



PIC QUESTION OF THE WEEK: 11/15/04

Q: Why would a 35-year-old “non-diabetic” woman receive a prescription for metformin (Glucophage)?

A: Polycystic Ovary Syndrome (PCOS) is a disorder characterized by ovarian enlargement and cyst formation as well as insulin resistance. The cysts are formed when the ovarian follicles do not release mature eggs into the fallopian tube. Symptoms of PCOS include: infrequent or no menstruation (amenorrhea), infrequent or no ovulation (anovulation), hyperandrogenism, weight gain, hyperlipidemia, hypertension, hirsutism, and acne. Currently, PCOS is thought to be linked to insulin resistance and hyperinsulinemia. Increased androgens and arrested ovulation are due to the effects of excess insulin in ovarian function. Past treatment has focused on use of oral contraceptives to reduce androgen levels and regulate menstruation. Newer therapies include insulin sensitizing agents such as metformin and pioglitazone. Metformin decreases insulin resistance and hyperinsulinemia. A meta-analysis of over twenty randomized controlled trials found that metformin was more effective than placebo in improving ovulation, increasing pregnancy rates, decreasing LDL cholesterol levels, decreasing androgens, and improving menstrual cycles. A typical dose of metformin would be 1500-2000 mg daily in divided doses. The most common adverse effects of metformin include nausea, vomiting, and diarrhea. The drug has only a modest effect on hirsutism. Oral contraceptives may be a better option for the treatment of hirsutism associated with PCOS. Although considered an “unlabeled” use, PCOS is one of the more common indications for metformin.

References:

Lord JM, Flight IHK, Norman RJ. Metformin in polycystic ovary syndrome: systematic review and meta-analysis. *Br Med J* 2003;327:951-5.

US Department of Health and Human Services. Polycystic ovary syndrome. <http://www.4woman.gov/faq/pcos.htm> (accessed 11/11/04).

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