WEIGHT LOSS TRENDS IN OBESE PATIENTS SEEKING INFERTILITY TREATMENT

Lydia Yang, B.A.,[1] Prapti Singh D.O., M.S.,[2] Karen M Summers, MPH CHES,[2] and Eyup Hakan Duran, M.D.[2]

(1) Department of Obstetrics and Gynecology, Carver College of Medicine / University of Iowa, Iowa City, IA, USA (2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, University of Iowa, Iowa City, IA

BACKGROUND: Obesity and infertility rates are increasing in the US, and they are related.[1-3] The American Society for Reproductive Medicine (ASRM) advises achieving sustained weight loss in fertility treatment.[4] General lifestyle counseling so far has demonstrated limited effectiveness.[5]

OBJECTIVES: To assess the impact of pursuing infertility work-up and treatment on weight loss in obese patients. To identify how often these patients received weight loss counseling and contributing factors.

MATERIALS AND METHODS: A retrospective chart review was conducted on all patients with BMI ≥ 30 kg/cm^2 seeking infertility treatment at the University of Iowa Healthcare (UIH) Reproductive Endocrinology and Infertility (REI) Clinics between 1/1/2020 – 12/29/2022. Exclusion criteria were patients with BMI<30, not actively seeking infertility treatment, previously pursued in-vitro fertilization (IVF) treatment, and requiring the use of donor oocytes. Of note, our clinic has a policy to offer diagnostic but not treatment services to patients with BMI at or over 50. We collected date of birth, race, ethnicity, weight, height, past medical history, gravidity and parity, whether weight loss counseling offered, type of counseling received, referrals placed, Assisted Reproductive Technology (ART) method used if any, pregnancy outcomes, and weight at each visit. All data was recorded using RedCap electronic data capture tools. Data refinement and analysis was completed with SPSS. For analysis purposes, patient BMI was stratified into six categories, between 30 and 55+. Welch tests with Tukey post hoc tests and Chi-square analysis with post hoc z tests were performed.

RESULTS**:** A total of 1528 patients were identified, of which,1046 met our inclusion criteria and were included in our review. At their initial visit, mean ± standard deviation (SD) patient age was 31.8 ± 5.38 years, and BMI was 38.7 ± 6.87 kg/cm^2. The highest proportion of patients was in the BMI category between 30-34.99 (35.6%) (Table 1.). Thirty nine percent concurrently had PCOS, 15.2% had hypothyroidism, 11.7% had hypertension, and 6.1% had diabetes mellitus (Table 2.). Age, gravidity and parity were similar between patient groups, who did and did not receive weight loss counseling. There was a statistically significant difference in prevalence of weight loss counseling at the initial visit between BMI categories, the higher the patient BMI, the more likely they were to receive weight loss counseling (Table 3.). Patients that received weight loss counseling during their initial visit were more likely to lose weight (0.68 ± 4.55 kg lost between initial and final weight) during their further visits compared to patients that did not (0.27 ± 3.94 kg gained between initial and final weight p=0.002). Patients in the highest two BMI categories had greater weight loss compared to those in other categories, although the mean weight loss was less than 2 kgs.

CONCLUSIONS**:** Weight loss counseling appears effective for obese infertility patients, with a modest impact and with greater efficacy on severely obese individuals.

FIGURES:

Table 1.

BMI Category	30-34.99	35-39.99	40-44.99	45-49.99	50-54.99	55+
N (%)	372 (35.6)	294 (28.1)	202 (19.3)	105 (10.0)	51 (4.9)	24 (2.3)

Table 2.

Past Medical History[1] (# (%))				
Diabetes Mellitus	**Hypertension**	**Polycystic Ovarian Syndrome**	**Hypothyroidism**	**Other[2]**
64 (6.1)	123 (11.7)	409 (39.0)	159 (15.2)	141 (13.5)
[1]Patients may have more than one diagnosis, total will not equal 100% [2]Comprehensive list can be added in appendix//Did not list PMHs that appeared in less than 5% of patients				

Table 3.

BMI Category	30-34.99	35-39.99	40-44.99	45-49.99	50-54.99	55+	p
Any documented weight loss counseling at initial visit (%)	52 (14.0) c,d,e,f	53 (18.0) c,d,e,f	68 (33.7) a,b,d,e,f	47 (44.8) a,b,c,e,f	43 (84.3) a,b,c,d	22 (91.7) a,b,c,d	<.001

[A] Differs significantly from BMI 30-34.99 group at .05 level
[b] Differs significantly from BMI 35-39.99 group at .05 level
[c] Differs significantly from BMI 40-44.99 group at .05 level
[d] Differs significantly from BMI 45-49.99 group at .05 level
[e] Differs significantly from BMI 50-54.99 group at .05 level
[f] Differs significantly from BMI 55+ group at .05 level

FINANCIAL SUPPORT (related to research):

Lydia Yang-None-enrolled in the medical school

Prapti Singh-None-employed by division

Karen Summers- None-employed by division

Eyup Hakan Duran- None-employed by division

Divisional funding (Molinaro Blonigan Fund) used for assistance with Epic query

REFERENCES:

1. Schneider E, Hamer O, Smith C, Hill J. Weight loss interventions for improving fertility: a synthesis of current evidence. Pract Midwife. 2024;27(2):34-39.
2. Carson SA, Kallen AN. Diagnosis and Management of Infertility: A Review. JAMA. 2021;326(1):65-76. doi:10.1001/jama.2021.4788
3. Nelson SM, Fleming R. Obesity and reproduction: Impact and interventions. Current Opinion in Obstetrics and Gynecology. 2007;19(4):384-389. doi:10.1097/GCO.0b013e32825e1d70
4. Obesity and reproduction: a committee opinion. Fertility and Sterility. 2015;104(5):1116-1126. doi:10.1016/j.fertnstert.2015.08.018
5. Legro RS, Hansen KR, Diamond MP, et al. Effects of preconception lifestyle intervention in infertile women with obesity: The FIT-PLESE randomized controlled trial. *PLoS Med*. 2022;19(1):e1003883. Published 2022 Jan 18. doi:10.1371/journal.pmed.1003883