

ARE URODYNAMIC INVESTIGATIONS A GOOD PROGNOSTIC TOOL FOR THE OUTCOME OF TVT?

Hypothesis / aims of study

Urodynamic investigations are performed before almost all surgical procedures for stress urinary incontinence (SUI). As a result of the urodynamics surgery may not be the first therapeutical option. This study was performed to investigate whether the use of preoperative urodynamics lead to a better postoperative result.

Study design

A multi center prospective cohort study of 809 patients undergoing a TVT procedure. The current follow-up is two years.

Materials and methods

Between March 2000 and September 2001, patients with an indication for the TVT procedure were asked to participate in this study. The procedures took place in 41 different hospitals in which 54 gynecologists and urologists performed the TVT procedure. Among the 41 hospitals there were 3 university hospitals, 25 teaching hospitals and 13 local hospitals. All participating gynecologists and urologists were qualified to perform vaginal surgery and had a short training in performing TVT's by an experienced surgeon.

Inclusion criteria were stress urinary incontinence with an indication for surgery. Exclusion criteria were: recurrent and difficult to treat urinary tract infections, significant symptoms of urge urinary incontinence, a history of or detrusor over activity at cystometry, post voiding bladder retention (>150 ml.), bladder capacity less than 200ml or a physical/mental impairment.

The TVT was performed as described by Ulmsten (1). The operation was carried out under local anesthesia using 0.25% prilocaine with adrenalin and sedation, spinal analgesia or general anesthesia.

Preoperative urodynamical investigations were performed according to the ICS standards. A standardized history, physical examination and urine culture was performed preoperative, 12 and 24 months. The outcome of the TVT's was measured with a disease specific HRQOL questionnaire the Urogenital Distress Inventory (UDI). Uebersax et al. (2) validated a short form for this questionnaire (UDI-6). These questionnaires were translated and validated in the Dutch language by van der Vaart (3). Patients received the postal questionnaires: preoperative, 12 and 24 months after surgery. As outcome variables the subscales stress incontinence, irritative and obstruction of the UDI were taken. The subscale stress comprises two questions: Do you experience, and if so, how much are you bothered by: 1 leakage related to activity, coughing, or sneezing and 2 small amounts of leakage (drops). The subscale for irritative comprises the questions: Do you experience, and if so, how much are you bothered by: 1 frequent urination, 2 leakage related to feeling of urgency. The subscale for obstructive/discomfort comprises the questions: Do you experience, and if so, how much are you bothered by: 1 difficulty emptying bladder, 2 pain or discomfort in lower abdominal or genital area. The answers give points on a 0-100 scale where 100 means the most bothersome and 0 no symptoms at all.

Results

On 809 women a TVT was performed. In 703 women preoperative urodynamics were performed. In 93 cases detrusor over activity was recognized and these patients were excluded from this analysis. In 106 no urodynamical investigations were performed. One case from this group was excluded because no data were received. After two years the follow-up was 74%. The results are shown in Table 1.

Table 1

	Urodynamics performed (N = 610)	No Urodynamics (N = 105)	P value
Age	51.3 (SD 9.8)	50.8 (SD 12.0)	0.67
Parity	2.4 (SD 1.3)	2.5 (SD 1.0)	0.55
Pre-operative			
Irritative	65.6	70.7	0.09
Stress	76.4	75.4	0.67
Obstructive	32.0	39.3	
	0.03*		
1 year post-operative			
Irritative	28.4	30.3	0.55
Stress	13.8	14.4	0.83
Obstructive	22.4	25.8	0.25
2 years post-operative			
Irritative	29.7	33.8	0.20
Stress	16.0	15.8	0.94
Obstructive	24.2	22.0	0.45

Student's t- test

* Significant P-value < 0.05

The numbers are mean scores on the UDI subscale. A high score means more bother.

Interpretation of results:

The enormous decline on the subscale stress indicates the success of the TVT for stress urinary incontinence. There is no difference in the final results for SUI whether urodynamic investigations were performed or not.

When no urodynamics are performed before surgery for SUI it is believed that more obstruction post operative and urge incontinence will occur. This because an a contractile detrusor, detrusor under activity or over activity will be diagnosed before surgery is performed. We did not observe more irritative or obstructive symptoms in the group were no urodynamics were performed.

Concluding message:

Urodynamical investigations are not a good prognostic tool for the outcome of TVT. Urodynamic investigation is not superior to preoperative physical examination and history taking.

References:

- 1 Ulmsten U, Henriksson L, Johnson P, Varhos G. An ambulatory surgical procedure under local anesthesia for the treatment of female urinary incontinence. *Int Urogynecol J* 1996;7:81-86.
- 2 Uebersax JS, Wyman JF, Shumaker SA, McClish DK, Fantl JA, and the Continence Program for Women Research Group. Short form to asses life quality and symptom distress for urinary incontinence in women: the incontinence impact questionnaire and the urogenital distress inventory. *Neuro Urodyn* 1995;14:131-139.
- 3 Vaart van der CH, Leeuw de JRJ, Roovers JPWR, Heintz APM. Measuring health-related quality of life in women with urogenital dysfunction: the urogenital distress inventory and incontinence impact questionnaire revisited. *Neuro Urodyn* 2003;22:97-104.