



Middle East Fertility Society Middle East Fertility Society Journal

www.mefsjournal.org
www.sciencedirect.com



DEBATE

Should overweight or obese women be denied access to ART?

Comment by: Ahmed Badawy



KEYWORDS

Obesity;
Overweight;
ART;
BMI

Abstract Obesity has grown to epidemic proportions, and currently nearly half of the reproductive-age women are overweight or obese. According to the World Health Organization (WHO), 1.6 billion worldwide are overweight (BMI between 25 and 30 kg/m²) and 400 million are obese (BMI > 30 kg/m²). Over half of all women in the UK and 61% of women in USA are either overweight or obese. There are distinctly increased health risks and costs of obesity that led to a great argument about fertility treatment including assisted reproductive techniques (ART) in obese women.

© 2013 Production and hosting by Elsevier B.V. on behalf of Middle East Fertility Society.

1. Obesity and fertility treatment

We know that obesity is a definite contributor to the ovulatory problems mainly PCOS. Obesity impairs the ovarian response and thus, increases the dose of ovulatory agents. The success rate of ovulatory drugs, as regards pregnancy and live birth rates, may be compromised in the obese patients. Some reports revealed decreased success rates following assisted reproduction in obese women.

Nevertheless, many reports did not demonstrate a higher risk of negative outcomes such as cycle cancelation, fewer oocytes or embryos or low pregnancy rates in obese women. A large retrospective study on 1300 women undergoing IVF failed to settle a relationship between BMI and the rates of clinical pregnancy or live birth [2]. Maheshwari et al. [3], in a systematic review on the effect of overweight in women undergoing assisted reproductive techniques found that there was insufficient evidence to conclude that high BMI is associated with reduced live birth rate. Orvieto et al. [6] showed that obese patients who respond to ovarian stimulation, will have average conception rates.

It has been argued that providing fertility treatment to overweight and obese women is not cost effective due to reduced chances of success, higher risks of pregnancy loss and perinatal worries. Maheshwari and co workers [4] failed to show any significant differences in costs per live birth following ART in overweight and obese women compared with women with normal BMI.

The available data concerning obesity and poor reproductive outcomes incline to be from meta-analyses which are aggregated statistics unable to fine-tune for key confounders such as age and unable to provide reliable data on utilitarian outcomes such as live birth.

2. Obesity and pregnancy complications

Some reports demonstrated an increased miscarriage rate in obese women following spontaneous conception or assisted reproduction. However, removal of other confounding agents such as age and PCOS will show that miscarriage rate will not be higher in obese women undergoing ART [5].

Undoubtedly, obesity is associated with obstetric complications such as pre-eclampsia, gestational diabetes, induction of labor and Cesarean section. This risk is correct when observed in obese but not just overweight patients (BMI < 35 kg/m²).

Maternal obesity has been claimed to be associated with an augmented risk of structural anomalies. Callaway et al. [1], showed that the adjusted ORs for congenital anomalies were 1.25 (0.85–1.87) for BMI 25.01–30 kg/m², 1.58 (1.02–2.46)

Peer review under responsibility of Middle East Fertility Society.



Production and hosting by Elsevier

for BMI 30.01–40 kg/m² and 3.41 (1.67–6.94) for BMI > 40 kg/m² compared with women with normal weight. These data, however, need to be read in the framework of risks in other clinical conditions such as diabetes in women with normal BMI. Maternal obesity has been suspected of being responsible for adult disease in the offspring, the exact mechanism for such programming imperfections has yet to be convincingly proven.

3. BMI cut-off is impractical

The evidence underlying recommendations for BMI cut-off for providing fertility treatment is weak and many of these BMI cut off values are random and perhaps based on experts' opinions. The National Institute of Clinical Excellence (NICE) guideline suggests that it is appropriate to achieve a BMI of less than 29 kg/m² prior to fertility treatment. The British Fertility Society (BFS) guideline endorses that fertility treatment should be postponed until a woman's BMI is less than 35 kg/m², but a BMI < 30 kg/m² is better in women under 37 with normal FSH. In New Zealand, clinical priority access criteria implemented in 2000, confines women with BMI > 32 kg/m² from having fertility treatment. This controversy means that a strict BMI rule is impracticable and unenforceable.

Although many studies advocate that weight loss improves reproductive performance, this is difficult to accomplish for many women. Conventional approaches such as lifestyle amendment, dietary control, increasing physical activity and pharmacotherapy such as metformin or orlistat produce diverse results. Most fruitful weight loss intrusions result in 5–10 kg weight loss per woman and this may be insufficient to permit them to cross a subjective BMI brink.

4. Conclusion

Overweight and obesity is common in women of reproductive age. Those who are choosing to postpone childbearing for the

weight reduction should balance the negative effects of aging versus obesity on fertility and perinatal outcomes. In women over 36, age has been shown to employ a stouter negative effect on oocyte number, number of mature and fertilized oocytes, clinical pregnancy and live birth rates. However, there is no strong evidence for the association between obesity and live birth in infertile women. Thus, there is insufficient proof to refute women fertility treatment on grounds of BMI. Weight loss should be invigorated wherever possible and pre-conception counseling should be accessible.

References

- (1) Callaway LK, Prins JB, Chang AM, McIntyre HD. The prevalence and impact of overweight and obesity in an Australian obstetrics population. *Med J Aust* 2006;184:56–9.
- (2) Dokras A, Baredziak L, Blaine J, Syrop C, VanVoorhis BJ, Sparks A. Obstetric outcomes after in vitro fertilization in obese and morbidly obese women. *Obstet Gynecol* 2006;108:61–9.
- (3) Maheshwari A, Stofberg L, Bhattacharya S. Effect of overweight and obesity on assisted reproductive technology – A systematic review. *Hum Reprod Update* 2007;13:433–44.
- (4) Maheshwari A, Scotland G, Bell J, McTavish A, Hamilton M, Bhattacharya S. The direct health services costs of providing assisted reproduction services in overweight or obese women: a retrospective cross-sectional analysis. *Hum Reprod* 2009;24:633–9.
- (5) Metwally M, Ong KJ, Ledger WL, Li TC. Does high body mass index increase the risk of miscarriage after spontaneous and assisted conception? A meta-analysis of the evidence. *Fertil Steril* 2008;90:714–26.
- (6) Orvieto R, Meltzer S, Nahum R, Rabinson J, Anteby EY, Ashkenazi J. The influence of body mass index on in vitro fertilization outcome. *Int J Gynaecol Obstet* 2009;104:53–5.

Ahmed Badawy

Mansoura University, Egypt

E-mail address: ambadawy@yahoo.com