

Treatment Pattern and Role of Life Style Modifications in Patients with Poly Cystic Ovarian Syndrome

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Abstract:

Polycystic ovarian disease is a heterogeneous, multisystem hormonal disorder in women of reproductive age which leads to various metabolic disturbances. Present incidence of PCOS (5–6%) is fast increasing lately due to change in lifestyle and stress. Pathogenesis PCOS has been attributed to several causes including change in lifestyle, diet and stress. In this cross-sectional observational study, treatment pattern and role of lifestyle modifications in patients with PCOS in a tertiary care hospital was determined in 70 patients. The study involves enquiring patients about their symptoms both menstrual and non menstrual along with lifestyle that includes their dietary habits, stress levels and physical fitness by a Patient Questionnaire form. In PCOS, there is an imbalance of female hormones leading to weight gain, infertility, and the menstrual and non menstrual characteristics of patients. Dysmenorrhea and hair loss were the menstrual & non menstrual symptom observed in patients predominantly. Exercise therapy and calorie-limited diet were the main focus for weight reduction and has been applied to overweight/obese women with PCOS with varying degrees of success. Patient counseling and education on diet and few customized life style changes were given via pamphlets followed by personal follow-up to know if advised alterations were made and improvements identified if any. In the study group of 51 PCOS patients, 18 of them revealed non adherence towards advised lifestyle modifications while the remaining 33 patients complied with the health regime and medications as prescribed by the physician. Better treatment outcome in terms of regularized menstrual cycle along with symptomatic improvement was found in the latter group of patients. In conclusion, our study shows the discernment of lifestyle modifications for retrogression of PCOS manifestations.

Key Words: Infertility, patient questionnaire, lifestyle, pamphlets.

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I. Introduction

What is polycystic ovarian syndrome ?

Polycystic ovarian disease is a heterogeneous, multisystem endocrinopathy in women of reproductive age which leads to various metabolic disturbances and is associated with clinical features such as obesity, menstrual abnormalities and hyperandrogenism.^[1] The word polycystic means “many cysts.” Polycystic ovary syndrome affects a woman’s hormone levels and produces higher-than-normal amounts of male hormones and has abnormalities in the metabolism of androgens and estrogen and in the control of androgen production. Globally, one in 10 women suffer from PCOS which is one of the most common cause for female infertility, affecting an estimated 5 million women. Clinical symptoms include oligomenorrhoea (87%) or with a short period of amenorrhoea (26%) followed by prolonged or heavy periods. Elevated levels of male hormone may result in physical signs such as hyperandrogenism appears in the form of acne and hirsutism. More than 70 percent of women with PCOS grow hair on their face and body. 80 % of women with PCOS are overweight.

Terms in clinical usage	Menstrual pattern
Oligomenorrhoea	Cycle length >35 days
Polymenorrhoea	Cycle length >24days
Menorrhagia	Increased menstrual flow increased duration regular cycles
Hypomenorrhoea	Scanty bleeding and shorter days of bleeding
Metrorrhagia	Irregular bleeding in between cycles
Menometrorrhagia	Increased menstrual flow as well as irregular bleeding between the cycles ^[1]

Pathogenesis PCOS has been attributed to several causes including change in lifestyle, diet and stress.^[2]The various pathogenetic mechanisms of PCOS include abnormal gonadotropin-releasing hormone (GnRH) regulation leading to increased luteinizing hormone (LH) and decreased FSH, decreased response of ovarian follicles to FSH, increased anti-Mullerian hormone (AMH), follicular arrest and increased secretion of testosterone, estradiol and dehydroepiandrosterone (DHEA). Genetic and familial environment factors (autosomal dominant inherited factors) were later added as etiological factors in the development of PCOS.^[3]The environment factor may function in the utero or in early adolescent life, manifesting clinically a few years later as PCOS.

