Prevalence of Obesity in Women with Polycystic Ovarian Syndrome: A Retrospective Report

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Abstract

Background: Polycystic Ovarian Syndrome (PCOS) is one of the ten most common gynaecological problems and the leading cause of female infertility. PCOS not only affects the physical health, but also the mental health of women. Prevalence of higher levels of psychological distress in women with PCOS has been well documented. Obesity which also leads to psychological stress and issues too has been documented as a cause of PCOS.

Objective: Despite the increasing incidence of the syndrome, limited research has been done to study the prevalence of obesity among women with PCOS. The aim of this study was thus to find the prevalence of obesity in women who were diagnosed to have PCOS.

Methodology: The data of 73 women who approached the institution for diagnosis and management of PCOS were included in the study. Demographic data like age, height and weight of the women at the time of diagnosis of PCOS were collected and subjected to analysis.

Result: The results showed that 42% women had normal BMI and 14% were underweight. Overweight and obese women constituted 22% each.

Conclusion: The result of the study suggests that obesity and overweight may not necessarily be the cause of PCOS.

Keywords: *Polycystic Ovarian Syndrome; BMI; Obesity; Prevalence.*

Introduction

Polycystic ovarian syndrome (PCOS), a heterogeneous endocrine disorder is most common in women of the reproductive age group which has psychological, social and economic sequel.[1] It is also known as Stein–Leventhal syndrome.[2]

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It is characterized by the presence of multiple cysts in at least one ovary along with ovulatory dysfunction and excessive androgen secretion.[3] The prevalence of PCOS in developed countries like United States is estimated to range between 10.3% - 47.5%.[4]

The overall prevalence of PCOS in developing countries like India is 41%.[5]

Genetic predisposition and lifestyle factors such as high calorie diet, obesity, lack of exercise contribute to the occurrence of PCOS. E arly precursors of PCOS are postulated to be gestational factors like foetal programming disturbance in-utero and birth weight.[6] Overweight and obesity both are abnormal or excessive fat accumulation that present a risk to health. Both were once considered a problem only in countries with

high income, whereas now it has dramatically risen in countries with low and middle income as well, especially in urban settings.[7]

The Body Mass Index (BMI) is a simple and most commonly used measure to classify overweight and obesity in adults. BMI is defined as the weight in kilograms divided by the square of the height in meters (kg/m^2).[8]

Materials and Method

Type of Study: Retrospective study

Methodology: Ethical clearance was obtained from the Institutional Ethical Committee for data collection and analysis. Files of 132 women diagnosed with PCOS from the year 2014 to 2018 between the ages of 18 to 49[9] years were identified, who visited the institution for diagnosis and management of PCOS.

Demographic data like age, height and weight at the time of diagnosis of PCOS were procured from the file of the patients. BMI was calculated and patients were classified according to the WHO criteria.[8]The data thus obtained was subjected to analysis.

Inclusion Criteria: Data of women between 18 to 49 years of age newly diagnosed with PCOS was included in the study.

Exclusion Criteria: Data of women who were undergoing or had completed treatment for PCOS prior to approaching the institution were excluded from the study.

Result

Data was collected from files of 132 patients diagnosed with PCOS. However, 8 patients did not meet the age criteria and files of 14 patients had either height or weight or both the data missing. 37 women had been following up for the treatment of PCOS elsewhere. Thus the data of only 73 patients was readily available for data analysis.

The mean age of all the women included in the study was 22.9±4.6, least being 18 years and highest being 37 years.

The percentage of married and unmarried women with PCOS was 35.6% and 64.4% respectively.

The mean BMI of the women with PCOS was 25±6.2. Frequency distribution of the women with PCOS according to the classification of BMI showed that 42% women had normal BMI and 14% were underweight. Overweight and obese women constituted 22% each. The mean BMI of underweight, normal, overweight and obese women with PCOS was 21.7±1.8, 16.4±2.0, 27.5±1.6 and 34.1±2.8 respectively.

The percent prevalence of women with underweight and normal BMI when compared with that of overweight and obese together showed a significant difference at a p value of 0.00174.

Table 1: Frequency distribution of women according to BMI

	N	%	Age in Years±SD	BMI±SD
Normal	31	42	21.9±3.8	21.7±1.8
Underweight	10	14	20.8±2.9	16.4±2.0
Overweight	16	22	24.9±5.2	27.5±1.6
Obese	16	22	24.2±5.4	34.1±2.8
Total	73	100	22.9±4.6	25.0±6.2

Discussion

The analysis of the data of 73 women showed that the proportion of unmarried women being diagnosed with PCOS was higher than married women. This result is supported by previous study which also reported an indirect prevalence of approximately 60% women with PCOS being unmarried.[5]

It was noted that majority of the women with PCOS had a normal BMI. Number of women with the normal BMI was twice the number of women with obesity.

The percentage of women when grouped as underweight and normal BMI was higher than the group including overweight and obese together. Previous study suggests that approximately 50% of women diagnosed with PCOS are overweight or obese.[10, 11]

Conclusion

The results of our study suggest that overweight and obesity may not necessarily be the cause of PCOS as suggested by previous studies.[12,13] However, generalizing these results for the whole population may be difficult, as the sample size was small and the various other conditions and factors associated with PCOS were not taken into account during the study. Thus further detailed studies including other factors should be undertaken.

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Conflicts of Interest: The authors do not have any conflicts of interest to declare.

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