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A holistic view of management of polycystic ovarian syndrome

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Abstract---Polycystic ovary syndrome (PCOS) is one of the most prevalent disorders in women which influence their endocrine and metabolic functioning. It causes physical and psychological issues which are responsible for causing disturbances in daily life of women. Apart from genetics, stress, anxiety, obesity, and sedentary life style are among several factors that contribute to this disease. Hence, the treatment must target all these factors. Yoga, diet, exercises and therapies like mindfulness based cognitive therapy (MBCT) have significant effects on management of symptoms of PCOS. Assessment of the overall health of women can assist in the treatment programme and integral plans can be designed to deal with the problem. The purpose of this qualitative study is to assess different treatment outcomes which can help the women suffering from PCOS, health experts, and mental health workers in understanding, management and treatment of this disease from a holistic point of view. This could further enhance the well-being and overall living pattern of the women.

Keywords---PCOS, management, treatment, lifestyle, relaxation, MBCT, well-being.

Introduction

Polycystic ovary syndrome (PCOS) is one of the most prevalent disorders which influence the endocrine and metabolic functioning in women of reproductive age. It affects 5–10% of reproductive-aged women (Raja-Khan & Legro, 2005). It has been observed that PCOS prevails more in young women as compared to those above the age of 35 years (Jalilian et al., 2015). Stein and Leventhal (American gynaecologists) first described PCOS in 1935. They described it as the accumulation of incompletely developed follicles in the ovaries. They also discovered an association between the presence of polycystic ovaries and signs of hirsutism and amenorrhea (Stein & Leventhal, 1935). PCOS is identified by an increased level of androgens (male hormones) and unusual or absent ovulation (anovulation).

PCOS causes physical and psychological issues which are responsible for causing disturbances in daily life of women (Li et al., 2013). In terms of physical aspects, this disease is characterized by unwanted hair growth on face, chin, neck area and baldness. The overall impact is difficulty or inability in formation of eggs, cysts in ovaries and irregularity in periods. Women with PCOS are more prone to endometrial and ovarian cancer, late menopause, type 2 diabetes mellitus, hypertension, lipid disorders, cardiovascular disease (Brehm et al., 2004; Ndefo et al., 2013). PCOS may cause mental health problems like worry, low mood, aggression, difficulty in concentration, lack of social interest and physiological issues like inability to take a sound sleep, headache and body pain (Berek & Novak, 2012).

It has been documented that at least seventy five percent among all PCOS woman report these symptoms (Nour et al., 2009). However, various differences are observed in varying cultures. In India prevalence rate of PCOS ranges from 3.7 to 22.5 percent in context to the population studied and the criteria used for diagnosis (Ganie et al., 2019). A study conducted at a residential college in Anantapur, South India showed a PCOS prevalence rate of 9.13% in Indian female adolescents (Nidhi, et al., 2011). Another study shows an estimated prevalence of PCOS in women between the ages of 18-25 years as 3.7% (Gill, et al., 2012). However, a study conducted in Tamil Nadu showcased prevalence of PCOS to be 18% (Balaji et al., 2015). The increasing trend of PCOS prevalence among reproductive women is in part due to imbalances between calorie intake and exercise that results in insulin retention, which is the pathophysiology of such syndrome (Santoso, 2014).

Impact of PCOS

It can trouble in daily routine as well as in interpersonal domain (Montazeri, 2011). Females with PCOS score low on scale of quality of life and are dependent on treatment of pharmacology (Dimmock et al., 2000). It also tends to decrease in the context of personal life in terms of intimate relationships with family. It has been observed that females with severe PCOS have fewer relationships (Coughlin, 1990). PCOS has a negative outcome for the relationship of females with their partners and kids (Ussher, 2003). Guzick (2004) reported PCOS results in metabolic changes and lipid profile of patients which further results in obstructive

sleep apnea, a breathing disorder. PCOS is the main reason of infertility, stroke and kidney problems. Previous researches have documented that female who have abnormal weight as per their height may be insulin resistant which may result in disturbed fat in body cells (Herriot et al., 2008). It has been seen that there are greater chances of Insulin resistance (IR) among PCOS females (50%) as compared to general population (10–25 %) (Fogel, 2001).

It has long been established that “PCOS is frequently co-morbid with psychiatric disorders, one previous study highlighted the association between the severity of PCOS and psychiatric symptoms” (Faramarzi, et al., 2014). Females with PCOS shows ovarian hyper-androgenism profile, which, includes hirsutism, androgenic alopecia, acne, and reduced fertility, and leads to adverse metabolic changes. Additionally, females with PCOS show intrinsic insulin resistance (IR) with its consequent hyper-insulinaemia, which results in the development of atherosclerosis, arterial hypertension, and type 2 diabetes mellitus (T2DM), which give rise to cardiovascular disease (CVD), being the main cause of death among women. It has been found that the first line of treatment that females go for PCOS is biological based medicines. Recently, this approach has been changed with the concept of psychological interventions. Mindfulness based cognitive therapy is one among them, that is supposed to help indirectly.

