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OBESE WOMEN SEEKING MEDICAL VERSUS SURGICAL WEIGHT REDUCTION: DO PELVIC FLOOR DISORDERS MAKE A DIFFERENCE?

Hypothesis/Aims of Study: The aims of this study were to determine if obese women seeking drastic weight reduction (i.e. surgical) have higher rates of PFD than those seeking medical weight reduction. We hypothesized that obese women seeking surgical weight reduction would have a higher prevalence of PFD and more bother related to PFD than obese women seeking only medical weight loss.

Study design, materials and methods: A validated questionnaire identifying PFD including pelvic organ prolapse (POP), stress urinary incontinence (SUI), overactive bladder (OAB), and anal incontinence (AI) was administered to a convenience sample of 164 obese (body mass index [BMI] $\geq$ 30 kg/m^2) women enrolling in a medical weight loss program. Responses from these women were compared to those from a cohort of 82 obese women enrolling in a surgical weight loss program. Degree of bother for each PFD was assessed using a 100 mm visual analog scale (VAS). T-tests were used to compare mean VAS scores between those enrolled in the medical versus surgical weight loss programs. Chi-squared and Mann Whitney U tests were used to compare the demographic and clinical characteristics of the two groups, including the prevalence of PFD. Multivariable logistic regression analysis was used to assess the relative impact of each PFD on enrollment in a medical versus surgical weight loss program while controlling for confounding variables. Associations with a two-sided p-value of $\leq$ 0.05 were considered significant. Power calculations assumed that women enrolled in a surgical weight loss program would have at least 10 mm higher degree of bother on VAS compared compared to women enrolled in a medical weight loss program. With these assumptions, 82 women enrolled in the surgical weight loss program and 164 women in the medical weight loss program had greater than 99% power to detect a significant difference at the 0.05 level. Institutional review board approval and informed consent were obtained.

RESULTS: The mean age ($\pm$ SD) of the women seeking medical (n=164) and surgical (n=82) weight loss (n=164) was 48.73 ($\pm$ 12.47) and 41.90 ($\pm$ 12.18) years respectively, p<0.05. The mean BMI of the women seeking medical and surgical weight loss was similar between the two groups (39.23 $\pm$ 7.16 and 39.61 $\pm$ 6.26 kg/m,^{2} p= 0.67). The prevalence of SUI was significantly lower in the medical weight loss group than in the surgical weight loss group (21% vs. 34%, p<0.05) (Table 1). However, the prevalence of POP, OAB, AI and any one or more PFD in those seeking medical weight reduction was not significantly different than those seeking surgical weight reduction (POP 7% vs. 4%, OAB 15% vs. 12%, AI 25% vs. 27%, and any PFD 42% vs. 48%). Although the prevalence of SUI was overall lower in women seeking medical weight loss, they did have significantly higher degree of bother related to SUI compared to women seeking surgical weight loss (68.95 $\pm$ 13.91 vs. 62.23 $\pm$ 11.89, p < 0.05.) (Table 1). While women seeking medical and surgical weight loss had similar prevalence rates for POP, there was significantly higher degree of bother related to POP in women seeking surgical weight loss compared to medical weight loss (86.00 $\pm$ 11.14 vs. 60.91 $\pm$ 20.13, p<0.05).

After adjustment for age, race, mode of delivery, depression, smoking, hormone and menopause status, and prior pelvic surgery (those variables significant in univariate analysis), enrollment in the surgical weight loss program was positively associated with SUI (OR, 95% CI 2.4, 1.05-5.52, p<0.05), and past smoking (OR, 95% CI 5.5, 2.12-14.11 compared to no smoking history). Enrollment in the surgical weight loss program was negatively associated with age (OR, 95% CI .95, .91-.99, p<0.05), pelvic surgery (OR, 95% CI .29, .12-.73, p<0.05), and current smoking (OR, 95% CI .06, .01-.30 compared to no smoking history) compared to medical weight loss enrollees. Similar regression models were analyzed for each of the other PFD, and any one or more PFD, with no differences in odds for the confounders, and no significant differences in PFD between the two groups.

INTERPRETATION OF THE RESULTS: Prevalence of PFD was high in both groups of women seeking weight reduction. Although the prevalence of SUI was higher in those seeking surgical weight reduction, the difference in the degree of bother related to this PFD was not clinically meaningful. Albeit not statistically different, the prevalence of POP was higher in those seeking medical weight reduction, however they were less bothered by their symptoms. There were no other meaningful differences between the two groups with respect to the other PFD. After controlling for confounding factors, the prevalence of SUI was higher in the group seeking surgical weight reduction, with no other significant associations between the other PFD and type of weight reduction. There are many reasons, including personal and economic, that may influence a decision to proceed with surgical versus medical weight reduction. It appears from these data that SUI may be the only PFD significantly related to this decision making process.

CONCLUDING MESSAGE: Although overall prevalence of SUI appears to be higher in women seeking surgical weight reduction, there were no other significant differences in the other PFD after controlling for confounding factors. There were no clinically relevant differences in bother related to PFD with the exception of POP. Although prevalence of PFD is high in both populations, it appears that only the prevalence of SUI, and not the other PFD, is significantly related to type of weight reduction sought.

TABLE 1. Prevalence and degree of bother (mean VAS, mm ± SD) for pelvic floor disorders in obese women seeking medical (n=164) and surgical weight loss (n=82).

CONDITION	MEDICAL WEIGHT REDUCTION n=164, n(%)	SURGICAL WEIGHT REDUCTION N=82, n(%)	p VALUE
PELVIC ORGAN PROLAPSE	11/164 (7%)	3/82 (4%)	0.331*
VAS	60.91 $\pm$ 20.13	86.00 $\pm$ 11.14	0.029†
STRESS URINARY INCONTINENCE	34/164 (21%)	28/82 (34%)	0.022*
VAS	68.95 $\pm$ 13.91	62.23 $\pm$ 11.89	0.045†
OVERACTIVE BLADDER	24/164 (15%)	11/82 (12%)	0.796*
VAS	73.15 $\pm$ 10.75	73.89 $\pm$ 11.86	0.862†
ANAL INCONTINENCE	41/164 (25%)	22/82 (27%)	0.757*
VAS	41.84 $\pm$17.53	44.09 $\pm$ 18.52	0.641†
ANY PELVIC FLOOR	69/164 (42%)	39/82 (48%)	0.414*

DISORDER			

*Chi-squared analysis. †T-test. VAS=visual analog scale.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**University of California San Diego and Kaiser Permanente Southern California Institutional Review Boards**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**