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Research Article

A PROSPECTIVE STUDY OF PREVALENCE OF PCOD IN PATIENTS VISITING OPD OF GOVT GENERAL HOSPITAL

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Abstract

Introduction: Polycystic ovarian syndrome (PCOS) is an endocrine disorder among women of reproductive age group characterized by hyperandrogenism, increased Luteinizing Hormone: Follicle Stimulating Hormone ratio, impaired glucose tolerance, insulin resistance. Other symptoms include menstrual irregularities, acne, anxiety, weight gain, hirsutism, alopecia. Immaturity of hypothalamic-pituitary-ovarian axis in girls causes anovulation due to suboptimal FSH and LH production causing irregular menses in the early years of menarche. This state corrects on its own after few years resulting into regular ovulatory cycles as the H-P-O axis matures. In some young girls however anovulation persists and continues as chronic anovulation. The resulting hyperestrogenism, leads to hyperandrogenism.

Materials and methods: A total number of patients 240 who were diagnosed as PCOD on the basis of Rotterdam's criteria attended the gynaecology OPD in RIMS, Ranchi were selected by purposive sampling. The women included in the study belonged to the age group of 14–30 years. The patients complaining of menstrual problems, anxious to conceive, were taken into consideration. As per the Rotterdam's criteria, USG reports, signs and symptoms of hyperandrogenism, irregular period/oligo-anovulation are included in the inclusion criteria. Ethical committee permission was taken. Hirsutism, BMI, menstrual history and other features of hyperandrogenism and insulin resistance were studied. The different aspects of the prevalence of PCOD are studied.

Results: The total number of patients in the study was 240. The diagnosis was made as per Rotterdam's criteria. Exclusion criteria are congenital adrenal hyperplasia, hyperprolactinemia, thyroid disorder, Cushing syndrome and androgen secreting tumours. PCOD is a common disorder and a diagnosis of exclusion. 150 women were unmarried and 90 married. 4 of the women had subclinical hyperandrogenism. 140 women have DHEA increased. FSH: LH

ratio > 2:1 seen in 168 women. Testosterone was normal in 150 patients, elevated in 90 patients. Testing done in 240 patients. 150 patients were obese. 30 patients were overweight and 50 had normal weight and 10 had below normal weight. Diabetes was noted three women. Impaired glucose tolerance was noted in thirty-six women.

Conclusion: PCOD leads to many complications like diabetes, Metabolic X syndrome, cardiovascular complications, breast cancer, endometrial cancer and depression. The type 2 DM is seen in individuals who have risk factors like obesity, lack of exercise, carbohydrate diet and especially young PCOD women who attend infertility clinics with history of irregular menses and hirsutism. Such cases need regular screening to prevent the onset of Metabolic X syndrome, Type 2 DM, Stroke, IHD, CA Breast, CA endometrium, sleep apnoea, depression and bipolar disorders.

Key Words: Polycystic ovarian syndrome, FSH, LH, adrenal hyperplasia, hyperprolactinemia.

INTRODUCTION

PCOS is an endocrine disorder among women of reproductive age group characterized by hyperandrogenism, increased Luteinizing Hormone: Follicle Stimulating Hormone ratio, impaired glucose tolerance, insulin resistance. Other symptoms include menstrual irregularities, acne, anxiety, weight gain, hirsutism, alopecia. Immaturity of hypothalamic-pituitary-ovarian axis in girls causes anovulation due to suboptimal FSH and LH production causing irregular menses in the early years of menarche. This state corrects on its own after few years resulting into regular ovulatory cycles as the H-P-O axis matures. In some young girls however anovulation persists and continues as chronic anovulation. The resulting hyperestrogenism, leads to hyperandrogenism.[1]