Methods

Design and selection of studies from January 2021 to 9th of February 2022, a literature review was conducted by searching articles in the ScienceDirect, PubMed, Sage Publications, and Google Scholar databases. The term "Depression", "anxiety", "holistic management", "yoga", and "therapy", as well as "polycystic ovary syndrome", were used for searching articles. Articles included in the study are available in English language.

PCOS: Holistic Management

It has been seen that managing PCOS requires a holistic treatment approach, which includes:

Healthy Lifestyle

Lifestyle is an important factor that can help in overcoming PCOS (Norman, 2002). It has been found that with healthy diet and daily exercise weight can be controlled. In addition, Metformin regulates insulin sensitivity, glucose consumption, ameliorates hyperandrogenism and irregular periods in girls and women. Metformin is supposed to work in the healthy lipid profile range (Ibanez et al., 2000). Metformin reduce testosterone levels among females, improves fertility rate, reduction in unwanted hair growth in some months. It automatically reduces extra weight among females (Conway, 2000). Oral contraceptives help in predictable and regular menstrual cycle, alongwith overcoming frustration and reduce testosterone level (Clark et al., 1999). Lack of knowledge and the negative attitude towards PCOS among girls and the attitude of not taking any measures to modify the lifestyles can be improved by assessing their knowledge and by providing necessary information about the polycystic ovarian disease (Polson et

al., 1988). Morgan (2009) found that the most effective way to deal with menstrual disturbance is to monitor weight by adapting a healthy lifestyle, which eventually results in control of insulin.

Naturopathy

Naturopathy also provides various options to deal with PCOS. Acupuncture is now used to treat PCOS as it help females to regulate their periods. In this treatment needles are used to help woman with diagnosis of PCOS. These needles are fixed around the reproductive system with the help of an expert, which results in stimulation of the reproductive system and helps in normal menstrual cycle (Badawy&Elnashar, 2011). In addition, concentration of 6 herbs – “chaste tree berry (*Vitex agnuscastus*), licorice (*Glycyrrhizaglabra*), white peony (*Paeonialactiflora*), gymnema (*Gymnemasyvestre*), echinacea (*Echinacea spp.*), and schisandra (*Schisandrachinensis*)” is suggested along with eating a low-carbohydrate diet in order to regulate the menstrual cycle to thirty-two-day length. It shows improvement in symptoms such as heaviness in breast and excessive hair growth on face and chin, the lipid profile also showed improvement. It improves fertility and helps in 12% weight loss (Hywood & Bone, 2004).

Diet& Metabolism

Diet and exercise can play an important role in managing PCOS. The reason behind this assumption is that females with a disturbed menstrual cycle have increased insulin production in the blood which eventually leads to weight gain. Furthermore, having knowledge about the nutritional values of foods in diet as well as the kinds of food items can help in promoting health and weight loss. Researchers have documented that intermittent fasting can help to recover from PCOS symptoms (Farshchi et al., 2009). Dietary supplements can improve insulin resistance and maintaining its healthy level and hence can have advantage for surface symptoms and weight loss.

It has been found that only maintaining diet is not enough to overcome obesity (Liepa et al., 2008). Lifestyle factors also help in overcoming the risk for co-morbid diseases related with PCOD like heart disease, diabetes, and endometrial cancer (Hoeger et al., 2007). Farshchi (2007) reported that “use of drugs to either improve insulin sensitivity or to promote weight loss are justified as a short-term measure, and are most likely to be beneficial when used early in combination with diet and exercise”. Ogbuji, 2010 reported that young women adults with menstrual problems have lack of awareness about the food digestion, calorie count, metabolism rate, fat consumption etc. So, education and encouragement need to be given for girls with PCOS to perform suggested physical activity each day.

PCOS and insulin resistance require healthy snacking as well as healthy meals. Meal planning is important, but planning of snacks is equally important. Healthy snacking throughout the day is helpful in keeping the metabolism up and the blood sugars stable. A healthy snack should contain not only macro nutrient but also enough amounts of all essential micro nutrients. Vitamins and minerals that help in the recovery and management of symptoms associated with PCOS are

Chromium, Zinc, Magnesium, Co-enzyme Q10, B vitamins, Vitamin C, Diindolemethane(DIM) and Resveratrol (Banu et al., 2013). Various fatty acids present in flax seeds, nuts, canola, olive and fish oil are beneficial as they can regulate different hormone levels in females (Bhathena, 2000). It has been suggested that to get rid from PCOS, meals should be light and low in calories and rich in nutrients. Females should take more fruits and salads with a healthy lifestyle of minimum one-hour moderate level workout (Bhathena, 2000).