Clomiphene is the first line of treatment if a PCOS woman is to be treated for infertility, it induces ovulation in 80% and 40-50% conceive, but 25-40% abortion rate is caused by corpus luteal phase defect.^[5,7] Clomiphene with Dexamethasone improves infertility. Metformin treats the root cause of PCOS, rectifies endocrine and metabolic functions and improves fertility rate. It is used as an insulin sensitizer.^[6] It reduces insulin level, delays glucose absorption and liver production of glucose; liver and renal function tests should be performed prior to metformin administration.^[7,8,10] Moderate exercise like brisk walking, jogging, cycling or swimming is all great activities that can help with PCOS. Being mindful, exercising, breathing, doing yoga, eating well and organic where possible, hydrating and reducing toxins, smiling and getting lots of sleep are some of the things which will help calm down and relax.^[9,10]

II. Materials And Methods

A cross sectional observational study was undertaken to evaluate the treatment pattern and role of lifestyle modifications among patients with PCOS for a period of 6 months in gynecology department at Mediciti institute of medical sciences hospital, Telengana, India. Sample size of 70 patients diagnosed with PCOS was evaluated with primary objectives of identifying factors affecting quality of life, to monitor the treatment plan and evaluate its efficacy by patient counselling and health education.

Inclusion criteria:

Inclusion Criteria like women diagnosed with PCOS between 15 - 40 years of age; Patients with or without co morbidities like hypertension, diabetes and hypothyroidism; Willingness and ability to comply with treatment plans and laboratory tests.

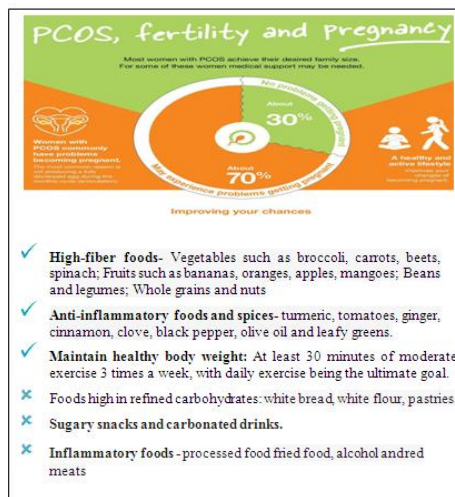
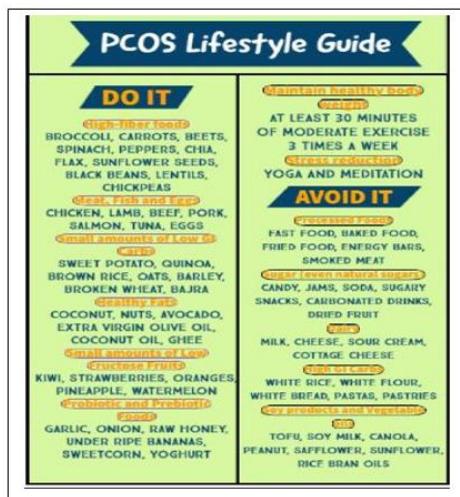
Exclusion criteria:

Exclusion Criteria like women older than 40 yrs of age; Women with menopause; Patients with no willingness and co-operation.

The patients were enrolled into the study based on inclusion and exclusion criteria. Informed consent was obtained from the patient. Patients were subjected to detail history, clinical examination, hormonal and ultrasonographic evaluation.

The study involves enquiring patients about their symptoms both menstrual and non menstrual along with life style that include their dietary habits, stress levels and physical fitness by a patient questionnaire form. Menstrual cycle duration, menstrual irregularities and abnormalities along with past medical and medication history were collected through patient data collection form. We counseled the patients and educated them by giving diet charts, few customised life style modifications and pamphlets.

PAMPHLETS:



III. Results And Discussion

Table 1: Weight of patients affected by PCOS

WEIGHT	PATIENT POPUATION	PERCENTAGE
Moderate	21	30.01%
Overweight	37	52.85%
Obese	12	17.14%

Interrelating PCOD and weight, it was found that majority of the patients were overweight (52.85%).

Table 2: Incidence of infertility in PCOS patients

INFERTILITY	PATIENT POPUATION	PERCENTAGE
Positive	12	48.00%
Negative	06	24.00%
Not known	07	28.00%

Incidence of infertility in pcos patients was found be more in positive patients (48.00%).

