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Research Article

A prospective cross sectional observational study on prevalence of clinical manifestations and hormonal abnormalities associated with polycystic ovarian disease

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ABSTRACT

Polycystic ovarian disorder (PCOD) is the most common hormonal disorder seen in females of reproductive worldwide. From the very limited data, PCOD prevalence in India ranges from 3.7% to 22.5%. Polycystic Ovarian disease requires "control" rather than "cure", the treatment decisions depend on symptoms, age, whether or not the women want to become pregnant. **Aim:** To study the prevalence of clinical manifestations and hormonal abnormalities associated with PCOD. **Methodology:** This prospective observational study was carried out in gynaecology department of Mallareddy hospital, where subjects were enrolled based on inclusion and exclusion criteria. All 100 patients demographics were documented. The prevalence of clinical manifestations and hormonal abnormalities in all subjects were assessed. **Results:** Irregular menstruation was seen as the most common clinical manifestation and seen in maximum 66% of subjects, Hirsutism was seen in 35% of the cases followed by acne in 28% of cases , androgenic alopecia in 22% of cases and acanthosis nigricans in minority 7% of cases .When the subjects were assessed for hormonal abnormalities, 52% of the subjects showed decreased FSH, 48% of the subjects had increased LH**,** 9% had decreased and 33 % had increased PRL, 38% showed increased Testosterone**,** 21% had decreased and 7% had increased T_3, T_4 levels. **Conclusion:** Irregular menstruation was seen as the most common clinical manifestation followed by dermatologic manifestations – Hirsutism, Acne, Acanthosis nigricans and androgenic alopecia. Clinical manifestations diagnosis can lead to early treatment in these patients and helps them in relieving their symptoms and improve quality of life.

Key words: Polycystic ovarian disease, Clinical manifestations, Hormonal abnormalities.

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INTRODUCTION

It is a common hormonal disorder which occurs in women of the childbearing age group age (15-44). The name polycystic ovarian disease describes the numerous small cysts (fluid- filled sacs) that form in the ovaries. The disturbance in ovulation process alters levels of hormones like Testosterone, progesterone, FSH, and LH.[1] The exact cause isn't known. Factors that play a role include Excess insulin, Low-grade inflammation, Excess androgen**,** Heredity. The signs and symptoms includes, Irregular periods or no periods) at all, Difficulty getting pregnant Excessive hair growth, Heavy menstrual bleeding, Weight gain, Thinning hair and hair loss from the head. [2] Oily skin or acne, Dermatologic manifestations of hyperandrogenism, chieflyhirsutism, acne vulgaris, androgenic alopecia, and acanthosis nigricans, are among the cardinal manifestations of PCOD. [3] The diagnosis includes Physical examination, History of PCOD, Pelvic ultrasonography. Gonadotropin hormones level (FSH, LH)- Testosterone levels, Fasting insulin, Serum Prolactin, Serum TSH, T_3, T_4, Fasting glucose, Total, HDL, and LDL cholesterol levels as well as triglyceride levels, Endometrial biopsy.[3] Treatment includes medications like Oral contraceptive (Ethynylestradiol and noregistimate, Medroxyprogesterone), Ovulation inducing agents (clomiphene citrate), Anti androgens (spironolactone), Insulin sensitizing agents (metformin), Hair removal medications Eflornithine cream.[3] PCOD can be prevented by Weight loss, Physical exercise at least 3 days a week can help women in lose weight. Losing weight with exercise also improves ovulation and insulin levels. Consume a diet of low Glycaemic index (low GI index), Reduce intake of fats and simple sugars, Pranayama practise.[3][2]

METHODOLOGY

This prospective observational study was carried out in gynaecology department of Mallareddy hospital, where subjects were enrolled based on inclusion and exclusion criteria. All 100 patients demographics were documented. The prevalence of clinical manifestations and hormonal abnormalities in all subjects were assessed.

