

WHICH PREOPERATIVE VARIABLES PREDICT 3 YEAR SUBJECTIVE CURE AFTER TVT OPERATION ?

Hypothesis / aims of study

To identify preoperative predictors for subjective cure 3 years after TVT operation.

Study design, materials and methods

A TVT operation was performed in 1113 mixed incontinent women between Sept. 1998 and Dec. 2002. Data were reported to a national database from 18 hospitals. A short-form disease-specific questionnaire previously validated and found reliable was used pre- and postoperatively. From the questionnaire indices are constructed for urge and stress incontinence. The urge incontinence index (UII) is composed of two questions: how often (never, 1-4 times a month, 1-6 times a week, once a day and more than once daily) and how much (nothing, drops/moist underwear, dripping/wet underwear, running/passes through all clothes and running down the legs or down to the floor) do the women usually leak when they experience a sudden and overwhelming need to void. The stress incontinence index (SII) is made up of three items. The first is a composite of 9 questions on activities that cause leakage, the second and third items pertain to how often and how much stress incontinence is experienced. Urge and stress index zero indicate that there is no leakage.

Women were **defined as mixed incontinent** when preoperatively both stress and urge incontinence indices were larger than zero. Postoperatively the patients recorded their satisfaction with the operation. The choices were: very satisfied, some satisfaction, neither satisfied nor unsatisfied, slightly unsatisfied and very unsatisfied. The objective tests and the questionnaires were completed by the patients preoperatively and median 38 months postoperatively (25 and 75 percentiles were 36 and 41 months).

The women were **defined as subjectively cured** when they were very satisfied and had both stress and urge indices of 2 or less. UII and SII 2 are found in women who have moist underwear or leak drops of urine 1 to 4 times a month. 96% of women with this bother are very satisfied. Due to a high percentage of missing pad- and stress tests postoperatively an analysis of objective cure was not possible.

The following two step procedure was used to identify predictors among 39 variables measured before operation: A. Identify variables significantly related to success ($p < 0.01$). These are called **potential predictors**. B. Perform a logistic regression analysis with a subjective cure of 3 years as the dependent variable and the potential predictors identified in step A as independent variables. The significant independent variables in this analysis are called **independent predictors for subjective cure 3 years**. Thirty-nine preoperative variables were analysed: age, basic components of the indices (a component of the stress index was leakage while rising from bed), pad test, stress test, residual urine, maximum flow, maximum closure pressure, complications and stress, urge and quality of life indices. Statistics: T-test, logistic regression, Chi square test, Spearman correlation, Mann-Whitney test.

Results

55.9 % of 978 patients were subjectively cured after median 38 months. Our analysis identified 11 potential predictors of subjective cure, but only three independent predictors for subjective cure:

1. Urge incontinence index OR 0.78, 95%CI 0.73, 0.85 P = 0.001 one score increase
2. Age ≤ 56 versus >56 years OR 0.69, 95%CI 0.53, 0.91 P = 0.008
3. Do you leak when you rise from bed? Yes versus no OR 0.70, 95%CI 0.53, 0.93 P = 0.014

Subjective cure related to preoperative urge incontinence index and age 56 and younger and 57 and older are shown in fig. 1. Subjective cure related to preoperative urge incontinence index and leakage on rising from bed or not are shown in fig. 2.

Fig 1 Subjective cure rate vs. preoperative degree of urge incontinence and age

preoperative urge incontinence index	age ≤ 56 years			age >56 years		
	total	subjective cure n	subjective cure %	total	subjective cure n	subjective cure %
1	19	16	84.2	10	8	80.0
2	115	87	75.7	50	32	64.0
3	70	43	61.4	55	33	64.0
4	87	56	64.4	79	48	60.8
5	81	48	59.3	81	44	54.3
6	75	39	52.0	91	33	36.3
7	42	22	52.4	55	17	30.9
8	17	7	41.2	44	9	20.5
total	506	318	62.8	465	224	48.2

Fig 2 Subjective cure rate vs. preoperative degree of urge incontinence and leakage on rising from bed

	no leak on rising from bed	leak on rising from bed

preoperative urge incontinence index	total	subjective cure n	subjective cure %	total	subjective cure n	subjective cure %
1	22	20	90.9	6	4	66.7
2	129	96	74.4	34	21	61.8
3	93	60	64.5	30	14	46.7
4	91	59	64.8	74	45	60.8
5	75	46	61.3	86	46	53.5
6	54	29	53.7	111	42	37.8
7	36	15	41.7	61	24	39.3
8	9	3	33.3	51	13	25.5
total	509	328	64.4	453	209	46.1

Interpretation of results

Mixed incontinent women who have severe urge incontinence, who are old or leak on rising from bed have a poorer subjective cure rate.

Concluding message

Age and the subjective variables, urge incontinence index and leakage on rising from bed, predicted the outcome of mixed incontinent women after a TVT operation. Objective preoperative variables did not.

FUNDING: NONE

DISCLOSURES: NONE

CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study did not need ethical approval because part of ongoing quality insurance not needing ethics committee approval but followed the Declaration of Helsinki Informed consent was obtained from the patients.