PAULA STRADIŅA KLĪNISKĀ UNIVERSITĀTES SLIMNĪCA

#546 The nomograms for calculating the probability of a specific urinary incontinence type in females and to predict TOT surgery outcome using patient history and urodynamic parameters



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Introduction

The aim of the study:

To create the nomograms with the most important patient history and conventional urodynamic (UDS) factors to differentiate specific type of urinary incontinence (UI) for females and to predict the need for symptomatic treatment of overactive bladder (OAB) after anti-incontinence surgery with the transobturator tape (TOT) synthetic implant.

Methods

Study enrolled:

- 666 females with UI complaints and
- 487 women who underwent TOT surgery.

Results

Creating the nomograms Age, cystometric capacity (CC), maximum urethral closure pressure at rest (MUCPrest), detrusor opening pressure (Pdet.open) and pressure transmission ratio (PTR) showed a statistical significance to differentiate between SUI and UUI groups. In different nomograms, it was possible to accurately differentiate between the SUI and UUI groups with 70 – 72 % likelihood. With increasing age, MUCPrest, Pdet.open and PTR, the possibility of UUI grow, while increases in CC and Qmax decrease this possibility. Creating nomograms to predict the likelihood of continuing symptomatic OAB treatment after TOT surgery Age, CC, Pdetopen, maximum urine flow rate (Qmax) and detrusor contractility index (DCI) showed a statistical significance to predict the surgery outcome. The nomograms predicted the need for symptomatic treatment of OAB after TOT surgery with a 67-69 % likelihood. With increasing age, Pdet.open and DCI, the need for symptomatic overactive bladder therapy after TOT surgery rises, while increases in CC and Qmax decrease this possibility.

UI type was determined by patient history, physical examination and questionnaires (UDI-6, ICIQ-UI). <u>Three types of UI were distinguished</u>:

- Stress (SUI)
- Mixed (MixUI)
- Urgency (UUI).

Two main outcome groups after TOT were distinguished:

- TOT_Normal UI marked as no longer a problem after surgery
- TOT_OAB symptomatic treatment of OAB was prescribed after surgery.

Age, BMI, UDS data were evaluated using Multinomial regression and ANOVA test using SUI, MixUI and UUI as outcome groups.

The nomograms were designed using the logistic regression method. Firstly, were included factors who in previous analyses showed statistical significance to differentiate specific UI type and to predict TOT surgery outcome. Secondly, were included factors that showed a statistically significant effect in the development of the regression function, despite the results of previous analyses.

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Urethral pressure profilometry	



Conclusions

Creating the nomograms to differentiate the specific UI type in females the most important parameters are age, CC, Qmax, Pdet.open, PTR and MUCPrest.



References

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Zane Pilsetniece, Egils Vjaters. The role of conventional urodynamic in diagnosing specific types of urinary incontinence in women. Turk J Urol. 2020 Feb 7;46(2):134-139. doi:10.5152/tud.2020.19218. Print 2020 Mar. The most important parameters creating the nomograms to predict the need of OAB therapy after TOT surgery are age CC, Qmax, Pdet.open and DCI.

The developed nomograms are an easy and fast way to make an accurate diagnosis for women with UI. This is of great clinical importance because, the UI therapy algorithm is based on a specific type of UI.

The nomograms can be used in the preoperative period to predict which patients will need symptomatic treatment of overactive bladder after TOT surgery.