Obesity and its link to polycystic ovary syndrome and infertility

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Obesity and its link to Polycystic Ovary Syndrome and Infertility Polycystic Ovarian Syndrome or PCOS is one of the most prevalent endocrinopathies, affecting 5-10% of women of reproductive age and is one of the commonest of anovulatory infertility (Aboulghar & Rizk 87; Allahbadia & Agrawal 157). This paper deems to tackle and explore the link between obesity, polycystic ovary syndrome and infertility. Polycystic Ovary Syndrome is a heterogeneous condition with concurrent symptoms, signs and biochemical features encompassing two of any of the following criteria such as oligo- and/or anovulation, clinical and/or biochemical hyperandrogenism and polycystic ovaries with the exclusion of other etiologies such as congenital adrenal hyperplasia due to 21-hydroxylase deficiency (Aboulghar & Rizk 87). Moreover, the polycystic ovary morphology as presented in an ultrasound scan include at least one of the following namely, either 12 or more follicles measuring 2-9 mm in diameter or increased ovarian volume > 10 cm3 (Aboulghar & Rizk 87). According to Allahbadia and Agrawal, obesity was one of the main characteristics of Polycystic Ovary Syndrome besides infertility and hirsutism (157). Obesity is a state characterized by excessive storage of triglycerides in adipose cells and is defined as having a BMI higher than 30 kg/m2 as defined by Aboulghar and Rizk (87). Numerous studies have focused on the role of obesity in the pathogenic process of Polycystic Ovary Syndrome or PCOS (Allahbadia & Agrawal 157). It is estimated that 40% to 60% of women with Polycystic Ovary Syndrome or PCOS are overweight or obese as stressed by Aboulghar and Rizk (87) and when present, obesity worsens the clinical presentation of PCOS (Allahbadia & Agrawal 157). Obesity results to a variety of medical complications and it has an adverse

effect on fertility according to Aboulghar and Rizk (87). Thus, in lieu with the assessment and treatment of infertility, women with a body mass index of more than 29 should be informed that they are likely to take longer to conceive and if not ovulating should be informed that losing weight is likely to increase their chance of conception (Aboulghar & Rizk 87). In addition, menstrual irregularity in obese women correlates with increasing BMI and increased truncal obesity, thereby contributing decreased fertility and even in ovulatory women; obesity appears to decrease fecundity (Aboulghar & Rizk 87). Changes in body weight play a crucial role in regulating menstrual cycles and reproduction as highlighted by Allahbadia & Agrawal (157). It is obvious that there are important links between obesity and pubertal development, irregular menstrual cycles, reduced spontaneous and induced fertility; usually, alterations in circulating sex hormones involving androgens, estrogens and those in sex hormone binding globulin or SHBG levels seem to underline the obesity-related menstrual and reproductive disorders as reiterated by Allahbadia and Agrawal (157). The exact etiology of Polycystic Ovary Syndrome or PCOS remains uncertain, the facts that the history of weight gain commonly precedes the onset of clinical manifestations, obese PCOS women have more severe hyperandrogenism, and the presence of anovulatory cycles, oligomenorrhea and/or hirsutism are evidently higher in obese than in normal-weight women; hence, this suggests a pathogenic role of obesity in the development of PCOS and related infertility (Allahbadia & Agrawal 157-158). Moreover, obesity in women with PCOS is also linked with adverse effects on the result of assisted reproductive technology treatments and an increased risk of miscarriage; thus, the pathogenesis of PCOS is

distinctive in obese and non-obese women, with insulin resistance and hyperinsulinemia playing a vital function in obese women (Allahbadia & Agrawal 158). Obesity is also associated with a more atherogenic lipid profile in women with PCOS and these changes consist of elevated triglycerides and lower high-density lipoprotein cholesterol or HDL-C as highlighted by Allahbadia and Agrawal (158). Metabolic syndrome, which is a constellation of factors encompassing glucose intolerance, dyslipidemia, hypertension and central obesity, is more prevalent in adolescent girls with PCOS wherein obesity, hyperandrogenemia and insulin resistance are principal risk factors (Allahbadia & Agrawal 158). Since obesity worsens the clinical presentation of PCOS by increasing insulin resistance and resulting in a further elevation of ovarian and adrenal androgens and of unbound testosterone, the treatment of obesity is one of the main goals of any therapy for PCOS (Allahbadia & Agrawal 159). Obese women are encouraged to lose weight for it represents the chief element for improved hyperinsulinemia and insulin resistance in obese PCOS women who are under energy restricted programs; moreover, it also has significant beneficial effects on androgen concentrations and related signs and symptoms (Allahbadia & Agrawal 161). The cost of care for obesity and infertility in women with PCOS are costly. Consequently, according to a study, overweight and obese subfertile women have a decreased likelihood of successful fertility treatment and their pregnancies are associated with more complications and higher costs (Oxford 246-254). Works Cited Aboulghar, Mohamed and Botros Rizk. Ovarian Stimulation. United States in America: Cambridge University Press, 2011. Allahbadia, Gautam N. and Rina Agrawal. Polycystic Ovary Syndrome.

United Kingdom: Anshan Ltd, 2007. Oxford. “ Economic Consequences of overweight and obesity in fertility: a framework for evaluating the costs and outcome of fertility care.” Human Reproduction Update. 16. 3 (2010): 246-254.