

# Frequency of Polycystic Ovarian Disease in Sub-fertility in DHQ Teaching Hospital DG Khan

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## ABSTRACT

**Aim:** To find the frequency of polycystic ovarian disease in sub-fertility.

**Methods:** This descriptive study was carried out in DHQ Teaching Hospital, Dera Ghazi Khan from January 2010 to December 2012. A total of two hundred cases of sub-fertility were recruited in the study from Gynae OPD of DHQ Teaching Hospital DG Khan.

**Results:** This study was conducted at DHQ Teaching Hospital DG Khan. The aim was to find the frequency of polycystic ovarian disease in sub-fertility out of 200 cases of sub-fertility, 50 patients were found to have clinical suspicion of PCOD. Most of the patients presented with PCOD were 25-30 year old having 67% of primary sub-fertility while 33% had secondary sub-fertility. The obesity had an inverse relationship with fertility. In PCOD BMI >30 was associated with anovulation. 62% of the patients had transabdominal evidence of disease and transvaginal ultrasonography revealed it in 84% of cases. High LH:FSH ratio was found in 76% of cases. High prolactin was seen in 36% and anovulatory cycles were found in 80% of cases. Other patients with PCOD are more prone to insulin resistance leading to impaired glucose tolerance.

**Conclusion:** This anovulatory in PCOD is the major contributing factor causing sub-fertility globally. Ovulation was induced with clomiphene citrate.

**Keywords:** Polycystic ovarian disease, Polycystic ovarian syndrome, Sub-fertility

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## INTRODUCTION

Hirsutism was defined as the growth of terminal hair at androgen secreting sites. Demonstration of galactose level was noted<sup>1</sup>. Hormonal profile regarding luteinizing hormone (LH), follicle-stimulating hormone (FSH) and prolactin were performed. Assessment of ovulatory was done by day 21. Serum progesterone level, androgens were not investigated in all cases and are not included in the study. LH:FSH ratio was calculated and was considered high if it was more than 2:1<sup>2</sup>. The women underwent ultrasonography both transabdominal and transvaginal. Ovarian size with peculiar morphology of peripherally arranged fluid filled follicles, 10 in number and 2-8mm in size was assessed. The hormone levels were assessed against clinical and sonographic evidence of PCOD. The ovarian function was then divided in to two groups, ovulatory cycles and anovulatory cycles<sup>3</sup>. Other causative factors of sub-fertility like male factors and tubal factors were excluded by husband semen analysis and hysterosalpingography respectively<sup>4</sup>.

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## SUBJECTS AND METHODS

This descriptive study was carried out in DHQ Teaching Hospital, Dera Ghazi Khan from January 2010 to December 2012. A total of two hundred cases of sub-fertility were recruited in the study from Gynae OPD of DHQ Teaching Hospital DG. Khan.

## RESULTS

This study was conducted at DHQ Teaching Hospital, Dera Ghazi Khan. Out of 200 cases of sub-fertility 50 patients were found to have clinical suspicion of PCOD. Most of the patients presented with PCOD were 25-30 years old. Menstrual irregularities and hirsutism were standing at the top. PCOD was found to be responsible for primary sub-fertility in 2/3<sup>rd</sup> of cases while 1/3<sup>rd</sup> had secondary sub-fertility. Ultrasound is an important diagnostic tool for sub-fertility. Transvaginal ultrasonography reveals pelvic abnormality more clearly than transabdominal ultrasound. PCOD. Table 1 shows the etiological factors of subfertile globally. Menstrual irregularities and hirsutism were common in all (Table 2). The obesity had an inverse relationship with fertility. In PCOD BMI >30 was associated with anovulation (Table 3). Table 4 shows LH:SH ratio to be raised in 75% of patients having clinical suspicion of PCOD. LH:SH ratio was found to be raised in 72% of patients having clinical suspicion of PCOD. Clomiphene citrate is the drug of choice for induction ovulation as shown in table 5. Table 6 shows that obese patients

with PCOD are more prone to insulin resistance leading to impaired glucose tolerance.

