

Polycystic Ovary Syndrome (PCOS) and Diabetes Mellitus

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PCOS refers to condition in which women have irregular menstruation and hyperandrogenism [1]. As, 60% of androgen is produced in ovary by LH-stimulated thecal cells and 40% within the adrenal gland [2]. Considerably, an excess in androgen doesn't lead to diminished production of ovarian androgens [3].

Somehow, PCOS present with six or more cysts 4 - 10 mm in diameter detected by ultrasonography of ovarian [4]. Since, pelvic ultrasonography is used to detect follicles in ovaries. Also, it is very common to form cyst in the follicle exists in the ovary, though, not every multifollicular ovaries develop PCOS. If the condition of polycystic ovary is concurrent with oligomenorrhea, it may increase the risk of developing PCOS [5,6] besides, practitioners should mention, ovarian cyst is not necessarily detected by ultrasonography in women with PCOS.

In PCOS, women's ability to produce egg could be affected. Therefore, abnormal number of cysts develop on the surface of the ovaries. These cysts include undeveloped eggs which may release eggs irregularly or even prevent releasing any eggs.

Androgen excess in PCOS lead to secondary amenorrhea. Overproduction of estrogen in PCOS women may cause endometrial hyperplasia, besides hyperandrogenemia in PCOS is risk factor of cardiovascular disorders [7]. Also, acne, hirsutism or frontal alopecia appear when androgens level in blood increases. Irregular periods, are symptoms related to PCOS as well. Also, PCOS contributes to infertility in about 70 - 80% of women as a reproductive disorder [8].

However, mild obesity is one of the main symptoms of PCOS and as evidence yield from recent studies showed, 35% to 50% of women with PCOS are obese [9]. Yet, practitioners should consider that most patients with PCOS have normal weight or even are underweight.

Also, about 20% of women at reproductive age are affected by PCOS [10]. Metabolic dysfunction as the clinical implication of PCOS including obesity, hyperinsulinemia and insulin resistance, increase risk of developing cardiovascular disease as well as diabetes mellitus. Some studies indicated the affection of androgen excess on the pathogenesis of insulin resistance in PCOS [11]. As studies showed, hyperandrogenism was seen in 70-80 % of women with PCOS [3]. Therefore, insulin resistance besides androgen excess are the main manifestation related to development of PCOS. Whenever the sensitivity of insulin decreases, it will concentrate exceedingly as well, which lead to reduced insulin stimulated glucose uptake [12]. Therefore, some recent studies indicated that insulin sensitizers provide effective treatment for hyperandrogenism as well as preventing diabetes mellitus and cardiovascular diseases as well [13] since, 60 - 80% of PCOS patients found to have type 2 diabetes mellitus (T2DM) [14].

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