The World Health Organization estimates that PCOS has affected 116 million women worldwide as of 2010 (3.4% of the population).[2] The prevalence of PCOS depends on the choice of diagnostic criteria. Most prevalence studies in India and recently a few studies among adolescents in schools report prevalence of PCOS as 9.13% to 36%.[3] Apart from these problems, PCOS has serious complications like infertility also. Women with PCOS are at an increased risk of developing type 2 Diabetes, dyslipidemia, heart diseases. Also, a Danish cohort study conducted in 2015 published that the prevalence of endometrial carcinoma increases fourfold in PCOS affected women.[4]

Even today there is a general lack of awareness regarding the condition in India and it often remains undetected for years. The mainstay of treatment is regular exercise, weight control and oral contraceptive pills. Therefore to reduce the incidence of PCOS, most appropriate strategy would be to prevent its development which can be achieved only if majority of the women are aware of the disease and its future complications.

PCOD is the diagnosis of exclusion. A lot of other cases mimic PCOD wherein hirsutism is present. Hirsutism is the distribution of

sexual hair in the female like a male distribution pattern. Ferriman-Gallwey 12 score between 4-6 indicates hirsutism. It is also noted in adrenal hyperplasia, adrenal tumour, Cushing's disease, hyperprolactinemia, hypothyroidism and masculinising tumour of the ovary. When hirsutism is noted in an aggressive rapid growth, tumour has to be suspected. In such cases virilisation and masculinisation like increase in muscle mass, clitoromegaly, deepening of the voice, frontal balding, acne and breast atrophy are noted. Such changes are rarely seen in PCOD. Hair growth in a female androgen dependent which is from the adrenals and ovary. The free testosterone which is not bound to SHBG is biologically active and causes hirsutism.[5]

MATERIALS AND METHODS

A total number of patients 240 who were diagnosed as PCOD on the basis of Rotterdam's criteria attended the gynaecology OPD in RIMS, Ranchi were selected by purposive sampling. PCOD was defined as the presence of any two of the three features-

1. Oligo/amenorrhoea: absence of menstruation for 45 days or more and/or </= 8 menses per year.
2. Clinical hyperandrogenism: Modified Ferriman and Gallway (MFG) score of 6 or higher.
3. Polycystic ovaries: presence of 12 or more cysts, 2-8 mm in diameter, usually combined with increased ovarian volume of > 10 ml.

The women included in the study belonged to the age group of 14–30 years. The patients complaining of menstrual problems, anxious to conceive, were taken into consideration. As per the Rotterdam's criteria, USG reports, signs and symptoms of hyperandrogenism, irregular period/oligo-anovulation are included in the inclusion criteria Ethical committee permission was taken. Hirsutism, BMI, menstrual history and other features of hyperandrogenism and insulin resistance were studied. The different aspects of the prevalence of PCOD are studied.

Statistical Analysis

The data were entered into Microsoft Excel and analyzed using Epi info software for statistical analysis.

RESULTS

The total number of patients in the study was 240. The diagnosis was made as per Rotterdam's criteria. Exclusion criteria are congenital adrenal hyperplasia, hyperprolactinemia, thyroid disorder, Cushing syndrome and androgen secreting tumours. PCOD is a common disorder and a diagnosis of exclusion. 150 women were unmarried and 90 married. 4 of the women had subclinical hyperandrogenism. 140 women have DHEA increased. FSH: LH ratio > 2:1 seen in 168 women. Testosterone was normal in 150 patients, elevated in 90 patients. Testing done in 240 patients. 150 patients were obese. 50 patients were overweight and 30 had normal weight and 10 had below normal weight. Diabetes was noted three women. Impaired glucose tolerance was noted in thirty-six women.