RESULTS

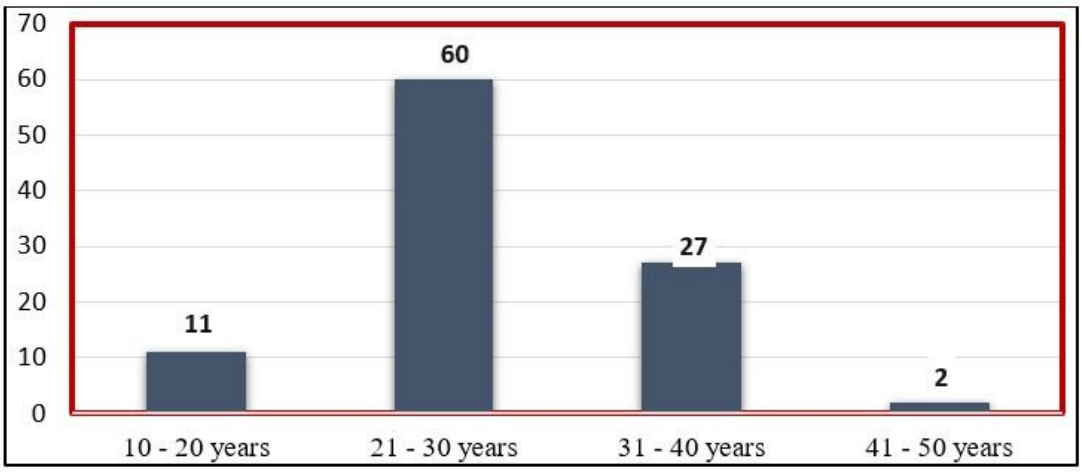

Fig 1: Age Wise Distribution Of subjects

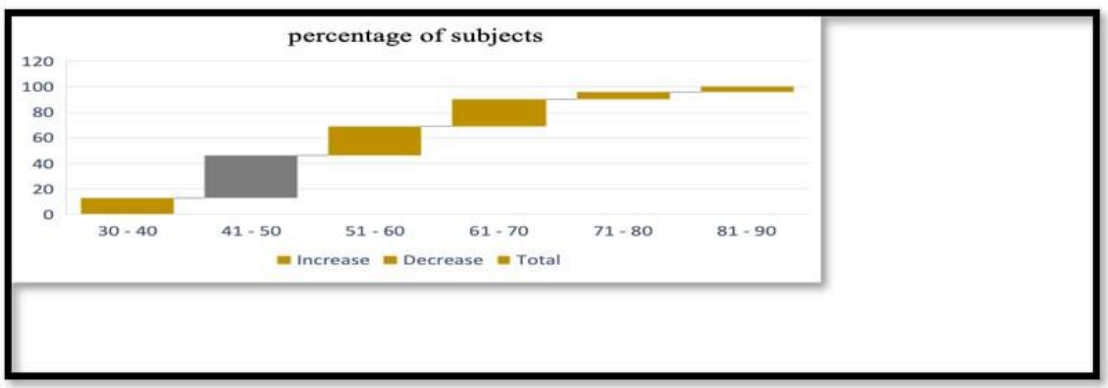

Fig 2: Body weight wise Distribution of Subjects:

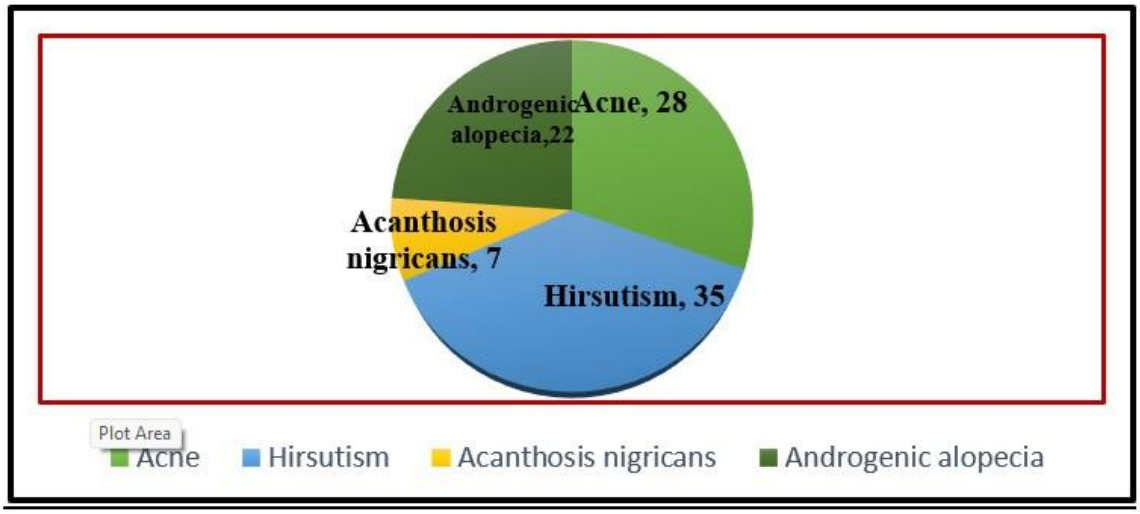

Fig 3: Prevalence of Cutaneous Cardinal manifestations of PCOD in Subjects

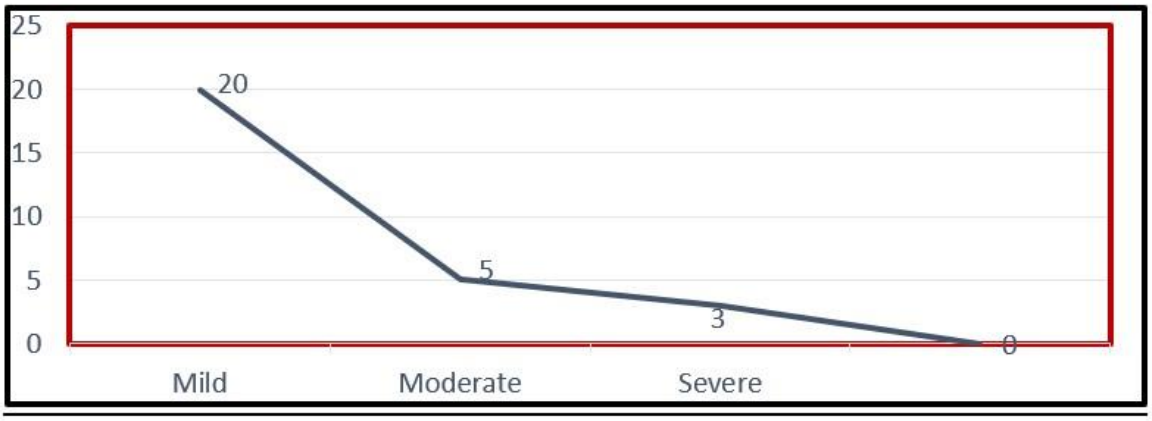

Fig 3.1: Subject distribution based on acne severity

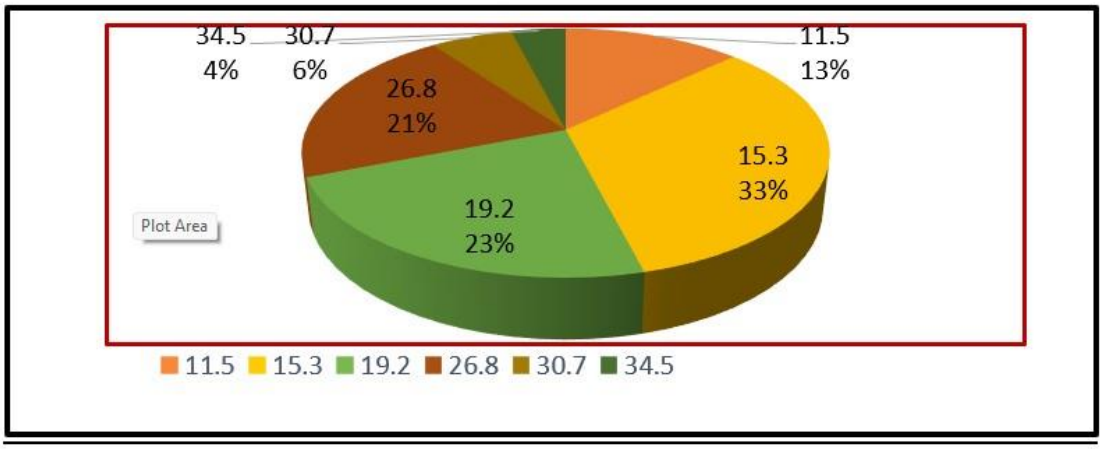

Fig 4: Categorization of subjects based on their BMI

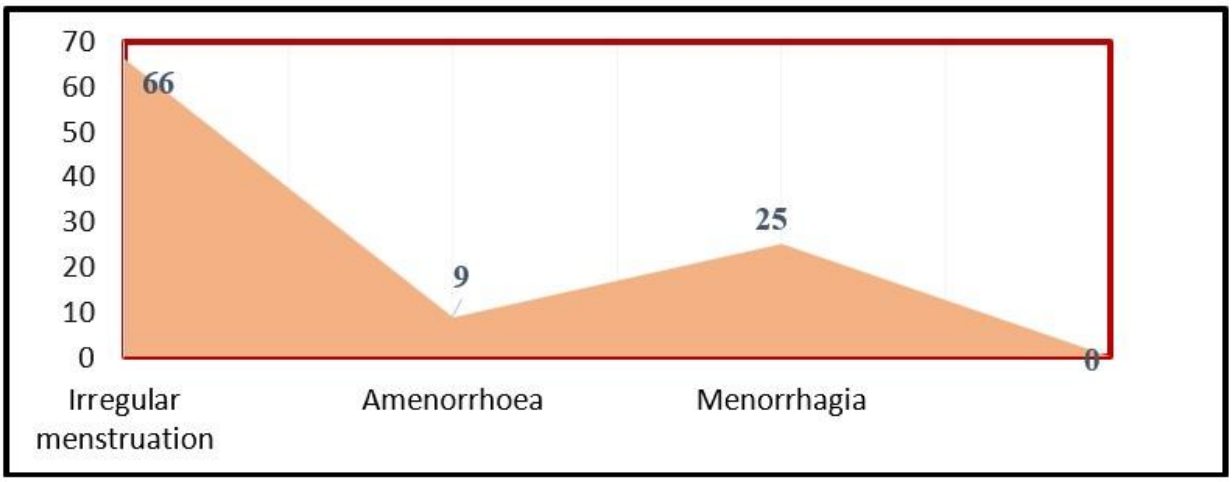

Fig 5: Menstrual Disorders prevalence

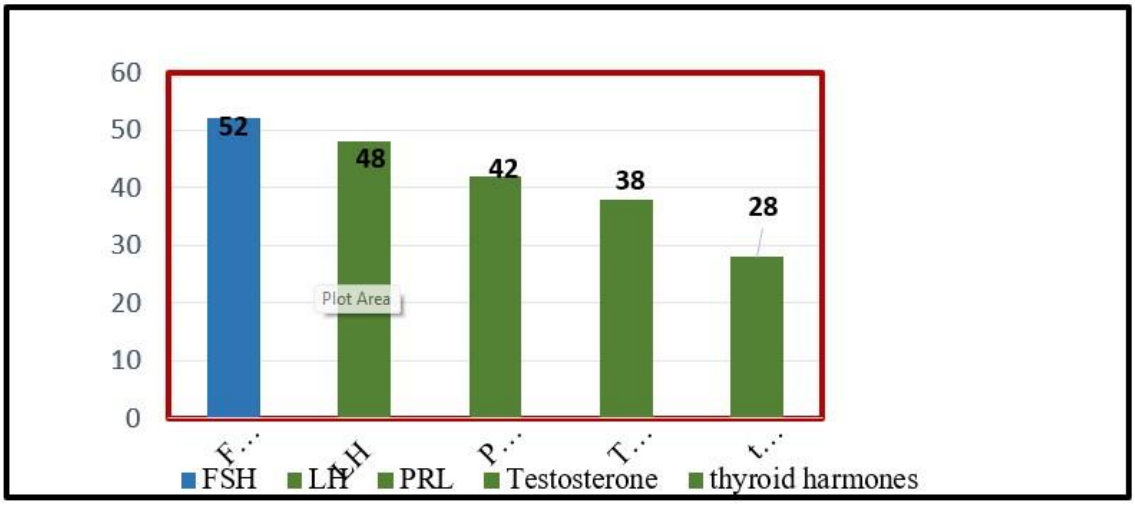

Fig 6: Subject distribution based on Hormonal abnormalities

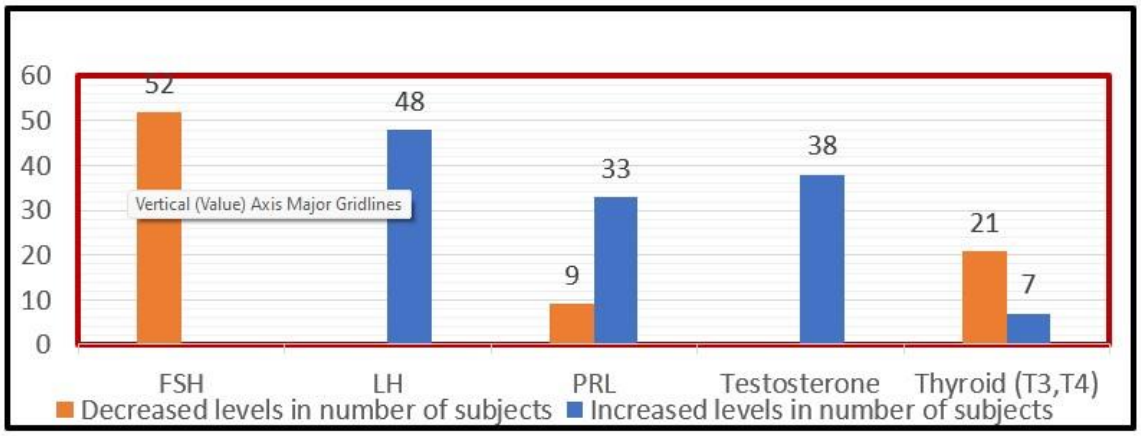

Fig 7 Hormonal variations in subjects

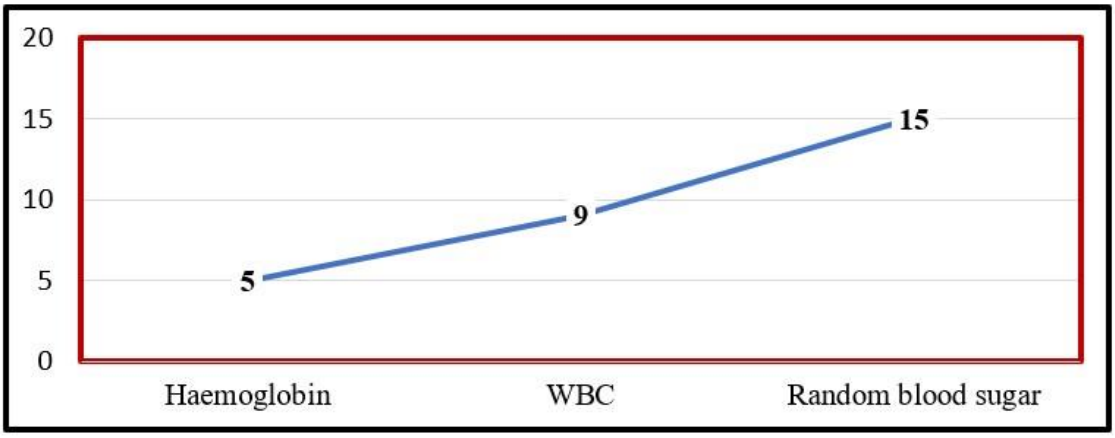

Fig8: Blood Test Abnormalities occurrence in subjects

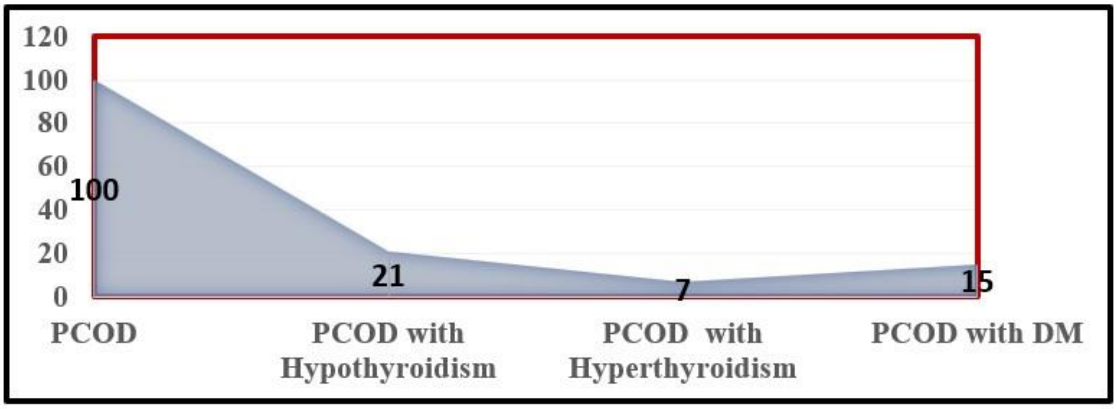

Fig9: PCOD With other comorbid conditions (Hypothyroidism, Hyperthyroidism, DM)

DISCUSSION

Polycystic ovarian Disease (PCOD) is the most common hormonal disorder in females of reproductive age. The exact causes is still unknown. It is closely related to an imbalance in the gonadotropin hormones. The clinical