Table 1: Causes of sub-fertility

Causes	No.	%
Anovulation	68	68.0
Tubal factors	12	12.0
Male factors	15	15.0
Others	5	05.0

Table 2: Clinical features (n=50)

Clinical features	No.	%
Menstrual irregularities	39	78.0
Hirsutism	35	70.0
Galactorrhoea	16	32.0
Obesity	20	40.0
Acne	11	22.0

Table 3: Body mass index [BMI] (n=50)

BMI	No.	%
Healthy 18.5-25	10	20.0
Over weight 25-30	23	46.0
Obese 30-40	15	30.0
Very obese 40-70	2	04.0

Table 4: Hormonal profile (n=50)

Hormonal profile	No.	%
Raised LH	34	68.0
Reduced FSH	36	72.0
Prolactin	18	36.0

Table 5: Type of assistance for previous conceptions

Type	No.	%
Clomiphene	13	80.0
Overian drilling	4	20.0
GnRH	-	-

Table 6: Glucose metabolism impairment (n=50)

Results	No.	%
Normal	30	60.0
Impaired glucose tolerance	18	36.0
Frank diabetes	02	04.0

## DISCUSSION

On seven women with polycystic ovaries and amenorrhoea in 1934 in an article that has become a classic description of the syndrome that eventually born their name<sup>5</sup>. Swanson and Co-workers<sup>6</sup> were the first to diagnose polycystic ovaries in 22 of 843 women seen for pelvic ultrasound in an academic radiology unit. Polycystic ovarian disease is a complete endocrine syndrome characterized by chronic anovulation, hyperandrogenism and sub-fertility. It was associated with peculiar ovarian morphology and symptoms like oligomenorrhoea, hirsutism, acne, dysfunctional uterine bleeding, fertility deprivation and perhaps recurrent miscarriages<sup>7</sup>. Polycystic ovarian disease is one of

the common endocrine disorders affecting the women in reproductive age group. Present study was aimed to find the frequency and severity of PCOD in sub-fertility.

The prevalence of polycystic ovarian disease in sub-fertility was found to be 22% by Polson.<sup>8</sup> It accounts for 25-30% of fertility problem in women and is responsible for 15% of overall fertility deprivation<sup>9</sup>. The present study showed the frequency of polycystic disease in sub-fertility to be 25% which confirms not only to published data but also to a local study by Nazir at Islamabad<sup>10</sup>. Hyperandrogenism either biochemical or clinical must be evident for a diagnosis of polycystic ovary syndrome. Hypertension of LH occurs in a pulsatile fashion in 40-70% of cases, associated with relative deficiency of FSH. The obesity in polycystic ovaries is associated with hyperinsulinemia, which leads to hyperandrogenemia and it's manifestation like menstrual irregularities, hirsutism, galactorrhea and obesity.

Among these symptoms, menstrual irregularities and hirsutism stand at the top i.e., 78% and 70% respectively in this study. This was very similar to descriptive study of 1741 women with PCOS in which 30% of patients had regular menses, 66% had amenorrhoea or oligomenorrhoea and 70% complained of hirsutisms.<sup>11</sup> According to Eden, all cases of hirsutism should be investigated for PCOS.<sup>12</sup> Obesity defined in present study as BMI>30. It was noticed that 45% cases had BMI 25-30 while 30% had a BMI>30 while Taylor found obesity in 35-50% of cases with PCOD. It was found that obese women with PCOS were more likely to be hirsute and anovulatory<sup>13</sup>.

Among investigations, ultrasonography both trasabdominal and transvaginal are important tools for PCOD. In present study, 62% cases had ovarian morphology, on transabdominal ultrasonography, consistent with PCOD while in another study by Hanne it was reported in 71% of cases<sup>14</sup>. Transvaginal ultrasonography because of closer look has a high concordance with surgical and biochemical diagnosis. Present study had 84% detection rate on tranvaginal ultrasonography as compare to Fox who had 100% detection rate<sup>15</sup>.

The hormonal status of women with PCOS and its impact on ovulation had been studied. Hypersecretion of LH was associated with anovulation and early miscarriages. In present study high LH and raised LH:FSH ratio was found in 76% of cases. Hyperprolactenemia was found in 36% of cases while Futterweite reported up to a 27% prevalence of raised serum prolactin level in 394 cases of PCOD<sup>16</sup>.

When assessed for ovulation, it was found that 80% cases had anovulatory cycles in this study and only 20% were ovulatory. PCOD has long term consequences on the health of women. The obesity is associated with insulin resistance and hyperlipidemia. The obese patients with PCOD were more prone to have type-2 insulin dependent diabetes mellitus in older age group. When tested for glucose tolerance, 35% of cases with PCOD had impaired glucose tolerance in present study. In two large cohort studies it was identified in 39-45% of women, who underwent oral glucose tolerance tests.<sup>17</sup> Proper, precise and thorough evaluation of ovarian function on the basis of classical, sonographic and biochemical parameters is really helpful to lay down a suitable management protocol for these patients. This would really be helpful in achieving reproductive success and avoiding long term hazard of PCOD.

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