

# Clinical profile of patients with polycystic ovarian syndrome in Nepal

## Abstract

**Background:** Polycystic Ovarian Syndrome is a common gynecological endocrinopathy characterized by chronic an ovulation and hyperandrogenism. The disorder is heterogeneous and is one of the most common treatable causes of infertility.

**Objectives:** To evaluate the clinical, biochemical and hormonal profile of patients with PCOS in Nepalese patients.

**Methodology:** A retrospective analysis of the clinical data and hormonal profile of patients with Polycystic Ovary Syndrome at Kathmandu Diabetes and Thyroid Center Pvt Ltd, Lalitpur, Nepal was undertaken.

**Results:** The mean age of 80 patients in this study group was  $24 \pm 6$  years. Menstrual irregularity was the most common presenting problem occurring in 83% patients, followed by infertility (43%) and hirsutism (33%). Hyperandrogenism was demonstrated in 82%. USG feature of Polycystic Ovarian Syndrome was apparent in 60% patients. The mean Body Mass Index was  $27.4 \pm 5.1$  kg/m<sup>2</sup>. Diabetes, hypertension and hypothyroidism were noted among 2%, 4% and 30% of the patients respectively.

**Conclusion:** Our study concluded that menstrual irregularity was the most common presenting problem of Polycystic Ovarian Syndrome in our patient population. The condition is treatable and should be considered in patients presenting with infertility.

**Keywords:** amenorrhea, infertility, oligomenorrhea, polycystic ovarian syndrome, ovulatory, patients, syndrome, carcinoma, PCOS

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## Introduction

Polycystic ovarian syndrome (PCOS) is the most common form of chronic an ovulation prevalent in reproductive aged women; it affects nearly 5-10% of women in child bearing ages.<sup>1</sup> PCOS is a heterogeneous disorder with uncertain etiology and is characterized by androgen excess and polycystic ovaries. Ovulatory dysfunction is the most prominent clinical feature observed in PCOS. Hirsutism and acne may develop in some patients. The diagnosis of PCOS is made if two of the three criteria of androgen excess, ovulatory dysfunction, or polycystic ovaries are met.<sup>2</sup> PCOS is associated with increased reproductive morbidity, including infertility, irregular menstruation and increased pregnancy loss.<sup>3</sup> The etiology of PCOS is unknown but has significantly been associated with diabetes, risk for cardiovascular disease and endometrial carcinoma.<sup>4-6</sup> This study has been conducted to assess the clinical and biochemical profile of Nepalese patients with PCOS.

## Methods

A retrospective study was conducted between a period of March 2013 and October 2014, at Kathmandu Diabetes and Thyroid Center Pvt. Ltd., Lalitpur, Nepal, in which the data of patients diagnosed with PCOS were analyzed. A total of 80 patients were taken into consideration. Parameters such as age, BMI, hirsutism, ovulatory dysfunction, co-morbid conditions, concentration of serum androgen

and USG of the patients were evaluated in the study. Hirsutism was evaluated using Ferriman Gallwey (FG) score.<sup>7</sup> Polycystic ovaries were established when at least one of the ovaries demonstrates ovarian volume greater than 10 cc or 12 or more follicles measuring 2-9 mm in diameter.<sup>2</sup> A Serum testosterone level of 55ng/dl was considered as a cut-off value for detection of hyperandrogenism. The data was entered and statistical analysis performed using Statistical Package for the Social Sciences (SPSS, version 21). Mean value and percentage were evaluated for PCOS.

## Results

In this study group of 80 patients, the mean age at the time of presentation was  $24 \pm 6$  years, with 59% of the patients in the age group of 20-29 years. About 46% were married and 54% were single. Menstrual irregularity was observed in 83% of the patients, while the remaining patients had normal menses. Hirsutism was noted in 33%, acne in 13% and infertility in 43% (Table 1). The mean Body Mass Index (BMI) was  $27.4 \pm 5.1$ kg/m<sup>2</sup> (Table 2). About 2% of the patients were diabetic while 4% of the patients had hypertension. Hypothyroidism was observed in 30% of the patients. USG data on ovaries was available only for 69% patients. Among these, USG appearance of PCOS was observed in 60% patients. Total testosterone was elevated in 82% patients. Elevated level of prolactin was observed in 19%.

**Table 1** Characteristics of Patients with PCOS

Character	Mean	Percentage
Age	24 ± 6 years	
Marital Status		
Married		46%
Single		54%
Hirsutism		32.5%
Menstrual Irregularity		83%
Infertility		43%
Acne		13%
BMI (kg/m <sup>2</sup> )	27.4 ± 5.1	
DM		2%
HTN		4%
Hypothyroidism		30%
Hyperprolactinemia		19%
Elevated Total testosterone		82%
USG features of PCOS		60%

**Table 2** Frequency of obesity in PCOS patients

BMI (kg/m <sup>2</sup> )	Frequency (%)
Underweight (<18.5)	7
Normal (18.5-24.9)	24
Overweight (25-29.9)	36
Obese (>30)	33

## Discussion

Clinically diagnosing a woman as having PCOS implies an increased risk for infertility, dysfunctional bleeding, endometrial carcinoma, obesity, Type-II diabetes, hypertension, dyslipidemia, and possibly cardiovascular disease.<sup>8</sup> In our study, the mean age of the patients with PCOS was 24 years indicating that it is a disease mainly of the young age. Menstrual irregularity was observed in 83% of our patients while study conducted by Vrunda Dhagat reported 65% in the same.<sup>9</sup> The frequency of hirsutism was comparable to that noted in Chinese women (35%), while acne was present only in 13% patients, as compared to 45% in the Chinese study group.<sup>10</sup> Apparently, 57% of the married patients were fertile even though only 25% reported worldwide.<sup>11</sup> Yet the overall prevalence of infertility could still be higher because most of the patients in this study were single (54%).

In this study, obesity and overweight BMI groups were observed to be 33% and 36%. This is quite different in comparison to 57% and 24% noted in a study in Libya<sup>12</sup> and may indicate a lower BMI cut off values of 24 kg/m<sup>2</sup> for the risk of diabetes and other metabolic diseases in the South Asian population. Diabetes was observed only in 2% of the patients which is less than that reported in Asian women (17%).<sup>13</sup> This may be from the use of simple diagnostic tools rather than the use of glucose tolerance tests or HbA1C tests for diagnosis of the disease. Hypertension was reported only in about 4% patients, which is identical from the data observed in Libya (4%).<sup>12</sup> Hypothyroidism was observed in 30% of the patients. This is 10 times more than that

that reported from Libya (3%).<sup>12</sup> Hyperprolactinemia was noted in 19% patients. This observation is similar to the 16.2% prevalence reported by another study.<sup>14</sup>

As this is a retrospective study, certain limitations have to be noted. The study failed to mention metabolic abnormality such as dyslipidemia which is an important indicator for possible cardiovascular diseases. However, this study, for the first time shows the various mode of clinical presentation and biochemical profile of patients with PCOS in Nepal.

## Conclusion

PCOS not only is the most frequent cause of an ovulation, but is also associated with characteristic metabolic disturbances that may have important implications for the long term health. Our study, despite being of retrospective nature, concluded that menstrual irregularity and infertility are the major clinical presentations of PCOS. Yet, similar studies on a large scale would definitely be helpful to provide a more accurate picture of the disease.

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## Conflicts of interest

The author declares there is no conflict of interest.

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