POLYCYSTIC OVARIAN SYNDROME

Polycystic Ovarian Syndrome (PCOS) is a common gynecological condition. Classically defined the manifestations include irregular menstrual cycles, hirsutism, obesity and androgen excess [1]. Most commonly women with PCOS have elevated BMI and have associated insulin insensitivity and sometimes metabolic syndrome.

Recent studies conclude many PCOS women have associated family history of Type 2 Diabetes (75%), cardiovascular disease (71%) and acanthosis nigricans (66%). PCOS is a common disorder occurring in 5 – 10% of all women aged 12 – 45 years. Of patients with PCOS, 87% had a Body Mass Index (BMI) greater than 26 kg/m^2 (>25 defined as overweight, >30 defined as obese). PCOS is often associated with hyperinsulinemia which, if left unchecked, predisposes to type 2 diabetes and cardiovascular disease.

Virtually all symptoms of PCOS will be improved with significant weight loss. Weight loss is recommended for all women with PCOS. In many women with PCOS, weight loss alone is often associated with a reduction in serum testosterone concentration, resumption of ovulation, and pregnancy [2-4].

Treatment must be geared at the specific complaints of the patient.

Dysfunctional Uterine Bleeding & Anovulation—

The chronic anovulation seen in PCOS is associated with an increased risk of endometrial hyperplasia, dysfunctional uterine bleeding, and possibly endometrial cancer. The most common therapy for anovulation and associated abnormalities of uterine bleeding is Oral Contraceptive Pills (OCP's). OCP's provide contraception and cosmetic benefit. Oral contraceptives provide daily exposure to progestin, which antagonizes the endometrial proliferative effect of estrogen. Birth control pills are simple to take and often are sufficient to help normalize a patient's bleeding. For women with contraindications to OCP's, cyclic progestin therapy can be used. Provera is commonly prescribed ten days a month in doses of five or ten mg per day. Finally, metformin may be used to enhance cycle regularity and potentially lead to spontaneous ovulation.

Hirsutism—

Hirsuitism is the presence of unwanted hair without signs of virilization. Endocrine Society Clinical Practice Guidelines suggest an estrogen-progestin contraceptive as first-line pharmacologic therapy for most women with hirsuitism [5]. After six months, if additional response is desired, Spironolactone 50 to 100 mg twice daily is added. Finasteride is an alternative to Spironalctone. Lasers and other, non-pharmacologic alternatives, are available for problematic hirsuitism.

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Infertility—

Inability to conceive is related to anovulation. Treatment with metformin often leads to spontaneous ovulation. Clomid cycles are often effective in causing ovulation in PCOS patients. Approximately 80 percent of women with PCOS ovulate in response to clomiphene citrate, and approximately 50 percent conceive. Thiazolidinedione therapy may also be effective for induction of ovulation and can be combined with metformin.

More sophisticated therapies are also available. Desert Women's Care refers patients requiring these therapies out to Reproductive Endocrinologists as they require complicated cycle monitoring and can be associated with complications if improperly administered. Gonadotropin therapy leads to successful induction of ovulation in PCOS patients about 75% of the time and successful pregnancy 50% of the time. Pulsatile administration of Gonadotropin Releasing Hormone Agonist (GnRH) also leads to ovulation and pregnancy.

Non-pharmacologic therapy may also lead to successful ovulation--Laparoscopic surgery. Surgical approaches to restoring ovulation in women with PCOS date back to the 1930s [6]. The literature now contains reports of nearly 1000 women in whom partial ovarian resection or ablation was done via a laparoscopic approach in the hope of restoring some ovulatory function. Pregnancy has occurred in approximately 55 percent of women undergoing this procedure, a figure that compares favorably with conception rates after three to six cycles of gonadotropin therapy [7]. While these comparisons have been largely from uncontrolled case series, randomized controlled trials suggest that ovarian diathermy (electrocautery), when compared to gonadotropin therapy, results in similar success rates, but lower multiple gestation rates [8-11].

Obesity—

Obesity and insulin resistance — The first approach to obesity includes both diet and exercise. These recommendations are well know, seldom observed and, hence, often ineffective. Low carbohydrate diets (Adkins' Diet is a variation suggesting virtual elimination of carbohydrate consumption). Lower carbohydrates leads to less hyperinsulinemia, and therefore less insulin resistance. Bariatric surgery is another strategy for weight loss in women with PCOS.

Insulin lowering drugs include biguanides (metformin), thiazolidinediones (pioglitazone, rosiglitazone). These drugs may also reduce ovarian androgen production (and serum free testosterone concentrations).

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