



ASSOCIATION OF FEMALE ACNE WITH POLYCYSTIC OVARY SYNDROME

General Medicine

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ABSTRACT

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder and is the leading cause of hyperandrogenemia in women. Acne vulgaris is also a common cutaneous manifestation of hyperandrogenism. Result: Majority of cases with acne are in 1st and 2nd decade of life but acne with PCOS cases presented little earlier in 1st decade upto 20 years. The mean age of cases of acne with PCOS is 21.44 year. High fatty food and increase BMI has a significant impact on development of acne in PCOS patients as obesity may lead to a state of hyperandrogenemia and insulin resistance.

Conclusion: Hyperandrogenism leads to close association between female acne and PCOS.

KEYWORDS

PCOS, acne, hyperandrogenism.

INTRODUCTION :

The frequency of polycystic ovarian syndrome in general population is around 5%. It is often characterized by hyperandrogenism, which may often be manifested as: as hirsutism, acne, seborrhea, alopecia, menstrual irregularity, obesity and PCOS. Manifestations of PCOS may be exacerbated by certain epidemiological, environmental and life style factor. Many studies have reported a strong association between acne and underlying systemic endocrine disorders, particularly Polycystic ovarian syndrome. Premenstrual flare up of acne and menstrual irregularities have been found significantly associated with PCOS. Hirsutism is an important indicator of hyperandrogenemia and an important criteria for diagnosis of PCOS has been evaluated and found to have a significant association.

MATERIAL AND METHODS :

The study was an institutional based, observational study done in Dermatology department from 1st January 2017 to 31st January 2018. A total of 100 patients of adult acne were included in the study. Detailed history was taken and proper clinical examination was performed, following which statistical evaluation was done to draw conclusions.

Results:

Table-1 : Age wise distribution of cases

Age	No	Percentage
12-20	29	53.7
21-30	21	38.8
31-40	4	7.4

Table-2 : Showing dietary relationship in acne with PCOS and non PCOS group.

Diet	PCOS	Non PCOS	Chi square test	P-value
High Protein	7(12.9%)	6(13.04%)	0.00	.990
High carbohydrate	4(7.04%)	8(17.30%)	.877	.349
High fat	16(29.90%)	9(19.50%)	3.982	.046

Table-3. Distribution according to BMI (Body mass index):

BMI	PCOD n=54	Non PCOD n=46	Chi square test	P value
18.5- 25	25	35	6.362	0.012
> 25	29	12		

Table-4. Showing associated problem with Acne.

Symptoms	PCOS (n=54)	Non PCOS (n=46)	Chi square	PValue
Menstrual irregularities	P- 18 A-36	P- 12 A-34	2.913	0.088

Hirsutism	P-21 A- 33	P- 10 A- 36	25.143	0.000
Alopecia	P- 18 A - 36	P-06 A- 40	2.913	0.088
Seborrhea	P-32 A- 22	P- 19 A- 27	3.204	0.073

P=present, A= absent

From our study we can see that majority of the cases with acne are seen in 1st and 2nd decade of life i.e 47% and 45% respectively. But acne with PCOS has a prominent peak in 1st decade that is upto 20 years of age. Out of the 54 cases of PCOS with acne, 16(29.6%) gave a history of intake of high fatty diet and the association was found to be statistically significant (p value.046) in comparison to non PCOS group. 46.2% population are having BMI in between 18.5-25 in PCOS group whereas 76% are in non PCOS group. In obese group i.e BMI >25, 53.7% population are in PCOS group and 26.08% population are in non PCOS group.

(SPSS) will be applied for Statistical Analysis

DISCUSSION:

Acne with PCOS has a prominent peak in 1st decade. Only one study showing maximum clustering of cases with acne in between 21 to 30 years of age¹. The mean age of presentation among PCOS group is 21.44 years. According to presently available world literature PCOS with acne vulgaris is one of the most frequently encountered externally visible skin diseases in dermatology for individuals between 15 and 40 years of age². Acne has typically been regarded as an adolescent condition; however, in the past two decades, findings from research and clinical practice have revealed that it is quite common in the adult population. In different study authors are reported that association of PCOS and acne ranging from 26% to 60%.^{3,4,5}

High fatty food was found to be associated with increased sebum production. So we tried to establish a relation between dietary factors and acne in PCOS cases⁵. Out of the 54 cases of PCOS with acne, 16(29.6%) gave a history of intake of high fatty diet and the association was found in comparison to non PCOS group. It has been hypothesized that foods high in fat may exacerbate acne by production of more comedogenic sebum by increasing blood lipid levels or by producing sebum that is less fluid, and greater obstruction of pilosebaceous follicles thus setting the stage for follicle rupture and secondary inflammatory changes. Moreover

fatty foods predisposed to obesity⁶.

We have seen that 53.7% of cases with PCOS and acne are having BMI >25 whereas only 26.08% in non PCOS group⁶. It is hypothesized that increase in BMI predisposes to androgen excess which leads to both PCOS and acne.

Familial predisposition according to the results of a large study of identical twins showing 97.9% of affection⁷. Most of the present literatures observed a higher incidence of 50%. Hence it seems to be true that genetic factors might play role in acne development and persistence.

Premenstrual flare up of acne lesions are seen in 68.51% of PCOS cases in respect to 17.39% in non PCOS. Western literature denotes premenstrual flare-up of acne were significantly higher in acne patients with PCOS.⁴

Alopecia and Hirsutism which are important indicator of hyperandrogenaemia and an important criteria for diagnosis of PCOS. In western literatures the value is too some extent high. In a study by⁸

al about 54% of the women with PCOS complained of hirsutism⁹. It has been demonstrated a strong association between acne, hirsutism and various hormonal dysfunctions among women with PCOS. Seborrhoea does not have any significant association. Acne vulgaris was the most common concomitant disease seen in 35% of the subjects finding was in concordance with another Indian study¹⁰. Several studies support a positive correlation between acne and elevated androgen levels, such as dehydroepiandrosterone sulfate, androstenedione, testosterone, and dihydrotestosterone, and a negative correlation with SHBG levels.¹¹

CONCLUSIONS:

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder and is the leading cause of hyperandrogenemia in women. Clustering of majority of cases with acne are in 1st and 2nd decade of life. The mean age of cases of acne with PCOS is 21.44 year. Food rich in fat may exacerbate acne by production of more comedogenic. Increased BMI has a significant impact as obesity may lead to a state of hyperandrogenemia and insulin resistance as in PCOD.

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