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Polycystic ovary syndrome - A challenge of the modern times

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Introduction

Polycystic ovary syndrome (PCOS) is spreading fast and affecting more and more women. If Rotterdam criteria are applied, up to 20% adult women are found to be having PCOS [1, 2]. PCOS is now being seen to affect girls as early as in peri pubertal age and even in childhood.

The etiology of PCOS is now found to be both genetic and environmental. Women with PCOS often have a diabetic parent and PCOS are frequently seen among siblings suggesting a genetic basis. The sedentary lifestyle, excessive intake of junk food and increasing prevalence of obesity in children has resulted in increase in the incidence of PCOS in the present times. Most women are overweight or obese and is insulin resistant with resulting hyperinsulinemia. Now even the lean PCOS phenotype has been found to have insulin resistance. Women with PCOS tend to go to overt diabetes about a decade earlier than their healthy counterparts. Apart from infertility, ovulatory dysfunction and hyperandrogenism which are the most prominent features, another disturbing factor in these women is alteration in lipid metabolism (dyslipidemia). Insulin resistance has been found to cause endothelial dysfunction independently and coupled with dyslipidemia now also observed in women with PCOS; these women are at higher risk for cardio vascular disease [2]. Overt diabetes, hypertension, metabolic syndrome, endometrial hyperplasia, endometrial cancers are frightening sequelae of PCOS. Obesity in most women with PCOS further predisposes them to gall stones, osteoarthritis, and breast cancer.

Fig 1- A 28 year old woman with facial hirsutism

The aim therefore is to nip in the bud, i.e. control PCOS in adolescence and early adulthood. A PCOS proforma recording the woman's – weight, height, body mass index, abdominal circumference, acne, acanthosis nigricans, extent and degree of hirsutism should be recorded. Relevant endocrinal assays to confirm the diagnosis include an LH/FSH, Serum Prolactin, and TSH. Free total testosterone, lipid profile, glycosylated haemoglobin and an ultrasonogram need to be done. A girl with marked hirsutism may also require a 17@hydroxy progesterone assay to rule out nonclassical congenital adrenal hyperplasia. The absence of increased ovarian volume and multiple small follicles in young children but in the presence of a deranged endocrinal profile should not deter us from thinking of PCOS. A glucose challenge test performed with oral 75 gram glucose followed by 2 hour blood glucose estimation [normal range 150- 200 mg %] is the single most important predictor of insulin resistance in PCOS presently.

The management is dual with lifestyle management and pharmaco therapy. Lifestyle changes are instituted to help the girl achieve optimum body weight. However even 5%-10% loss of weight improves metabolic profile and results in improvement in ovulatory function. Aerobic activity of 45-50 minutes daily is absolutely necessary.

A hypocaloric diet should be prescribed with 1000-1500 calorie reduction for obese women. A major dietary change involves decreased intake of carbohydrates with high glycemic index that includes sugar, rice, potatoes. The patient's diet should be substituted with carbohydrates with low glycemic index and high fibre such as whole grains like cracked wheat, barley and buckwheat. Fats should be restricted to equal to or less than 30% of total calories with a low proportion of saturated fat [3, 4]. Monosaturated and polyunsaturated oils which provide a mixture of omega 3-fatty acids has been found to improve the lipid profile and promote insulin sensitivity [2]. Fruits , vegetables and salads should fill half the plate at lunch and dinner time . Calorie intake should be distributed between several meals and aerated drinks and snacks should be avoided. Dairy products should be those with low calorie content. A dietary pyramid showing foods with high carbohydrate content, especially free sugars and refined flours depicted in the red zone can be used along with healthy food charts for counselling the girl child.

Drugs to improve to insulin sensitivity include metformin, thiozolides, berberine, myoinostol, d-chiroinositol, zinc, and Vitamin D3. Metformin has been tried in a large no of studies in PCOS and found to be beneficial in PCOS women with insulin resistance, as it enhances insulin sensitivity, helps in improvement of lipid profile, decreases hyperandrogenism, and results in resumption of ovulatory cycles [5]. Myoinositol and d -chiro-inositol are novel insulin sensitisers which improve the metabolic profile in women with PCOS [6]. A combination of myo and d-chiro inositol can be used in adolescent girls ; firstly because of its better tolerance as compared to metformin which causes gastric side effects like nausea , vomiting and secondly inositol being a member of vitamin B complex can be taken for a long time with no side effects .

Pharmacotherapy in women acts as an adjuvant initially in young women along with dietary modification and enhanced aerobic activity. A healthy dietary intake will however go a long way in maintenance of optimum weight and regular menstrual pattern.

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