dermatological manifestations of PCOD constitute a substantial portion of the symptoms experienced by women with this disease. Clinical manifestations diagnosis can lead to early treatment of the patients and helps them in relieving their symptoms and improve quality of life. In the 100 subjects analyzed, Irregular menstruation was seen as the most common clinical manifestation in majority 66% of subject population. Amenorrhea was seen in 9% of subjects. Hirsutism was seen as the most common dermatologic manifestation in majority 35% of the cases, Acanthosis nigricans was seen in minority 7% of cases. 10% of study population were seen as obese ,21% were Overweight and only 13% were underweight. When assessed for hormonal abnormalities, 52% of the subjects showed decreased FSH, 48% had increased LH, 9% had decreased 33 % had increased PRL, 38% had increased Testosterone, 21% had decreased T_3, T_4 and 7% of subjects had increasedT_3, T_4 hormones When assessed for blood test abnormalities, Random blood sugar test abnormality was seen in 15% of the subjects, Hemoglobin levels were least affected and seen only in 5% of subject population. Among the 100 subjects analyzed for comorbid conditions, PCOD with Hypothyroidism was seen in 21% of study population, 15% of the subjects showed PCOD with DM, PCOD with Hyperthyroidism was seen in least 7% of study population. Women with PCOD are susceptible to risk factors like Obesity, Diabetes, Hypothyroidism. PCOD can be managed by lifestyle modifications such as maintaining a healthy weight, Diet management, limitation in consumption of carbohydrates, regular physical exercise.

CONCLUSION

Polycystic ovarian disease is closely associated with hormonal imbalance. The clinical dermatological manifestations constitute a

substantial portion of the symptoms experienced by women with this disease. In this study, we found that obesity (10%) was one of the risk factor along with hypothyroidism (21%), DM (15%) hyperthyroidism (7%). Out of 100 women with PCOD, 92% showed cutaneous manifestations, in which majority was hirsutism (35%) and least was Acanthosis nigricans (7%) the others were acne (28%), androgenic alopecia (22%), 8% showed nil symptoms. The most common clinical manifestations seen was menstrual abnormalities (66%), Others were menorrhea (25%), amenorrhoea (9%). In this study, the most common hormonal abnormalities seen was decreased FSH (52%), others were raised LH (48%), together FSH and LH varied in (48%); PRL elevated (33%) lowered (9%), increased testosterone (38%); thyroid hormones were decreased in (21%), increased in (7%). These hormonal imbalances eventually resulted in menstrual abnormalities leading to irregular menstruation, menorrhea, amenorrhoea.

We observed there was disruption in random blood sugar levels (15%), WBC (9%), Hb (5%). Among the total subjects, despite 56% of subjects bared normal weight, 71% were of young age group and 57% were with no comorbid conditions they still developed PCOD.

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