism including hirsutism, alopecia, acanthosis nigricans, obesity, seborrhea was also noted. Investigations were given like serum LH, FSH, prolactin, testosterone, dehydroepiandrosterone, insulin levels were given to all the patients. Rosacea and other conditions with papules and pustules over face other than acne were excluded on clinical examination. The results were statistically analysed.

## RESULTS

A total of 380 women over the age of 25 years presenting to the outpatient department with acne were taken up for the study. The study was conducted over a period of six months at a tertiary centre of north India. Out of 380 women, 260 women (68.4%) had persistent acne and 120 women (31.5%)

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**How to cite this article:** Sameer Abrol, Rohini Sharma. A study of clinical and hormonal profile of adult women with acne. International Journal of Contemporary Medical Research 2018;5 (10):15-17.

**DOI:** <http://dx.doi.org/10.21276/ijcmr.2018.5.10.9>

Age group	Persistent acne	Latest onset acne	Total acne
25-30 years	117	57	174
31-35 years	72	29	101
36-40 years	26	17	43
41-45 years	22	9	31
Ears	15	5	20
>50 years	8	3	11
Total	260	120	380

**Table-1:** Age wise distribution of patients

Clinical features of hyperandrogenism	No. of patients with persistent acne
Alopecia	124
Hirsutism	170
Oligomenorrhea	165
Obesity	144
Acanthosis nigricans	132
Striae	19
Infertility	112
Premenstrual flare	105

**Table-2:** Clinical features of hyperandrogenism-

had late onset acne. Maximum women (136,35.8%) with acne were in the age group of 25-30 years followed by (104,27.3%) of women in the age group of 31-35 years. Age wise distribution of patients is shown in table 1.

Out of 260 adult women with persistent acne, 215 (82.7%) women had moderate to severe inflammatory acne with papules, pustules, nodules and cysts more along the chin, jaw line and the neck. All 215 women had one or more clinical evidences of hyperandrogenism in the form of hirsutism, obesity, acanthosis nigricans, alopecia, menstrual irregularities, infertility and premenstrual flare up. (table 2). On laboratory evaluation for hormonal abnormalities of these 215 women, 200 patients (90%) had laboratory abnormalities. 195 of 215 patients (90%) had PCOD findings with supportive USG findings seen in 185 patients also and 5 patients were with Cushing Syndrome.

The rest 45 (17.3%) patients had non inflammatory lesions in the form of comedones over cheeks with no clinical or laboratory evidence of hyperandrogenism or any hormonal abnormalities.

Out of 120 women with late onset acne, 74 (61.6%) had moderate inflammatory acne lesions along the jaw line, mandibles and chin. 46 patients had comedonal lesions over forehead, cheeks, chin or trunk. 66 (55%) patients had one or more features of hyperandrogenism and laboratory evidence of hyperandrogenism and these patients had more inflammatory lesions along the jaw line, chin, mandibles and neck. Use of cosmetics as the precipitating factor was seen in 14 patients. Use of steroids or OTC creams in 15 patients.

## DISCUSSION

Since time immemorial acne has been linked to adolescence. A chronic inflammatory condition, it is mostly seen over face, chest, back. Over the last few years, there has been increasing prevalence of acne in adult women over the age

of 25 years as has been reported in various studies.<sup>8</sup> Studies around the world have shown the prevalence of acne in adult women to the tune of 41%.<sup>9</sup> In our study a total of 380 women with acne over the age of 25 years were taken up for the study and in our study the most common age group was between 25 to 40 years and there was a steady decline in acne after 40 years. Similar findings were reported by two other studies<sup>7,10</sup> but on the contrary another study reported no substantial decrease post 40 years.<sup>11</sup>

As has been reported in the literature by various studies<sup>7,10,11,13</sup>, the persistent form of acne is more commonly encountered in adult women with acne as compared to late onset acne. Similar findings were found in our study where 68.4% of women had persistent acne and 31.5% had late onset acne. Regarding clinical presentation, 289 out of 380 (76%) women had mild to moderate inflammatory acne. Similar finding was reported by a study where 83% of the adult patients with acne had inflammatory lesions.<sup>13</sup> One more study reported that women with adult acne have more inflammatory lesions as compared to adolescence.<sup>14</sup>

Regarding the causes of acne in adult age group, various factors have been implicated still the pathogenesis remains to be elucidated. Various studies have laid emphasis on hormonal abnormalities in adult women with acne and hormonal therapy for acne associated with hyperandrogenemia and resistant acne.<sup>15,16</sup> But other studies didn't find any support for this.<sup>17</sup> In our study, 82.7% of women with persistent acne had clinical evidence of hyperandrogenism like hirsutism, striae, menstrual irregularities, premenstrual flare and 77% showing laboratory evidence as well with PCOD being main finding. In late onset acne group, 55% had clinical and laboratory evidence of hormonal abnormalities. These findings were similar to another study which also showed increased prevalence of hormonal imbalances<sup>11,18</sup> whereas few other studies reported lower prevalence of hormonal irregularities in adult women with acne implicating role of other factors like stress, cosmetics, topical preparations.<sup>13,17</sup> In our study women over the age of 25 years presenting with more inflammatory lesions and less comedones had increased prevalence of clinical and laboratory evidence of hormonal imbalances. Hormonal evaluation thus should be done in such presentations and hormonal therapy be offered to such women with definite laboratory findings or refractory acne.

## CONCLUSION

Adult women with acne are forming a sizeable proportion of OPD attending population. From our study we can conclude that women over 25 years of age with acne present with more inflammatory lesions localized mainly over the chin, mandibles, jaw line and neck and should be looked for clinical evidence of hormonal abnormalities and appropriate investigations need to be carried out.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 01-09-2018; **Accepted:** 02-10-2018; **Published:** 11-10-2018