Table 3: Extent of menstrual symptoms in PCOS

MENSTRUAL SYMPTOMS	NO OF PATIENTS EFFECTED	PERCENTAGE %
Oligomenorrhoea	44	62.85%
Amenorrhoea	13	18.57%
Dysmenorrhoea	51	72.85%
Menorrhagia	16	22.85%

The extent of menstrual symptoms in PCOS patients were found to be as follows -
Dysmenorrhoea>Oligomenorrhoea>Amenorrhoea>Menorrhagia

Table 4: Extent of non menstrual symptoms in PCOS

NON MENSTRUAL SYMPTOMS	NO.OF PATIENTS AFFECTED	PERCENTAGE %
Acne	41	58.57%
Dark patches of skin in folds	9	1.28%
Loss of scalp hair	51	72.85%
Hirsutism	45	64.28%
Stress	31	44.28%

The extent of non menstrual symptoms in PCOS patients were found to be as follows -

Loss of scalp hair (81.8%)>Hirsutism (72.7%)> Acne (65.9%)> Stress (50%)> Dark patches of skin in folds (11.3%)

Table-5 Treatment pattern

TREATMENT PATTERN	NO.OF PATIENTS
Metformin	31
Tab. Crimson 35 : Ethinyl estradiol + Cyproterone	12
Progesterone	13

Anti PCOD sachets	18
PCO care/ Eve care forte	11
Minoxidil	5
Eflornithine	3
Iron supplements	25
L-thyroxine	11

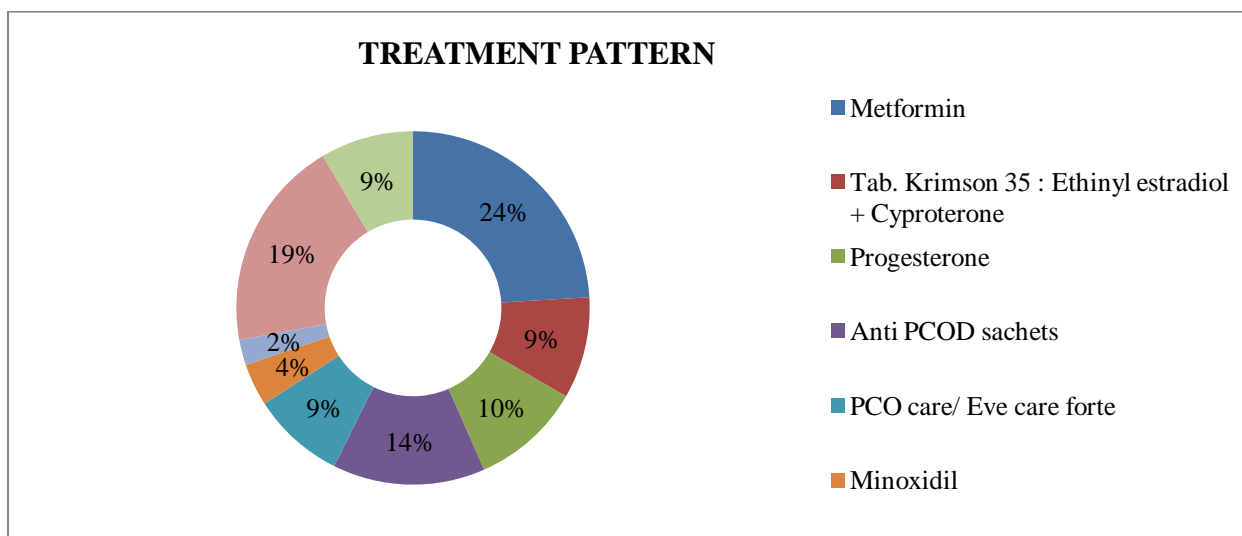


Figure 1: Graphical representation of treatment pattern of drugs used for PCOS

Table-6 Life style of patients before patient education

AGE	NO OF PATIENTS	LIFE STYLE MODIFICATIONS			MEDICATIONS
		Healthy diet	Exercise	Stress management	
15-20	17	5	5	2	2
20-25	35	7	9	4	3
25-30	13	7	8	0	3
30-35	5	3	2	1	0

