Egyptian Fertility Sterility Society

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Bariatric surgery for spontaneous ovulation in women with polycystic ovary syndrome (PCOS)

Prof. Ibrahim Mahrous, Al Azhar University

Dr. Mohamed El Sherbiny, MOH

What is known already?

Women with PCOS have a 15 times higher risk of anovulatory infertility and a 2–3 times higher risk for adverse pregnancy outcomes than women without PCOS. [1] The increased difficulty to conceive children has a negative effect on the psychological wellbeing of women with PCOS [2]. Obesity exacerbates many of the manifestations of PCOS [3]. Lifestyle modification is commonly recommended as the first-line treatment for obesity in women with PCOS [4]. Despite the beneficial effects of lifestyle modification on reproductive and cardio-metabolic outcomes, maintaining weight loss is a major challenge. [5] The effect size of pharmacotherapy as metformin and orlistat on reproductive outcomes is modest [6]. Thus, managing oligomenorrhoea or amenorrhoea and subfertility in women with PCOS and obesity remains a need large unmet clinical need. In cohort studies, bariatric surgery has improved menstrual regularity, hyperandrogenism, and cardiometabolic risk factors [7]. In a non-randomized trial of premenopausal women both with and without PCOS who underwent bariatric surgery, there was an improvement in menstrual irregularity in both groups, and this was more evident in women with PCOS.[8] Similar findings have been reported in other non-randomized trials [9&10]. However, in the absence of randomized controlled trials (RCTs), the first international evidence-based guidelines for assessment and management of PCOS in 2018 -and the updated one in 2023- considered bariatric surgery as an experimental therapy in women with PCOS, with risk-to-benefit ratios too uncertain to advocate it as therapy for fertility [11&12] .

What is New?

Recently, an opened -label multicenter RCT.[13] comparing the effect of bariatric surgery (Sleeve gastrectomy) versus medical care. In this trial, 80 women older than 18 years, with a diagnosis of PCOS based on the 2018&2023 international evidence-based guidelines for assessing and managing PCOS, and a BMI of 35 kg/m² or higher, were recruited from two specialist obesity management centers and via social media. Participants were randomly assigned at a 1:1 ratio to either vertical sleeve gastrectomy or behavioral interventions and medical therapy using a computer-generated random sequence by an independent researcher not involved with any other aspect of the clinical trial. The median age of the entire cohort was 31 years. The primary outcome was the number of biochemically confirmed ovulatory events over 52 weeks, and was assessed using weekly serum progesterone measurements.
This study reported that:

1- The median number of ovulations was 6 (IQR 3·5–10·0) in the surgical group and 2 (0·0–4·0) in the medical group.
2- Women in the surgical group had 2.5 times more spontaneous ovulations compared with the medical group (incidence rate ratio 2·5 [95% CI 1·5–4·2], p<0·0007).
3- There were more complications in the surgical group than the medical group, but without long-term sequelae or treatment-related deaths.

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Clinical Implications

Bariatric surgery is more effective than medical care for the induction of spontaneous ovulation in women with PCOS, obesity, and oligomenorrhoea or amenorrhoea. Bariatric surgery could, therefore, enhance the prospects of spontaneous fertility in this group of women.

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