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Life style modification on Diet, Exercise, Quality of life for Women with Polycystic Ovarian Syndrome

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Abstract: Polycystic ovary syndrome (PCOS) affects 8% to 13% of reproductive-aged women and is associated with reproductive and metabolic dysfunction. Polycystic ovary syndrome (PCOS) characterized by irregular cycles, ovulatory dysfunction, hyperandrogenism. polycystic ovarian morphology (PCOM) is one of the most common endocrine disorders in women of reproductive age. PCOS is associated with the risk of infertility and adverse pregnancy outcomes. With the increased rates of weight gain and prevalence of excess weight in women with PCOS (up to 88%),poses a major public health challenge mandating both prevention and treatment. ***Methods:*** Selects review of articles on randomized control trial related to lifestyle modifications on PCOS. Several aspects of the intervention such as changes in diet, physical activity has an effect on weight, quality of life. Another study recommended 150 min/week and 90 min/week of aerobic moderate-high intensity exercise for weight maintenance. ***Discussion:*** Strengthening recognition of broader features of PCOS including metabolic risk factors, cardiovascular disease, sleep apnoea, very high prevalence of psychological features, and high risk status for adverse outcomes during pregnancy emphasizing the poorly recognized, diverse burden of disease and the need for greater healthcare professional education, evidence-based patient information, improved models of care and shared decision making to improve patient experience.

Keywords: Polycystic Ovarian syndrome, Life style modification, Quality of life

INTRODUCTION

Polycystic ovary syndrome (PCOS) affects 8% to 13% of reproductive-aged women and is associated with reproductive and metabolic dysfunction. Obesity worsens the presentation of PCOS and weight management (weight loss, maintenance or prevention of excess weight gain) is proposed as an initial treatment strategy, best achieved through lifestyle changes incorporating diet, exercise and behavioural interventions.

Polycystic ovary syndrome (PCOS) characterized by irregular cycles, ovulatory dysfunction, hyperandrogenism and polycystic ovarian morphology (PCOM) is one of the most common endocrine disorders in women of reproductive age, and is prone to increased risks of complications such as diabetes, cardiovascular disease and endometrial cancer in the long term. The prevalence ranges from 6% to 21% depending on the population studied and diagnostic criteria used. PCOS is associated with the risk of infertility and adverse pregnancy outcomes. It has been reported as the most common cause of ovulatory dysfunction, accounting for 80% of women suffering from anovulatory infertility. Hyperandrogenism and insulin resistance (IR) are the core etiologic and primary endocrine characteristics of PCOS, which interplay each other in the occurrence and development of the disease. Visceral adiposity, common in both obese and non-obese women, has been proved to amplify and worsen hyperandrogenism and IR, and this would induce abdominal adipose accumulation in turn, thus forming a vicious feedback cycle. The interactions among androgen, IR and obesity profoundly affects endocrine metabolism, leading to ovulation disorders, impaired potential development of ovum, and poor endometrial receptivity. With the increased rates of weight gain and prevalence of excess weight in women with PCOS (up to 88%), reproductive health is further exacerbated, which adversely affects the condition and poses a major public health challenge mandating both prevention and treatment.

STUDY SELECTION

Study with Randomised control trial

Study Results: Little is known about the difference in effectiveness of lifestyle intervention between women with PCOS and non-PCOS women. So In a post hoc longitudinal analysis of a randomized, controlled trial, was done to investigate whether infertile women with PCOS and obesity (N = 87) responded differently to a 6-month lifestyle intervention program than infertile non-PCOS obese controls (N = 172). They evaluated several aspects of the intervention such as changes in diet, physical activity, and dropout rate, as well as the effect on weight, quality of life (QoL), and cardio metabolic outcomes. Multilevel analyses were used, and analyses were adjusted for baseline characteristics such as age, education, and smoking. Although BMI in both groups significantly decreased at 3 months and 6 months, there were no significant differences between the groups at 3 months (adjusted B: -0.3, 95% CI: -0.9 to 0.3, p = 0.35) and 6 months (adjusted B: 0.5, 95% CI: -0.4 to 1.4, p = 0.29). Women with PCOS and non-PCOS women had similar compliance with the lifestyle intervention in terms of actual change in diet and physical activity. Mental QoL scores were not different at either 3 or 6 months. Physical QoL scores were lower in women with PCOS compared with non-PCOS women at 3 months (adjusted B: -2.4, 95% CI: -4.8 to -0.06, p = 0.045) but not