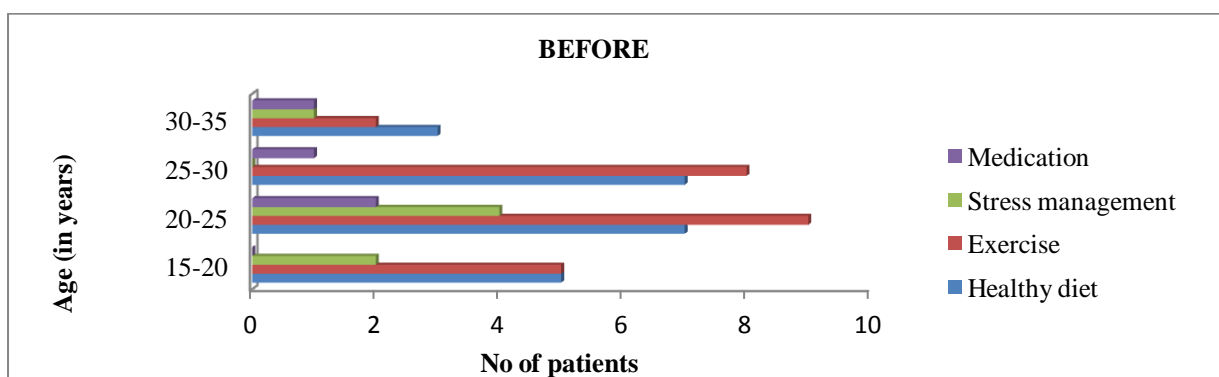


Figure 2: Graphical representation of lifestyle of patients before patient education.

Table-7 Life style of patients after patient education

AGE	NO OF PATIENTS	LIFESTYLE MODIFICATIONS			MEDICATIONS
		Healthy diet	Exercise	Stress management	
15-20	17	13	7	9	13
20-25	35	16	21	19	26
25-30	13	8	9	8	11
30-35	5	3	3	2	2

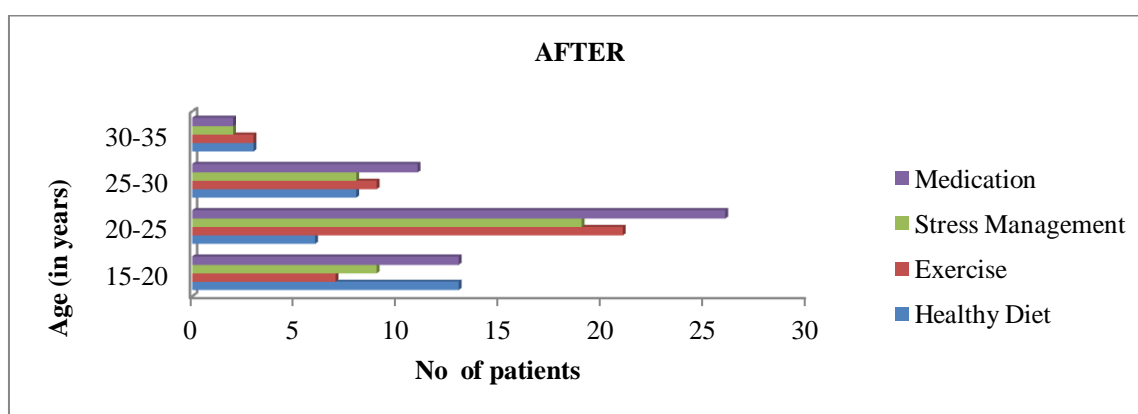


Figure-3 Graphical representation of lifestyle of patients after patient education

IV. Discussion:

In this cross-sectional observational study, treatment pattern and role of lifestyle modifications in patients with PCOS in a tertiary care hospital was determined in 70 patients. The mean age was found to be 22.7 and mean weight was 62.3. The study involves enquiring patients about their symptoms both menstrual and non menstrual along with lifestyle that included their dietary habits, stress levels and physical fitness by a patient questionnaire form. Menstrual cycle duration, menstrual irregularities & abnormalities along with past medical & medication history were collected through in-person interview and filled in a Patient Data Collection Form.^[11] The analysis of the above data reveals that there is a significant relationship between PCOS and overweight; infertility; inappropriate diet; poor physical activity; and stress.

The weights of patients with PCOS were compared and analyzed which showed that about half of them (52%) were overweight along with few obese patients.. Exercise therapy and calorie-limited diet were the main focus for weight reduction and has been applied to overweight/obese women with PCOS with varying degrees of success.

In PCOS, there is an imbalance of female hormones leading to infertility. Most women conceive with a combination of lifestyle modifications and fertility drugs. We have formulated improved fitness and dietary approaches to improve fertility outcomes.

After studying the menstrual characteristics of patients, it was observed that majority of them presented with Dysmenorrheal and then Oligomenorrhoea. Similarly, the extent of non menstrual symptoms was observed. Loss of scalp hair turns out to be most presented symptom with hirsutism and acne later. Only handful of them presented with dark patches in skin folds. These symptoms are treated by medications advised by the physician for a regulated course of period.

