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Polycystic Ovary Syndrome, Obesity and Diet

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Polycystic ovary syndrome (PCOS) is the most common endocrine disorder of women in reproductive age in the world. According to the National Institute of Health (NIH) prevalence is reported as 6-10%, while prevalence according to Rotterdam criteria is reported as 15%. PCOS is associated with long term health risk, including insulin resistance, diabetes mellitus, obesity, dyslipidemia, cardiovascular diseases and malignancies such as breast and endometrial cancer. Obesity complicates the diagnosis of PCOS with a reported %61 to %76 of patients with PCOS considered obese in the United States and Australia. Obesity has been linked with a lot of metabolic and reproductive disorders including PCOS. At the same time, rs9939609 variation of fat mass and obesity associated gene is significantly associated with risk PCOS. While a clear association exists between obesity and PCOS, the exact nature of this relationship remains unexplained. PCOS women prone to visceral fat hypertrophy and the presence of these conditions is related to insulin resistance. Disturbed secretion of many adipocyte-derived substances is associated with chronic low grade inflammation and contribute to insulin resistance. Abdominal obesity and insulin resistance stimulate ovarian and androgen production. Compared with normal weight PCOS had significantly lower sex hormone-binding globulin and high density lipoprotein cholesterol and significantly higher triglycerides, leptin, fasting insulin, low density lipoprotein cholesterol and free testosterone levels. These results indicate that metabolic disorders in PCOS are worsened by obesity. Body mass index was significantly associated with systolic and diastolic blood pressure and insulin resistance in PCOS. In addition to this association between obesity and PCOS, testosterone induced obesity is probably the common pathway for development sleep disorder breathing (SDB) in PCOS. In a study, SDB was seen %66 of the PCOS patients and %4 of control group. A significant correlation of waist circumference and body mass index was observed with respiratory distress index. The actual cause of this syndrome is unknown but environmental factors such as environmental toxins, dietary habits play an important role in prevention and treatment and lifestyle modifications are the most important therapeutic strategies in these patients. In a study was found that energy and macronutrient intakes in PCOS compared controls were similar. But PCOS group consumed more food items with high glycemic index and less legumes and vegetables than controls. In another study, hypocaloric diets significantly led to reduced body weight and androgen levels in women with PCOS and high fat high sugar diet not only demonstrated signs of metabolic impairment but they also developed polycystic ovaries and experienced irregular estrous cycling. The approach of the diet therapy in these patients must be to reach specific goals such as improving insulin resistance, metabolic and reproductive functions. Diet will be possible through the design of low-calorie diet to achieve weight loss or maintaining a healthy weight. At the same time, it is important that limit the intake of simple sugars and refined carbohydrates and intake foods with a low glycemic index, reduction of saturated and trans-fatty acids and attention to possible deficiencies such as vitamin D, chromium and omega-3.

Biography:

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