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A STUDY ON PREVALENCE OF POLYCYSTIC OVARY SYNDROME AT A TERTIARY CARE HOSPITAL

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ABSTRACT: The main objective of the study was to assess the prevalence of polycystic ovary syndrome at a tertiary care hospital. This study was a prospective observational study performed for a period of 6 months in infertility and gynecology clinic. For making a positive diagnosis of PCOS, all subjects were interviewed to furnish details of menstrual history including regularity, duration of cycles, and number of cycles per year or intermenstrual interval. Transabdominal ultrasonography and tests like Tests like fasting blood glucose, fasting insulin, follicle stimulating hormone (FSH), luteinizing hormone (LH), LH:FSH ratio and serum testosterone were performed. A total two hundred eight patients were attended infertility and gynecology clinic during the study period of six months, of which 67 (32%) patients were meeting the study criteria were included and assessed for the presence of polycystic ovary syndrome. Of the 67 patients, 57 patients experienced oligomenorrhea and remaining 10 patients had amenorrhea. 32 patients had hirsutism, 18 patients had acne and 4 patients had alopecia.Transabdominal ultrasonography showed the presence of polycystic ovaries in all 67 patients. Hence, the prevalence of PCOS at a tertiary care hospital was 32%.

INTRODUCTION: Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders in women of reproductive age, affecting about 6.5–6.7% of all premenopausal women [1, 2]. The disorder originally described as cystic disease of the ovaries by Stein & Levanthal[3] is now considered to be associated with a barrage of endocrine and metabolic disturbances such as hypertension, impaired glucose tolerance (IGT), type 2 diabetes mellitus, coronary artery disease, increased risk of endometrial and perhaps breast cancer [4].

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The main endocrine derangements responsible for the clinical manifestations were hyperandrogenemia and abnormal insulin response to glucose [5, 6]. Insulin resistance (IR)/hyperinsulinemia in PCOS being the main pathogenic defect is also supported by clinical, biochemical, and hormonal response to insulin sensitizers[7].Women with PCOS are at an increased risk for infertility, preeclampsia, early pregnancy loss, and endometrial cancer. Hence, the study has been conducted to assess the prevalence of PCOS at a tertiary care hospital.

MATERIALS AND METHODS:

The study was a prospective observational study performed for a period of 6 months in infertility and gynecology clinic at SRM Medical College Hospital and Research Institute, Kancheepuram, Tamilnadu, India. Inclusion Criteria like women between 18 to 35 years of age with PCOS defined

by Rotterdam criteriai) clinical and/or biochemical hyperandrogenism, ii) oligo-anovulation, and iii) polycystic ovaries on ultrasonography. Exclusion criteria like adrenal hyperplasia, thyroid dysfunction, hyperprolactinemia, cushing's syndrome, severe hepatic or kidney diseases.

The patients were enrolled into the study based on inclusion and exclusion criteria. Informed consent was obtained from the patient. Patients were subjected to detailed history, clinical examination, hormonal and ultrasonographic evaluation. For making a positive diagnosis of PCOS, all these subjects were interviewed to furnish details of menstrual history including regularity, duration of cycles, and number of cycles per year or intermenstrual interval.

The diagnosis of PCOS on transabdominal ultrasonography was based on the presence of 12 peripheral follicles each 2–9 mm in diameter in one or both ovaries, increased ovarian volume (10 cm^3) on one or both sides. Tests like fasting blood glucose, fasting insulin, free testosterone, follicle stimulating hormone (FSH), luteinizing hormone (LH), LH: FSH ratio and serum testosterone were performed on second day of the menstrual cycle and the statistical analysis was performed. Based on above parameters, the prevalence of PCOS was assessed.

RESULTS AND DISCUSSION:

A total two hundred seven patients were attended infertility and gynecology clinic, of which 67 (32%) patients had PCOS. **Table 1** shows Mean±SD of various parameters. Of the 67 patients, 31 patients were in the age group of 18-25 years, 32 patients were in the age group of 26-30 years and 5 patients were in the age group of 31-35 years.

Majority of the patients included in the study were overweight and obese patients. Out of 67 patients, 57 patients experienced oligomenorrhea and remaining 10 patients had amenorrhea. Of this 67 patients, majority of the patients (32 patients) had hirsutism measured by Ferriman Gall way score which was ≥7. 15 patients had acne and 4 patients had alopecia. Transabdominal ultrasonography showed the presence of polycystic ovaries in all 67 patients. The mean± SD of LH, FSH, LH: FSH and serum testosterone were 12.2±4, 9±1.7, 1.3±0.6 and 2.8±0.7. From the result, it was clear that nearly 32% of women were suffered from PCOS. PCOS have a markedly increased risk of developing type 2 diabetes [8, 9].

Hence, it is important to treat PCOS. Heather R. Peppard concluded that PCOS occurs frequently among premenopausal women with type 2 diabetes[10]. Nidhi R et al proved that Prevalence of PCOS in Indian adolescents was 9.13%[11].

TABLE 1: SHOWS MEAN±SD OF VARIOUS PARAMETERS

Parameters	Mean±SD (n=67)
Age	25±6
BMI (kg/m^2)	28±7
Ferriman Gallway Score	12
LH (mIU/ml)	12.2±4
FSH (mIU/ml)	9±1.7
LH:FSH	1.3±0.6
Serum Testosterone (nmol/l)	2.8±0.7

Other studies on Asian population have reported lower prevalence rates: 6.3% in Sri Lankan population[12] and 2.4% in Chinese population. Higher prevalence in India as compared to other Asian countries could be expected because strong etiological link between PCOS and diabetes, and India has the higher prevalence of diabetes. Polycystic ovarian syndrome (PCOS) is the most common female endocrine disorder with a highly variable prevalence estimates, ranging from 2.2% to 26% [13-17]. March WA et al conducted a study on Australian population and showed a prevalence of 11.9%[18].

CONCLUSIONS: From the result, it was clear that prevalence of PCOS at a tertiary care hospital was 32%. Hence, it is important to consider and treat PCOS in order to prevent the risk for developing type 2 diabetes, dyslipidemia, hypertension, and heart diseases.

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