	Number	Percentage
Multiple follicles on USG + oligo	40	16.7
Mf on USG + Oligo + Obesity + Acanthosis	26	10.8
Mf + oligo + obesity + acanthosis + hirsutism	26	10.8
Mf + oligo + obesity + hirsutism	40	16.7
Mf + oligo + obesity	40	16.7
Mf + oligo + acanthosis	28	11.6
Mf + oligo + hirsutism	40	16.7

Table 1: Polycystic Ovary Syndrome

BMI	Frequency	Percentage
<18	10	4.16
18-22.9	20	8.33
22.9-25	10	4.16
25-30	50	21
30-35	20	8.33
>35	130	54.16
Total	240	100%

Table 2: PCOS and BMI

Complaint	Present
Hirsutism	180
Oligomenorrhea	60
Amenorrhoea	40
Infertility	30
Acne	80
Acanthosis nigricans	40
Baldness	20
Obesity	150

Table 3: Clinical Features in PCOS

Age (years)	Frequency	Percentage
14-18	74	30.8%
19-22	64	26.6%
23-26	66	27.5%
27-30	16	6.6%
Above 30	20	8.3%
Total	**240**	**100%**

Table 4: Prevalence of PCOD in Various Age Groups

Menarche Age (Years)	Frequency	Percentage
11	6	2.5%
12	45	18.75%

13	91	37.92%
14	78	32.5%
15	20	8.33%
Total	240	100%

Table 5: Incidence of Age of Menarche in PCOD

DISCUSSION

The exact aetiology of PCOD remains obscure. It has got both environmental and genetic predisposition. Pathophysiology of PCOD is mainly due to disorder in the hypothalamo-pituitary-ovarian axis. It is a functional disorder as a result there is anovulation and it is a vicious cycle. Whether anovulation is a cause or result in PCOD is obscure. Not a universal diagnostic criterion for diagnosis of PCOD is available. Even obesity is considered as a genetic disorder and not an essential feature of PCOD, but adds on to the pathophysiology. The primary treatment for polycystic ovarian syndrome is to change the lifestyle with medication.[6]

The objective of the treatment is to reduce the insulin resistance by insulin sensitizers like Metformin. To tackle the problem of hirsutism and cosmetic issues like acne, baldness by offering them OCP having least androgen activity like Desogestrel, gestodene, norgestimate. Drospirenone newer progestins are preferred. Epilation methods like waxing, threading and plucking. Electrolysis or laser is preferred but needs repeated visits to the beauty clinic. The drugs which inhibit 5-alpha-reductase namely Finasteride and anti-androgens like Flutamide, Spironolactone and Cyproterone acetate are useful. The eflornithine hydrochloride cream is recommended.[7]

The lifestyle modification is important as PCOD is associated with obesity and overweight. The diet plan is almost similar to the diabetic patient. The meal consists of fresh vegetables, fruits and whole grain. The micronutrients and vitamins are given importance. The treatment is based on the complaints and the scenario. In case of infertility it can be tackled with letrazole, ovulation induction drugs. But one has to be careful about ovarian hyper stimulation syndrome. So, a follow up of the follicular study by USG is mandatory.[8]

For the menstrual disorders, hyperandrogenism to increase the sex hormone binding globulin, Oral contraceptives and metformin are the drug of choice.[9] Although other insulin sensitizers like glitazones have equal effect, Metformin is the drug of choice because in case the patient becomes pregnant there is no teratogenic effect on foetus. The drug can be continued during pregnancy and it does not cause hypoglycaemia. It does not require the estimation of serum level of drug during the therapy.[10]

CONCLUSION

The type 2 DM is seen in individuals who have risk factors like obesity, lack of exercise, carbohydrate diet and especially young PCOD women who attend infertility clinics with history of irregular menses and hirsutism. Such cases need regular screening to prevent the onset of Metabolic X syndrome, Type 2 DM, Stroke, IHD, CA

Breast, CA endometrium, sleep apnoea, depression and bipolar disorders.

In order to prevent the sequelae of the PCOD, catch them young to change the lifestyle and diet, insist on exercise, and maintain the BMI which will prevent complications. In future regular screening should be offered by the government and also the private NGOs to provide free, regular screening for PCOD patients.

These patients are very young adults and need counseling, education, explanation, empathetic approach and support to deal with this disease causing complex multiple organ-system dysfunction.

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