

Original Article

Atrocious dietary habits leading females of Karachi towards polycystic ovary syndrome

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ABSTRACT

Introduction Polycystic ovary syndrome (PCOS) is the most common chronic endocrine disorder that is responsible for imbalance of hormones affecting women of reproductive age leading to difficulties in period cycle and getting pregnant. **Objective** The aim of study was to evaluate the routine eating habit of the patients. **Methodology** The study was conducted in Gynecology ward of Tertiary care hospital. This analytical study was performed after taking consent including those patients, who came to the clinic to report their problem of infertility (married women) and irregular periods problems (unmarried girls), targeted age group was between 25 to 35. Interview based study was conducted which include all the questions related to their eating habits like; food typically eaten in breakfast, lunch, dinner and amount of snacks taken per meal. High intake of carbohydrate and fats also investigated per meal. There BMI and FBS was also calculated. **Results** Total 300 patients were studied out of which 50 patients were included in the study and the results showed that in PCOS patients the frequency of obesity & overweight is (92%), followed by (66%) of patients had excess carbohydrate/sugar craving while 34% patients had normal eating patterns. High rates of these complications were seen in the series. **Conclusion** From the results it is suggested that obese women with PCOS requires more attention toward the appropriate management of their dietary habits, as their high BMI and high fasting blood sugar is correlating with abnormal clinical and biochemical features. Calorie intake should be restricted. Diet control along with exercise was suggested to the patients.

KEYWORDS

Polycystic ovaries, obese women, Advance Glycation end products, dietary patterns,

INTRODUCTION

The most common chronic endocrine disorder affecting women of reproductive age is polycystic ovary syndrome (PCOS), (Haq; 2007) it is the condition characterized by chronic oligo-an ovulation and hyperandrogenism. Adequate nutritional status is a critical determinant of the onset and maintenance of normal reproductive function energy from lipids and a higher intake of fibers by PCOS women (Pasquali;2013). Majority of women with PCOS are exposed to many features of metabolic syndrome. Obesity is seen approximately in 50 % women with PCOS. It may play a pathogenic role in susceptible individuals for syndrome development. High dietary lipid intake, along with additional mechanisms by which obesity favors the development of hyperandrogenism in PCOS. Obese women with PCOS have more severe hyperandrogenism and related clinical features i.e. anovulation, hirsutism and menstrual abnormalities as compared to normal-weight PCOS women (Gambinaria; 2002).

Young girls with polycystic ovary syndrome (PCOS) have increased levels of factors constituting the metabolic syndrome such as hypertension, hypertriglyceridemia, centripetal obesity, hyperinsulinemia and low high-density lipoprotein cholesterol (Glueck; 2006). Obesity and PCOS are closely linked to each other (Jim; 2001) the severity of the clinical features of polycystic ovary syndrome (PCOS), increased with adiposity (Hoger; 2008) and both common disorders have complex phenotype. (Richard; 2000) This commonest endocrine disorder is currently emerging as a potential facet of the metabolic syndrome (MBS) in women. Available literature suggests that younger women with PCOS are significantly more prone to development of metabolic syndrome. Obesity indisputably compounds the clinical course of women with PCOS (Diamanti; 2007).

Weight loss have several beneficial effects upon, endocrinological, metabolic and clinical features of obese women with PCOS. Losing weight is a first-line therapeutic option in all obese women with PCOS (Pasquali; 1997). Weight loss shows beneficial effects on hormones, metabolism and clinical features. (Gambinaria; 2002) Obesity in PCOS reflects environmental factors to a great

extent. (Hoger; 2008). That is the eating habits of women with PCOS.

Actual connection between abnormal diet and risk of PCOS development is still contradictory. Researchers evaluated that daily diet composition or energy intake does not differ to a great extent in PCOS women when compared with control group. (Wright; 2004 & Colombo; 2009) although some specific nutrients were reported (Toscani; 2011).The food that we normally take are high in their fat content along with that they are cooked at high temperature that makes them rich in advanced glycation end products (AGEs) content, it promotes diabetes, oxidative stress and insulin resistance (Pasquali; 2013).

It has been reported that oxidative stress may have a role in pathophysiology of PCOS. (Lin; 2002). AGEs and oxidation protein were found to be higher in women with PCOS than in normal healthy women and there is a positive correlation between AGEs levels and androgen. (Chavarrro; 2009 & Pasquali; 2013).

METHODOLOGY

The study was performed after taking consent from the patient. We evaluated the routine eating habit of the patients diagnosed with PCOS. All the subjects were enrolled voluntarily in the study after being explained by the concerned doctor. A total of 300 women of reproductive age were studied at gynecology ward of tertiary care hospital.

50 Women with PCOS were enrolled in the study. A detail history was taken on a pre-structured questionnaire that included basic physical examination like weight, height, body mass index (BMI), waist to hip ratio, blood pressure and FBS was also evaluated. Demographic questions were also asked including intake of calories taken in breakfast lunch and dinner for proper evaluation of their eating habits. Data was analyzed on SPSS version 19.0.

RESULTS

Due to atrocious dietary habits which has been observed in this study leads to disturbed levels of BMI (Fig: 1), 50 patient of PCOS undergoes the physical examination in which their BMI was calculated that disclosed 45% of PCOS women are obese, 47% are overweight and 8% are at the borderline of the normal weight. Fig: 2 due to this habitual high intake of carbohydrates and sugar their high FBS levels was also observed.

