Clinical profile of PCOS patients at a tertiary care center in Gandaki Province of Nepal

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ABSTRACT

Background: Polycystic Ovary Syndrome is one of the most common cause of anovulation in women of reproductive age, with a prevalence of upto 10%. Oligomenorrhea, hirsutism and obesity together with enlarged polycystic ovaries are the diagnostic criteria of PCOS. These women are vulnerable to type II diabetes, dyslipidemia, premature arteriosclerosis, and endometrial carcinoma. **Aims and Objectives:** The aim and objective of this study was to see the various clinical profile of PCOS patients at a Medical College in Nepal and to make patients aware about the long term sequalae associated with it. **Materials and Methods:** This was a retrospective study conducted in the outpatient department of Obstetrics and Gynaecology at Manipal Teaching Hospital from January 2018 till June 2019. A total of 90 patients presenting with oligomenorrhoea, obesity, acne, infertility and hirsutism were included in the study. The exclusion criteria were young women who had their menarche less than 2 years back, women older than 45 years, and patients on exogenous estrogen or progesterone therapy. **Results:** Out of 90 patients studied, 37(41%) were married and 53(59%) were unmarried. There were many patients from urban compared to rural areas (67% vs 33%). Many patients were either overweight (22%) or obese (61%) and 6% of the patients were underweight. Mean age at the time of presentation was 31.66 years with many patients (37%) between 30-35years age group. Majority of the patients were either oligomenorrhoeic or amenorrhoeic (78 %). Weight gain was present in 83% of the patients. Infertility was present in 81% of the married patients. Fifteen women (17%) had hypothyroidism and were receiving treatment for the same. Ultrasonography was done in all the patients and typical necklace pattern of follicular arrangement was seen in 70 (78%) patients. **Conclusion:** The diagnosis of PCOS can be reliably predicted with the help of clinical features and sonography in women according to Rotterdam criteria. Oligomenorrhoea or amenorrhea and weight gain were main symptoms in our patients. It is important to educate and make unmarried PCOS patients aware of its association with infertility and long-term medical problems.

Key words: PCOS; Anovulation; Oligomenorrhea; Obesity

INTRODUCTION

Polycystic Ovary Syndrome is one of the most common cause of anovulation in women of reproductive age, with a prevalence of upto 10%.[1] PCOS is a growing problem among Nepalese women with a wide variety of presentations. In 1935 Irving F. Stein and Michael L. Leventhal described a symptom complex due to anovulation.[2] Oligomenorrhea, hirsutism and obesity together with enlarged polycystic ovary were the diagnostic criteria of PCOS.

It is a complex clinical presentation and consists of a triad of oligomenorrhea, hirsutism and obesity, and is now recognized as a heterogeneous disorder that results in overproduction of androgens, primarily from the ovary, and is associated with insulin resistance. The first recognition of an association between glucose intolerance and hyperandrogenism was the famous report of the bearded diabetic woman by Archard and Thiers in 1921.[1]

PCOS may present with amenorrhea, infertility, features of hyperandrogenemia, signs of metabolic disturbances like insulin resistance, and dyslipidemia. These women are vulnerable to type II diabetes, dyslipidemia, premature arteriosclerosis, and endometrial carcinoma.[3,4]

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MATERIALS AND METHODS

This was a cross-sectional study conducted in the outpatient department of Obstetrics and Gynaecology at Manipal Teaching Hospital from January 2018 till June 2019 over 18 months period. A total of 90 patients presenting with oligomenorrhoea, obesity, acne, infertility and hirsutism were included in the study. The exclusion criteria were young women who had their menarche less than 2 years back, women older than 45 years, and patients on exogenous estrogen or progesterone therapy. Presence of at least two criteria from clinical, hormonal, and abdominal sonography were considered diagnostic of PCOS. Women with complaints of oligomenorrhea or amenorrhea, signs or symptoms of hyperandrogenism, abdominal ultrasonography showing at least 12 follicles (2-9 mm in diameter) arranged peripherally around a dense core of ovarian stroma or scattered throughout an increased amount of stroma were enrolled in the study. Detailed menstrual history, marital status, and parity were recorded. For the purpose of this study, all diagnoses were made by a consultant gynecologist in association with a senior radiologist. The study was approved by Institutional Review Committee.

Classification of BMI: <18.5 kg/m²: underweight, normal BMI: 18.5-24.9 kg/m², Overweight: BMI 25.0-29.9 kg/m², class I obesity: BMI 30-34.9 kg/m², class II obesity: BMI 35-39.9 kg/m² and class III obesity was considered as BMI ≥ 40kg/m2.[5]

Hirsutism was scored according to modified Ferriman Gallwey score.[6] Grading of severity was based on the score assessed as <4 - mild, 4-7 as moderate and ≥8 - severe.

