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RESEARCH LETTER

Are women with obesity and infertility willing to attempt weight loss prior to fertility treatment?

KEYWORDS

Obesity; Infertility; Weight loss

Summary

Objective: To assess attitudes towards weight loss interventions in patients seeking infertility treatment.

Methods: We evaluated prior weight loss experiences, attitudes towards future interventions by body mass index (BMI), and willingness to delay fertility treatment for weight loss interventions stratified by BMI using logistic regression amongst women <45 years old with infertility over three months or recurrent pregnancy loss.

Results: The average age of our convenience sample of respondents (148 of 794 eligible women, 19%) was 34.5 years old, with a mean BMI of $26.7 \pm 7.4 \, \text{kg/m}^2$, including 37 with a BMI >30 kg/m² (25%). Most women had attempted conception over 1 year. The majority of women with overweight or obesity were attempting weight loss at the time of survey completion (69%). While 47% of these women reported interest in a supervised medical weight loss program, 92% of overweight women and 84% of women with obesity were not willing to delay fertility treatment more than 3 months to attempt weight loss.

Conclusion: Most women with obesity and infertility in our population are unwilling to postpone fertility treatment for weight loss interventions.

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Introduction

Over one-third of women in the United States are affected by obesity (BMI $> 30 \text{ kg/m}^2$), which can be associated with infertility, poor response to infertility treatment, and adverse obstetric outcomes. [1]. As a result, a larger proportion of women with obesity seek fertility care than women of normal weight [2]. When women with obesity undergo assisted reproduction with in vitro fertilization (IVF), their cycles appear to result in fewer live births [3,4]. Furthermore, maternal obesity is an independent risk factor for obstetric complications such as gestational diabetes, gestational hypertension, preeclampsia, foetal macrosomia, and caesarean delivery [5,6]. While the potential benefits of pre-conception weight loss on fertility outcomes are still being investigated [7-9], the American Congress of Obstetricians and Gynecologists (ACOG) recommends preconception Maternal Fetal Medicine (MFM) consultation for women with obesity, focused on obesity-related pregnancy complications and consideration of pre-pregnancy weight loss [10]. We previously found that despite MFM consultation, patients with obesity are unlikely to delay attempting conception [11]. In this study, we therefore sought to investigate weight loss practices and attitudes in new patients presenting for infertility care.

Methods

We surveyed women ≤45 years old with infertility or recurrent pregnancy loss presenting to the Brigham and Women's Center for Infertility and Reproductive Surgery between 10/14/2015 and 11/15/2016. We assessed prior weight loss experiences, atti-

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Research Letter

tudes towards future interventions by body mass index (BMI), and willingness to delay fertility treatment for weight loss interventions and obtained demographic and clinical data with medical record review. We investigated the relationship between body mass index (BMI; kg/m²), age, duration of infertility, and willingness to delay fertility treatment for weight loss interventions in women with BMI \geq 25, adjusting for age and duration of infertility using logistic regression. BMI categories (normal weight, BMI 18–24.9; overweight, BMI 25–29.9; and obese, BMI \geq 30.0) were defined per World Health Organization guidelines [12]. Statistics were performed within REDCap, JMP v13 (SAS, Cary, NC), and SAS v9.2 (Cary, NC).

Results

We obtained 148 completed surveys during the study period (of 794 eligible new patients, 19%). Table 1 demonstrates the demographic and reproductive characteristics of the respondents. Over half of all women reported trying to lose weight at some point in the past (53%), most commonly with the MyFitnessPal® application (54%) or low carbohydrate diets (54%). Seventy percent of overweight women and 68% of women with obesity were currently attempting weight loss. Only 7 respondents (6%) reported prior participation in a medically supervised weight loss program, but 47% of overweight women and women with obesity were interested. Respondents believed that with such a program they would lose more weight (46%) over a shorter period of time (35%) than attempting weight loss independently, but time commitment and expense were cited as potential concerns. Importantly, 92% of overweight women and 84% of women with obesity were not willing to delay fertility treatment over 3 months to lose weight. There was a trend towards increased willingness to delay pregnancy for weight loss with increasing BMI, though this association did not reach statistical significance (aOR 1.05 per kg/m², CI 0.97–1.14; Table 2). There was no impact of age or duration of infertility on willingness to delay pregnancy for weight loss.

Discussion

Multiple professional societies recommend preconception weight loss counselling for women with obesity to both minimise risks to patients during IVF and pregnancy, and to improve pregnancy outcomes. Furthermore, many fertility centres [2]

Table 1 Demographic and reproductive characteristics of survey responders (n = 148).^a

tics of survey responders (n = 148).	
Age (years)	34.5 ± 5.0
BMI ^c 18.5-24.9	34.5 ± 4.5
BMI 25-29.9	$\textbf{35.0} \pm \textbf{4.9}$
$BMI \ge 30$	$\textbf{34.3} \pm \textbf{6.2}$
BMI	26.7 ± 7.4
Ethnicity	
Hispanic	12 (8%)
Non-Hispanic	133 (90%)
Unknown	3 (2%)
Race	, ,
Caucasian	98 (66%)
Asian	31 (21%)
Black or African	12 (8%)
American	, ,
Unspecified	10 (7%)
Current smoker	5 (3%)
Ever smoker	21 (14%)
Education level	_ ((, , , ,
Did not complete	2 (1%)
high school	_ (.,,,
High school	6 (4%)
Some college	18 (12%)
Associate or	45 (31%)
Bachelor's degree	45 (51/0)
Graduate degree	77 (52%)
Gravidity	1.2 ± 1.7
Parity	0.4 ± 0.8
Time reported actively	14 (12, 24)
	14 (12, 24)
attempting	
pregnancy, months ^b	14 (10, 24)
BMI ^c 18.5–24.9	14 (10, 24)
BMI 25–29.9	12 (9.5, 17)
BMI ≥ 30	18 (12, 36)
Prior reported ART	50 (34%)
Clomid	29 (20%)
IVF 	17 (11%)
IUI	15 (10%)
None/unknown	98 (66%)
Infertility diagnosis	10 (200)
Male factor	48 (32%)
Unex-	48 (32%)
plained/idiopathic	
Diminished ovarian	37 (25%)
reserve	
Ovulatory	27 (18%)
dysfunction	
Tubal factor	11 (7%)
Uterine factor	11 (7%)
Endometriosis	7 (5%)
Other, including	17 (11%)
recurrent pregnancy	
loss	
No follow up	1 (1%)
^a Values reported as mean + SD or as frequency (%)	

^a Values reported as mean \pm SD or as frequency (%).

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^b Values reported as median (IQR).

^c Body mass index (kg/m²).

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