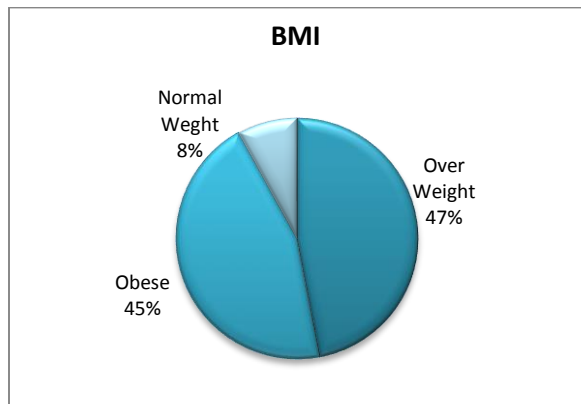


FIG 1: Shows 8 % women with PCOS are of normal weight, 45 % women are obese whereas 47 % women

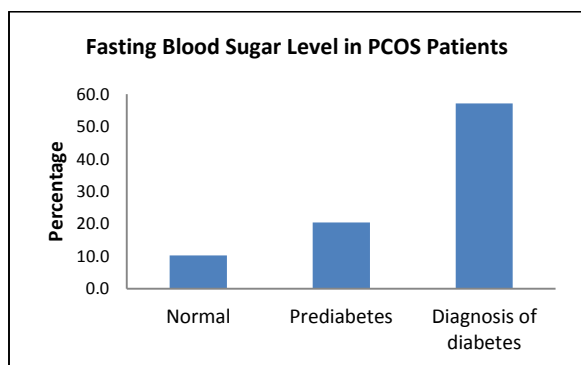


FIG 2: Shows that only 10% women with PCOS have normal blood sugar level, 20 % women are pre-diabetic whereas 60

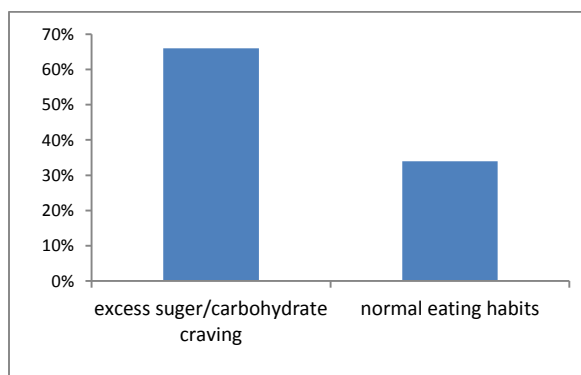


Fig3: shows that out of all patients only 34% patients had normal eating habits while remaining 66% had excess craving for carbohydrates and sugar.

DISCUSSION

It is still contradictory to interlink the obesity, insulin resistance and endocrine abnormalities in PCOS patients. The incidence of obesity has been reported previously in PCOS women, but not entirely explained. Its cause is a matter of worry: obesity followed by this syndrome contributes to hyperandrogenism, insulin resistance, reproductive disorders, risk of diabetes and cardiovascular disease (Holte; 1995).

Previously researchers have evaluated that women with PCOS are obese due to a susceptibility toward overeating, mostly starchy foods or sweet. Significant variations were seen in BMI strata during analysis of sources of energy and individual food group. PCOS women having normal weight generally had similar food selection as women of normal weight without the disorder. Similarly obese women with the syndrome don't significantly consume any one type of food except meat as compare to women those were obese but don't have this syndrome (Lefebvre; 1997).

However, this study link obesity, total fat distribution of body and atrocious dietary habits. It has been observed that women suffering from PCOS having higher amount of body fat distribution. As concerned with dietary habits, a pattern in higher consumption in saturated fat, total servings of high glycemic index foods and total fat was reported. In these females irregular BMI has also been seen Fig.1. The study was conducted to evaluate the relation of dietary patterns with PCOS and this is concluded that high intake of convenience food or food that contain high amount of carbohydrates and fats are very harmful for the PCOS patient, as they have high intensity for the fat distribution, their body density get easily affected by these eating habits (Vlassara; 2008).

Many women with PCOS may have lost their internal ability of food regulation. For example, they may be unable to efficiently distinguish when they feel hunger, which leads to unnecessary eating or waiting long periods to eat and relatively suffering from PCOS having FBS levels higher than normal suffered with eating disorder. Fig.2 due to these atrocious dietary habits women. (Uribarri; 2010). Recommendation has been made for the intake of macronutrients. Proportion of the saturated fat should be low with the restricted fat value $\leq 30\%$ of total calories. Dyslipidemia occur with the high consumptions of GI carbohydrate with excessive weight gain and stimulation of hunger and sugar craving (Fenks; 2003). Advanced glycosylated end products (AGEs) are commonly present in diet with different oxidants. (Vlassara; 2008) Food contain increased amount of AGE content that are over cooked or cook in dry conditions, most probably if the fat content is high. (Uribarri; 2010). Elevated oxidative stress has also been noted with inflammation contributed by Dietary AGEs (Vlassara;2008 & Fenks;2003).

CONCLUSION

Present study conclude that dietary patterns has a profound effect in the development of polycystic ovarian syndrome and women struggling with PCOS and having eating disorders need to learn effective ways to deal with their improper dietary patterns . Dietitians can help patients to identify possible alternative coping skills other than food and can support them to apply these new skills in their life. This can be also use as a tool for controlling the incidence & prevalence rate.

RECOMMENDATION

Diet and exercise need to be tailored to the individual's needs and preferences. Distribution of Calorie intake should be made between several meals per day with low intake from snacks and drinks.

CONFLICT OF INTEREST

All the authors disclosed that there is no Conflict of interest associated in the preparation of this article.

ACKNOWLEDGMENT

We would like to acknowledge the efforts of Huma Khan & Rida Nasir for their intellectual support.

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