But our study proved that using medication for the duration regulated by physician along with formulated healthy lifestyle modifications improve the treatment outcomes. Sparse number of PCOS patients was found with hypothyroidism which is indeed associated with each other.

Stress is an exacerbating and etiologic factor for PCOS and PCOS itself is known to cause stress with respect to its symptoms particularly non menstrual symptoms. It is more likely to affect younger population and many other studies suggested psychological distress owing to PCOS.

Hirsutism, acne and hair loss were found to be the major distresses in these patients.^[12] Interventions for the treatment of clinical symptoms by both medication and life style modifications were made increasing self esteem of patients and thereby decreasing stress.

After assessing the treatment pattern in our study, it was noted that Metformin was the most prescribed drug by the physician which is also the known hallmark treatment for PCOS.^[13]

In our study of 70 patients, 51 patients were followed up for 3 months. We counseled the patients and educated them by giving diet charts and few customised life style modifications and pamphlets. We followed up with patients personally to know if they have made any alterations as advised and if they have seen any improvements.

18 patients did not adhere to any lifestyle modifications but only took medications as prescribed while 33 other patients followed the health regime and medications as prescribed by the physician.^[14] Better treatment outcome in terms of regularized menstrual cycle along with symptomatic improvement was found in the latter group of patients.

Ultimately, a wide range of dietary programs and fitness regimes akin to these approaches help improve weight, reproductive and metabolic abnormalities in PCOS.^[15]

V. Conclusion

In conclusion, our study shows the discernment of lifestyle modifications for retrogression of PCOS manifestations which are also the prerequisites. Lifestyle adaptations for PCOS patients should be personalized based on their symptoms, habits and conduct of life. And our study ascertains better treatment outcomes in patients who make healthy amendments to their lifestyle along with the administration of medication prescribed by the physician. Increased awareness about pivotal influence of proper diet, healthy weight, physical activity in PCOS and perks of lifestyle intervention in PCOS patients is needed.

	NO OF PATIENTS	TREATMENT OUTCOME
Medication	18	Regularized menstrual cycle
Medication +Life style changes	33	Regularized menstrual cycle with symptomatic improvement

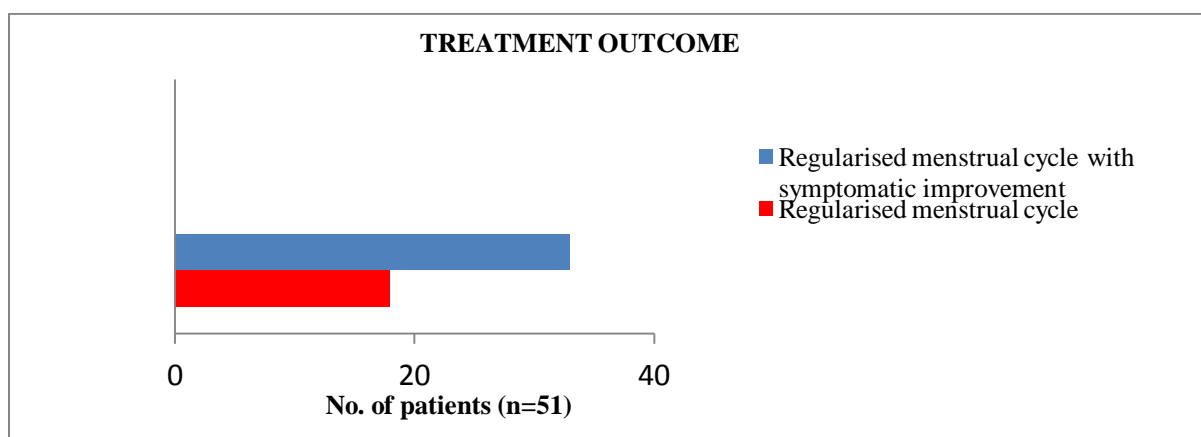


Figure 3: Graphical representation of treatment outcome

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CONFLICT OF INTEREST: The authors show no conflict of interests.

CONSENT TO PARTICIPATE: Patient has been explained about her medical condition and permission has been taken from the individual in order to publish the article and assured the patient that identity will not be revealed.

ETHICAL CONSENT: IRB Approval was obtained for this research study.

CONSENT FOR PUBLICATION: Written and signed consent forms were taken from all the patients after proper explanation.

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