at 6 months. Cardio metabolic parameters did not differ between the groups. Results showed that infertile women with PCOS and obesity and non-PCOS obese controls responded largely similarly to lifestyle intervention and achieved the same level of improvement in markers of cardio metabolic health.

Another study comprise of lifestyle treatments (LSTs) as first-line intervention in adolescents and adult women with PCOS. The majority of these Clinical practice guidelines CPGs recommended a mixture of calorie-restricted diet, exercise, and behavioral interventions as the main features of LSTs. Four CPGs recommended a weight loss target between 5% and 10% with LSTs (15,19,25,27). There were no clear recommendations on the type of diet to offer women with PCOS with varied recommendations for hypocaloric diet (deficit between 500 and 700 kcal/day) and a focus on low glycemic index food intake. Similarly, there was no clear consensus on the optimal duration or type of physical exercise to recommend. Three CPGs recommended 150 min/week (14,15,25) and 90 min/week of aerobic moderate-high intensity exercise for weight maintenance.

Dietary interventions as a first-line treatment for patients with polycystic ovary syndrome (PCOS) have been evaluated, but the optimal diet has not been determined. Proper diet and the maintenance of adequate nutritional status are of great importance in the prevention of this disorder, and therapeutics and dietary habits play an important role in the recovery of patients with PCOS.A range of dietary patterns have been shown to impact weight loss and insulin resistance (IR) and improve reproductive function, including the Mediterranean diet, the ketogenic diet, Dietary Approaches to Stop Hypertension, and other dietary patterns.

Another study was conducted on the basis of recommended assessment and management of those with polycystic ovary syndrome (PCOS), based on the best available evidence, clinical expertise, and consumer preference.

The 2018 International PCOS Guideline was independently evaluated as high quality and integrated multidisciplinary and consumer perspectives from six continents; it is now used in 196 countries and is widely cited. It was based on best available, but generally very low to low quality, evidence. It applied robust methodological processes and addressed shared priorities.

Study Design, Size, Duration: The 2023 International Evidence-based Guideline update reengaged the 2018 network across professional societies and consumer organizations, with multidisciplinary experts and women with PCOS directly involved at all stages.

Main Results and the Role of Chance: Three CPGs recommended 150 min/week (14,15,25) and 90 min/week of aerobic moderate-high intensity exercise for weight maintenance The technical evidence reports and analyses evidence-based and 54 consensus recommendations, with 123 practice points.

Key updates include: i) further refinement of individual diagnostic criteria, a simplified diagnostic algorithm and inclusion of anti-Mullerian hormone (AMH) levels as an alternative to ultrasound in adults only; ii) strengthening recognition of broader features of PCOS including metabolic risk factors, cardiovascular disease, sleep apnea, very high prevalence of psychological features, and high risk status for adverse outcomes during pregnancy; iii) emphasizing the poorly recognized, diverse burden of disease and the need for greater healthcare professional education, evidence-based patient information, improved models of care and shared decision making to improve patient experience, alongside greater research; iv) maintained emphasis on healthy lifestyle, emotional wellbeing and quality of life, with awareness and consideration of weight stigma; and v) emphasizing evidence-based medical therapy and cheaper and safer fertility management.

Key Messages*:* Diets as well as life style modification including exercise that can reduce rates of obesity and IR are beneficial to women with PCOS, the status of obesity and IR should be determined at the early stage of the disease, so as to develop individualized and sustainable dietary intervention. The long-term efficacy, safety, and health benefits of diet management in patients with PCOS need to be tested by further researches.

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