Yoga & Exercise

Harris and Cheung (2002) documented that physical activity changes the secretion of insulin, frequency of ovulation, hypercholesterolemia and general well-being. Relaxation is the key in PCOS. Asanas (Yoga postures), Pranayama (breathing exercises), along with certain soothing meditation helps to detoxify and de-stress the system. Schmidt et al. (1997) reported that PCOS brings change in amount of various stress and sex hormones as a result of PCOS; hence an early detection can help people to maintain health. Experts suggest that exercise keeps the metabolic levels high and also helps in calorie burn (Hayes and Kriska, 2008), which eventually keeps the body parameters in normal range (King et al., 2010). Knowing about the causes and symptoms about any disease is an important factor for treating any disease. Hence management of PCOS should include educational aspect as well healthy lifestyle, with medical support if required.

Spiritual Therapy

Spiritual therapy is another measure to reduce psychological disorder in PCOS. Mindfulness stress management has proven to help reduce depression, anxiety, stress, and also enhance spirituality values and saliva cortisol level. Spiritual therapy is a cognitive knowledge that affects a person's ability to control his/her negative emotion using religious understanding (Chiesa & Serretti., 2009; Fjorback et al., 2011). Researchers have documented that intermittent fasting can help in recovering from PCOS symptoms (Farshchi et al., 2007). In the intervention group, levels of Serum cortisol and nor-adrenaline were significantly lesser than the levels at the starting of Ramadan in comparison to control group. It means that in females with PCOS, Ramadan fasting reduces stress neurohormones, Zangeneh et al. (2015).

Relaxation Therapy

Psychological relaxation techniques can non-pharmacologically reduce hypothalamic- pituitary axis (HPA) activity, alleviate anxiety and depression, and improve QoL and well-being (Deng & Cassileth, 2005). Calming breathing, muscle relaxation, and guided imagery resulted in significant reduction in DHEAS (Barry et al., 2017). Relaxation may result in lower androgen levels. Cruess and colleagues (2001) reported that management of stress significantly lowered free and total testosterone in breast cancer patients, whereas Carlson and colleagues (2004) found only a non-significant reduction in DHEAS levels. Studies have shown improvement in mood in PCOS through the use of various interventions, whereas mindfulness training was reported to significantly reduce cortisol, stress and depression, though no improvement in QoL (Stefanaki et al., 2014).

Mindfulness-based cognitive therapy

Mindfulness-based cognitive therapy (MBCT) is given by Segal et al. in 2002. The rationale behind MBCT was to help people in stuck in their negative emotions by enhancing acceptance to reality (Segal et al., 2002). It involves acceptance of everything on a non –judgemental platform. The sessions of any module based on mindfulness help people to first identify and then accept their thought patterns and respond to them by eliminating reactivity (Ma &Teasdale, 2004). During mindfulness all the so-called tensions, stress, and physical discomfort, disturbing feelings are welcomed (Baer, 2003). MBCT encourages use of cognitive restructuring and mindfulness skills. MBCT includes eight sessions that increase attention and awareness among participants.

Bluth (2015) reported a pilot study to see the effectiveness of MBCT on menstrual irregularities among females. He reported that MBCT training lowered the number of key symptoms as well as their severity. As a result, it was assumed that MBCT helps in acceptance of pain, emotional fluctuation and stress among women. Different studies have underlined that MBCT can moderate stress and emotional aspects (Greeson, 2008,) by focusing on the realization that most thoughts and emotions fluctuate or are transient (Baer, 2006). It seems that when fluctuation of negative emotions is reduced pain and stress automatically reduces, and symptoms of PCOS improve. Previous researches have documented similar outcomes about the use of MBCT in pain reduction (Omidi & Zargar, 2014).

It has been observed that Anxiety and depression had a hidden impact on symptoms in women with PCOS (Firoozi, et al., 2012). Hence by treating the underlying causes of PCOD may help in overcoming the disease. Previous researches provide support for the use of MBCT as a treatment modality for mood and anxiety spectrum disorders (Faramarzi & Pasha, 2015). Relaxation is a most important outcome of mindfulness which eventually reduces stress and increase positive emotions. Female's encounter different roles and responsibilities in home as well as in their occupational life. These psychosocial reasons result in stress which is found to be a leading cause of disturbance of menstrual cycle among females (Vickers & McNally, 2004).

Conclusion and Future Recommendations

Further researches are required to determine the benefits of different methods of holistic management in treatment and management various psychological and physical symptoms of PCOS. In the end we can conclude that holistic management is not only a complete treatment for the entire condition of PCOS but also it is a way to prevent the intensity of the symptoms of PCOS. The effect of holistic management on PCOS is yet to be studied and it is a matter of research in upcoming future. Screening could provide opportunity to the people suffering from PCOS for promoting healthy lifestyles and early interventions to prevent future morbidities. Measures should be taken so that women are informed about all the problems that they face during PCOS can and the ways and methods of coping with them. Healthy and balanced diet is also necessary in daily routine. It will keep our metabolism strong and make our immunity strong. It will improve disturbed menstrual cycle in women suffering from PCOS. Apart from this daily

yoga and exercise will also help to reduce weight and in managing stress as well, which automatically help to cure PCOS. This could be considered as a safe and effective treatment of PCOS.

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