

## IS BARIATRIC SURGERY THE ANSWER TO URINARY INCONTINENCE IN OBESE WOMEN?

### Hypothesis / aims of study

Obesity is a known risk factor for urinary incontinence (UI). A moderate (8%) weight loss was previously reported to be associated with a significant decrease in both stress UI (SUI) and urgency UI (UUI) episodes [1]. However, as with any other life style intervention, clinical outcomes of behavioral weight loss programs depend on various factors, such as severity of symptoms, self-motivation, social support, medical status, etc. Consequently, long-term adherence to such programs is usually poor, and currently, bariatric surgery is the most effective tool to achieve long-term weight reduction. To date, only a few studies have been carried out to investigate the effect of bariatric surgery on UI. The aim of our study was to assess the impact of significant weight loss on UI among women undergoing bariatric surgery.

### Study design, materials and methods

Fifty consecutive obese women who underwent a laparoscopic sleeve gastrectomy in one university-affiliated tertiary medical center were prospectively enrolled. The study protocol was approved by the local hospital Helsinki committee. All women completed validated UI, lower urinary tract symptoms (LUTS), quality of life (QOL) and sexual questionnaires (ICIQ-UI, BFLUTS-SF, PFDI-20, PISQ-12), before and six months after surgery. A positive answer to the question "How often do you leak urine?" on the ICIQ-UI questionnaire was used to define the presence or absence of UI. Results were analyzed statistically by the student's t-test for continuous data and Fisher exact test for categorical data. Values of  $P < 0.05$  were considered significant.

### Results

Forty-seven women (mean age  $42 \pm 12.1$ ; mean parity  $1.9 \pm 1.7$ ) completed all pre and postoperative questionnaires. Mean body mass index (BMI) before and six months after surgery was  $42 \pm 4.9$  and  $33.3 \pm 4.6$ ; respectively. Preoperatively, 20 (43%) women had UI, 11 of whom had SUI, seven had mixed urinary incontinence, and two others had UUI (55%, 35%, and 10% of UI cases; respectively). Baseline clinical characteristics of patients with versus without preoperative UI were similar except for older age of the incontinent patients ( $46.6 \pm 11.2$  versus  $38.6 \pm 11.8$  years, respectively;  $P = 0.01$ ). Overall, surgically induced weight loss was associated with statistically significant improvement in all UI and QOL parameters in all of the investigated questionnaires (Table 1). Specifically, the total score of the ICIQ-UI questionnaire decreased significantly from  $9 \pm 3.5$  preoperatively to  $3.9 \pm 4$  postoperatively. Further, eight (40%) patients reported complete resolution of their UI symptoms following weight loss. Interestingly, sexual function scores did not vary after surgery.

### Interpretation of results

Surgically induced weight loss resulted in resolution of UI in up to 40% of women and subsequent improvement in related QOL. Nevertheless, sexual function of these women was not improved postoperatively.

### Concluding message

Significant weight loss following bariatric surgery is associated with a decrease in UI frequency and severity. Larger studies with longer follow up are required to investigate the possible impacts of bariatric surgery on various aspects of LUTS as well as pelvic floor function.

Table 1:

Mean±SD	Incontinent women (N=20)			Continent women (N=27)		
	Baseline	Follow up	P	Baseline	Follow up	P
Age (years)	46.6±11.2			38.6±11.8		
BMI	42.6±5.2	33.3±4.9	<0.001	41.7±4.6	33.2±4.3	<0.001
<b>ICIQ-UI:</b>						
Frequency	1.9±1.2	0.9±1.2	0.009	0	0	
Amount	2.5±1.1	1.3±1.3	0.003	0	0	
VAS	4.5±2.4	1.7±2.3	<0.001	0	0	
Total score	9±3.5	3.9±4	<0.001	0	0	
<b>BFLUTS:</b>						
FS	4.6±2.3	2.1±1.4	<0.001	2.95±1.9	2.2±2.4	NS
VS	2±1.8	1.5±2.2	NS	1.1±1.1	1.2±2	NS
IS	3.3±2.3	1.4±1.5	0.004	0.4±0.6	0.6±1.8	NS
Sex	0.7±1.6	0.5±1.1	NS	0	0	NS
QOL	3.7±3.2	1.7±1.9	0.01	0.4±0.8	0.5±1.5	NS
<b>PISQ12:</b>	2.9±0.7	2.9±0.6	NS	3.3±0.5	3.3±0.3	NS

NS non-significant

#### References

1. Subak LL, Wing R, Smith West D, et al. Weight loss to treat urinary incontinence in overweight and obese women. N Engl J Med 2009; 360:481-490.

#### Disclosures

**Funding:** None **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Helsinki committee-Wolfson Medical Center, Israel **Helsinki:** Yes **Informed Consent:** Yes