The data was entered and analysis was performed using statistical package for the social sciences (SPSS, version 25). Mean value and percentages were calculated for various factors.

RESULTS

Out of 90 patients studied, 37(41%) were married and 53(59%) were unmarried. There were many patients from urban compared to rural areas (67% vs 33%).

Many patients were either overweight (22%) or obese (61%) and 6% of the patients were under weight.

Mean age at the time of presentation was 31.66 years with many patients (37%) between 30-35years age group.

Distribution of patients according to symptomatology: Majority of the patients were either oligomenorrhoeic or amenorrhoeic (78 %). Weight gain was present in 83% of the patients and many patients attributed it due to menstrual

Table 1: Classification of patients according to BMI

BMI	Numbers	%
<18.5; underweight	5	6
18.5-24.9; Normal	10	11
25-29.9; Overweight	20	22
>30: Obese	55	61

Table 2: Age distribution of patients

Age group	Numbers	Percentage
20-25	10	11
25-30	23	26
30-35	33	37
35-40	20	22
40-45	4	4

Table 3: Distribution of patients according to symptoms

Symptoms	Numbers	Percentage (%)
Oligo or Amenorrhoea	70	78
Infertility (out of 37)	30	81
Hirsuitism	20	22
Acne	25	28
Acanthosis Nigricans	30	33
Weight gain	75	83

problems. Infertility was present in 81% of the married patients. Hirsutism was present in 22% patients and acne was present in 28% patients. Acanthosis Nigricans was present in 33% patients which is a feature of insulin resistance.

Fifteen women (17%) had hypothyroidism and were receiving treatment for the same. Seven women (8%) had type 2 diabetes mellitus and were on oral hypoglycemics and five patients were on treatment for hyperprolactinaemia. Four patients had co-existing hypertension.

Ultrasonograpy was done in all the patients and typical necklace pattern of follicular arrangement was seen in 70 (78%) patients.

DISCUSSION

In this study, we have assessed the clinical presentation among the women diagnosed with PCOS according to the Rotterdam criteria in Gandaki province of Nepal. In our study, majority of the patients were less than 35 years indicating that PCOS is becoming more prevalent in younger population. It was more prevalent among urban people which could be attributed to lack of awareness among rural people and lack of gynaecologists and radiologists in rural areas to diagnose such patients. Normal ovulation results in regular menstrual cycles (28-35 days cycle). Anovulation is the pathognomic feature of PCOS and

results in irregular menstrual cycles. Therefore, persistent menstrual irregularities (resulting from anovulation) seem to be better predictor compared to biochemical parameters. Oligomenorrhea is one of the diagnostic criteria of PCOS. In the present study 78% patients complained of oligomenorrhea or amenorrhoea [Table 3]. Balen et al have reported that menstrual disturbances were seen in 72% of the PCOS women which is comparable to our study. Among them oligomenorrhoea (60%) was the commonest followed by amenorrhoea (11%).[7] In the present study, 81% married PCOS women complained of infertility [Table 3]. Pfeifer SM have also mentioned infertility as one of the long-term sequalae of PCOS.[8] Obesity is common in women who have PCOS. It increases the risk of metabolic dysfunction. Insulin resistance is worsened by presence of obesity. The prevalence of obesity in these women varies. Obesity is not essential to make the diagnosis of PCOS.[9] The results of present study show that PCOS was present in both obese (83%) and non-obese (17%) subjects. In developing nations, obesity is mainly caused by sedentary lifestyle, physical inactivity and consumption of high calorie rich foods. Nepal is currently observing a rise in the number of individuals in the middle-class who are detected with obesity. Obesity is highly observed in the PCOS patients.[10] Lim et al in a systemic review and meta-analysis concluded that women with PCOS had a greater risk of overweight, obesity and central obesity.[11] The drawback of this study was that it was done in a small sample size and hormonal analysis could not be done in all the subjects and it was not included in the study and clinical and radiological parameters were considered for the diagnosis of PCOS.

CONCLUSION

The diagnosis of PCOS can be reliably predicted with the help of clinical features and sonography in women according to Rotterdam criteria. Oligomenorrhoea or amenorrhea and weight gain were main symptoms in our patients. Prevalence of PCOS in infertile population was significantly high. Though obesity is common in PCOS, non-obese women are also at risk of PCOS. There is a need to increase awareness regarding role of obesity as well as of acanthosis nigricans as very few patients were aware of their abnormal BMI and skin discoloration. PCOS is becoming a major cause of infertility in women. It is important to educate and make unmarried PCOS patients aware of its association with infertility and long-term medical problems.

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