

**Role of Lifestyle Modification and Weight Reduction on PCOS Patients****Madhu Kumari<sup>1</sup>, Kumari Bibha<sup>2</sup>**<sup>1</sup>Senior Resident, Department of Obstetrics and Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar<sup>2</sup>Professor, Department of Obstetrics and Gynaecology, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar

Received: 25-01-2024 / Revised: 23-02-2024 / Accepted: 26-03-2024

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Conflict of interest: Nil

**Abstract:****Background:** Polycystic Ovarian Syndrome is the most common endocrine disorder of reproductive age. It has an unknown etiology and is related to overproduction of androgens and insulin resistance.**Methods:** This study was conducted in Sri Krishna Medical College & Hospital, Muzaffarpur over the period of 6 months. Total 100 PCOS patients were selected for study. Lifestyle modification, Yoga & Exercise was advised and changes noted after study.**Results:** Out of 100 PCOS cases 65 patients were obese having high BMI. 60% patients show menstrual cycle improvement. LH/FSH ratio improved in 35% cases and improved ovulatory cycles after physiotherapy in 50% cases.**Conclusion:** We can see from this study that just lifestyle modification makes a huge change in pathophysiology and symptoms of PCOS. So our first line therapy should be weight reduction and lifestyle modification rather than prescribing medicines.**Keywords:** PCOS, Lifestyle, Obese, Ovulatory cycle.

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**Introduction**

Polycystic Ovarian Syndrome (PCOS) is recognized as the most common endocrine disorder of reproductive aged women. It has an unknown etiology and is recognized as a heterogenous disorder that results in over production of androgens, primarily from the ovary, and is associated with insulin resistance (IR). Prevalence of PCOS in India is 3-20%, with 9-36% in adolescent only. The Rotterdam 2003 criteria define PCOS as incidence of any two of the three criteria, (i) oligoovulation and/or anovulation, (ii) excess androgen activity and (iii) polycystic ovaries (PCO).

Obesity is a common finding in women with PCOS and between 40–80% of women with these conditions are reported to be overweight or obese. Obesity plays a significant role in determining the severity of clinical manifestations and metabolic disorder. The presence of obesity is associated with a number of disturbances in hormones and metabolism. The hormone leptin (produced in and secreted by adipose tissue) affects the neuroendocrine reproductive axis, both centrally and peripherally. These alterations play a role in the genesis of obesity related ovulatory dysfunction. If waist circumference and waist-to-hip ratio of women with PCOS increase, reproductive function and metabo-

lic state of a woman is altered more than in cases when there are no changes in these parameters. PCOS also promotes psychological effect including depression, poor body image and self-esteem and reduced health related quality of life. Hence it is important in identifying effective therapies for the prevention and treatment of the syndrome to reduce its sheath and economic burdens.

Lifestyle modification have been proposed to improve not only metabolic and reproductive manifestation of PCOS but also having benefits like improvements in mood, self-esteem, anxiety, depression and psychological well-being. Lifestyle modification is the preferred first-line treatment for PCOS. Lifestyle modification, focus on dietary modification and increased physical activity and behavioral therapy. Physical exercises have been widely known to induce oxidative metabolism in tissues and the oxidative metabolism of the ovary is a stimulant for follicular development.

**Materials and Methods**

This study was conducted in university health care complex, Sri Krishna Medical College & Hospital, Muzaffarpur over the period of 6 months. Total 100 PCOS patients were selected for study. Out of 100

PCOS patients 65 patients were obese. Detailed history was taken regarding age, weight, height, BMI and other symptoms before and after study. Consent was taken after counseling of patients and following advised given. Pelvic floor exercises, Aerobic exercises (brisk walking, running, Jogging, cycling, swimming), Deep breathing, meditation for concentration and dhyana were advised. Life-style modification like routine time adjustment like early get up before sunrise and timed food intake

were advised. Some special food substance like methi and linseed included in their diet. By improving emotional behaviour they were encouraged to take tasty food not only to fill the stomach but feeling satiety with satisfaction.

### Results

100 patients were covered under study. 65 cases were over-weight or obese. In table 1 of our study demographic data with BMI.

**Table 1:**

Parameters	Overweight/obese(n=65)	Normal range (n=35)	P-value
Age (years)	28.31±4.49	24.85±3.56	<0.001
Weight (kgs)	67.66±10.79	59.31±5.4	<0.001
Height (m)	1.54±0.12	1.62±0.22	<0.001
BMI (kg/m <sup>2</sup> )	28.19±4.30	22.61±4.31	<0.001
Waist-Hip ratio	0.86±0.05	0.82±0.05	<0.001

Correlation of age with PCOS symptoms. This is the problem of reproductive age group and study is conducted in an university so maximum number of cases belong to age group 20-33 years. Overweight and obese patients having high waist-hip ratio and BMI.

**Table 2: of study shows symptoms before and after study**

Symptoms/Bio-chemical Markers	Before Study	After study
Menstrual History	Oligomenorrhea/Hypomenorrhea	Regular cycles in 60% cases with better flow during menses.
Hyperandrogenic symptoms	Acne, hirsutism	Acne improved in 35% cases.
Ovulatory dysfunction	Anovulation diagnosed by USG	Ovulation improved in 50% cases.
LH/FSH Ratio	>1 in 70% cases	>1 in 30% cases.

Physiotherapy and weight loss via energy restriction rein force in the reductions in abdominal fat, blood glucose, blood lipids, and insulin resistance, improvements in menstrual cyclicality, ovulation and fertility, reductions in testosterone levels and free androgen index.

**Table 3: of study shows advice given by physiotherapist to PCOS patients**

Life modification & Exercise	Advice
Diet	Calorie restricted diet 5-6 small meals to spread the calories throughout the day Sufficient intake of calcium and vit. D.
Exercise	Aerobic exercises (brisk walking, running, Jogging, cycling, swimming) 150minutes/week moderate exercise
Yoga & Meditation	Deep breathing, Pranayam. Kapalabhati, Pelvic floor exercise

Kapalabhati, pranayama tones the abdominal muscles and reduces abdominal fat in obese individuals.

### Discussion

Our study shows correlation of age and BMI with PCOS in table 1. Maximum patients of age group 20-33 years. High BMI, Waist-hip ratio is also contributing menstrual irregularities and other PCOS symptoms. Kavita Mandrelle et al [1] have shown correlation of demographic data with PCOS symptoms.

Table 2 of our study is about symptoms before and after study. As a Nybacka et al [2] in their study have shown the effect of exercise on PCOS, dietary management and exercise alone or in combination is effective in reproductive function improvement

in obese patients. Carlo vigorita et al [3] has shown effect of exercise on cardio-pulmonary function of PCOS patients. PCOS women represent an intriguing biological model illustrating the relationship between hormonal profile and cardiovascular disease. That supports role of physiotherapy on PCOS.

Mohammad Reza Kordi et al [4] has studied role of aerobic exercise on PCOS symptoms. And concluded that 3 months of aerobic exercise reduces ovarian volume in PCOS patients. Volkan Turan, Ebru kaya Matlu [5] had studied benefit of exercise in non-obese PCOS patients and concluded that Short-term regular exercise programs can lead to improvements in anthropometric, cardiovascular, and metabolic parameters of non-overweight women with polycystic ovary syndrome.

### Conclusion

PCOS is an important emergent public health problem in India. Efforts need to intensify in creating awareness on the general public about PCOS and its relation with obesity and sedentary life style. We can see from this study that just lifestyle modification make a huge change in pathophysiology and symptoms of PCOS. So our first line therapy should be weight reduction and lifestyle modification rather than prescribing medicines.

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