

## MENOPAUSAL STATUS DOES AND BMI DOES NOT INFLUENCE TO OUTCOME OF MIDURETHRAL SLINGS.

### Hypothesis / aims of study

The prevalence of SUI increases with age, with a typical rate in young adults ranging from 20 to 30%, reaching 30–40% around middle age with maximum around 50% after menopause [1]. Chronically increased stress on the pelvic floor is generally regarded as causally related to the increased prevalence of urinary incontinence in obese women as compared to normal-weight women [2]. To date results presented in a number of papers are ambiguous and do not indicate clearly if the increased Body Mass Index (BMI) or menopausal status affects the clinical outcome of midurethral intravaginal sling surgery. The purpose of this study was to assess the influence of female menopausal status, overweight and obesity on clinical efficacy of retropubic and transobturator suburethral tapes for the surgical treatment of female stress urinary incontinence (SUI).

### Study design, materials and methods

From January 2003 to December 2005 611 patients underwent clinical and urodynamic evaluation before surgical treatment for SUI. The criteria for enrolment into the study was stress urinary incontinence as indicated by a full clinical examination. The study group was free of any other gynecological diseases, or vaginal prolapse (only patients in stage 0 and I according to the POP-Q scale were included into the study). Urodynamic studies were performed according to International Continence Society standards. A total 537 patients were included into this study. Patients were allocated into two study groups using a 1:1 randomization to retropubic (IVS 02) or transobturator (IVS 04) sling placement. After 18 months 398 women were available for follow-up efficacy evaluation at tertiary academic center. 201 patients underwent retropubic and 197 transobturator sling placement surgery. Women were divided into three groups: normal BMI (18.5 – 24.9), overweight (BMI 25 – 29.9) and obese (BMI > 30). Patients were considered postmenopausal based on absence of menstrual bleeding for more than six months and plasma FSH concentration  $\geq$  30. Patients were considered totally cured when they were free of all stress urinary incontinence symptoms and cough tests in the supine and standing positions were negative. Statistical analysis was performed using Statistica package version 7.1 (StatSoft, Poland).

### Results

Patients demographic and urodynamic parameters were similar in both groups. We found that there was no statistically significant difference in clinical efficacy between the two procedures ( $\chi^2 = 1.88$ ,  $p = 0.39$ ). In IVS-02 group 75.1% patients ( $n = 151$ ) remained dry (cured), whereas in IVS-04 group 74.1% patients ( $n = 146$ ) remained dry. Very interesting results were found when menopausal status was used as differentiating parameter. The 18 months efficacy calculated for patients operated via retropubic route was significantly lower for postmenopausal patients (Table 1). On the contrary transobturator sling is equally effective in both groups (Table 2).

Our results also indicate that there is no statistically significant correlation between BMI and long term clinical outcome of sling surgery ( $\chi^2 = 7.19$ ,  $p = 0.13$ ; Table 3). Moreover we also did not find the influence of BMI on efficacy of either IVS 02 or IVS 04 midurethral tape (Table 4 and 5).

Table 1. Efficacy of IVS 02 sling stratified by patients' menopausal status.

	premenopausal	postmenopausal	
Cured (n/%)	70 (85.4%)	81 (68.1%)	$\chi^2 = 9.06$ $p = 0.01^*$
Improved (n/%)	10 (12.2%)	24 (20.2%)	
Failure (n/%)	2 (2.4%)	14 (11.7%)	
Total	82	119	

Table 2. Efficacy of IVS 04 sling stratified by patients' menopausal status.

	premenopausal	postmenopausal	
Cured (n/%)	57 (79.2%)	89 (71.2%)	$\chi^2 = 2.57$ $p = 0.28$
Improved (n/%)	10 (13.9%)	18 (14.4%)	
Failure (n/%)	5 (6.9%)	18 (14.4%)	
Total (n/%)	72	125	

Table 3. Clinical effectiveness of IVS 02 and IVS 04 ( $n = 398$ ) by BMI.

BMI	18.5 – 24.9	25.0 – 29.9	$\geq 30$		
Effect	Cured	70 (83.3%)	122 (75.8%)	105 (68.6%)	$\chi^2 = 7.19$ $p = 0.13$
	Improved	10 (11.9%)	22 (13.7%)	30 (19.6%)	
	Failure	4 (4.8%)	17 (10.5%)	18 (11.8%)	
	Total	84	161	153	

Table 4. Clinical effectiveness of IVS 02 by BMI.

BMI	18.5 – 24.9	25.0 – 29.9	$\geq 30$		
Effect	Cured	33 (80.5%)	64 (80.0%)	54 (67.5%)	$\chi^2 = 7.80$ $p = 0.1$
	Improved	6 (14.6%)	11 (13.8)	17 (21.2%)	
	Failure	2 (4.9%)	5 (6.2%)	9 (11.3%)	
	Total	41	80	80	

Table 5. Clinical effectiveness of IVS 04 by BMI.

BMI		18.5 – 24.9	25.0 – 29.9	≥ 30	
Effect	Cured	37 (86.0%)	58 (71.6%)	51 (69.9%)	$\chi^2= 5.02$ $p=0.29$
	Improved	4 (9.3%)	11 (13.6%)	13 (17.8%)	
	Failure	2 (4.7%)	12 (14.8%)	9 (12.3%)	
	Total	43	81	73	

#### Interpretation of results

Based on our data from 18 months follow up the efficacy of the retropubic route appears to be significantly more efficient in the premenopausal compared to postmenopausal patients ( $p=0.01$ ). Transobturator slings are equally effective despite menopausal status ( $p=0.28$ ). On the other hand BMI does not influence the clinical effectiveness of both types of sling.

#### Concluding message

Our results suggests that in postmenopausal patients retropubic sling is less effective in the treatment of urinary incontinence whether transobturator route, as a more safe surgical procedure, should be advised in obese patients.

#### References

1. Hannestad YS, Rortveit G, Sandvik H, Hunskaar S. J Clin Epidemiol 2000;53:1150–7
2. Norton P, Brubaker L. Lancet. 2006; 367: 57–67

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<b>Was this study approved by an ethics committee?</b>	Yes
<b>Specify Name of Ethics Committee</b>	Ethics Committee of Medical University of Lublin
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	Yes