

#725: Urodynamics: Imposition or not as bad as it seems?

Secondary analyses from a randomized controlled trial

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Hypothesis/ aims of study

- Urodynamic investigation (UDI) is the gold standard in the assessment of refractory lower urinary tract symptoms (LUTS).
- The invasive nature of the procedure, which entails catheterization of the bladder and rectum, can lead to both emotional and physical discomfort for patients, along with potential side effects.
- The purpose of these secondary analyses was to thoroughly evaluate the levels of discomfort experienced by patients and to monitor the occurrence of side effects/adverse events such as urinary tract infections (UTIs) during and after UDI.
- The secondary analyses derived from a randomized controlled trial (RCT) that evaluated the artifact susceptibility of water- and air-filled urodynamic systems.

Materials and Methods

- 490 patients (40% females) from 04/2021-01/2022, suffering from neurogenic LUTS participated in the RCT and underwent UDI.
- Baseline characteristics of the patients are displayed in Table 1.
- In case of asymptomatic bacteriuria, no antibiotic prophylaxis was given.
- After removal of the catheters, patients were asked to rate their emotional perception and pain on a numerical rating scale from 0-10, with lower values indicating less discomfort/pain.
- A standardized follow-up telephone interview was conducted 7-14 days later to assess examination- related adverse events (Table 2). Chi-square test and logistic regression were used to evaluate associations.

Table 1: Baseline characteristics

Sex	
• Female - no. (%)	194 (40)
• Male - no. (%)	296 (60)
Age (range)	58 (48-74)
Neurological diagnosis* no.(%)	
• Spinal canal stenosis	161 (33)
• Spinal cord injury	149 (30)
• Polyneuropathy	48 (10)
• Multiple sclerosis	34 (7)
• Extrapyrimalal syndrome	26 (5)
• Stroke	24 (5)
• Conus cauda syndrome	20 (4)
• Spina bifida	15 (3)
• Other	161 (33)
Bladder emptying method - no.(%)	
• Spontaneous	258 (53)
• Intermittent catheterization	151(31)
• Indwelling catheter	81(17)

*some patients can have more than one neurological diagnosis

Table 2: Follow-up interview

Did you have pain at any point of time after the urodynamic investigation?
Did you have gross hematuria at any point after the urodynamic investigation?
Did you have increased urgency/incontinence at any point after the urodynamic investigation?
Did you have an acute urinary retention, requiring catheterization?
Did the stool quality change after the urodynamic investigation?
Did you have pain at defecation at any point after the urodynamic investigation?
Have you noticed blood in your stool at any point after the urodynamic investigation?
After the urodynamic investigation, did you suffer a urinary tract infection?
Did you need an additional medication after the urodynamic investigation?
Did you need a medical consultation at any point after the urodynamic investigation?
After the urodynamic investigation, was here a hospitalization required?

Results/ Interpretation (Figures 1&2)

- Median overall emotional discomfort and pain were 2 (Q1-Q3: 0-5) and 2 (Q1-Q3: 0-4).
- Female patients reported stronger emotional discomfort (p=0.004).
- Pain ratings did not differ significantly between sex (p=0.112).
- Self limiting pain was reported by 30% (146/490) with a median intensity of 5 (Q1-Q3: 3.5-6) and a duration of ≤72h in 81% (118/146) and >72h in 19% (28/146) of cases.
- Increased urgency was found in 18% (90/490) (≤72h: 70% (63/90); >72h: 30% (27/90)).
- 6% (28/490) of patients developed a UTI.
- UTI was significantly associated with UTI within the past 12 months (odds ratio (OR) 3.01 95% confidence interval (CI) 1.38-6.58, p=0.006)) and asymptomatic bacteriuria at UDI (OR 4.54, 95% CI 1.54-13.41, p=0.006).
- Gross hematuria was present in 8% of patients, with 34% of these patients taking anticoagulants or platelet aggregation inhibitors.
- The number of positive urine cultures needed to treat to prevent one UTI was 16 (95% CI 9.6-38.6).
- Severe adverse events requiring hospitalization were seen in 1% (5/490) with 3 of them being examination related (UTIs).

Conclusions

- Urodynamic investigation is a well-tolerated examination with an acceptable rate of adverse events and side effects.
- Prophylactic antibiotics for urodynamic investigation seem not to be justified.

Figure 1: Adverse events and side effects after urodynamic investigation

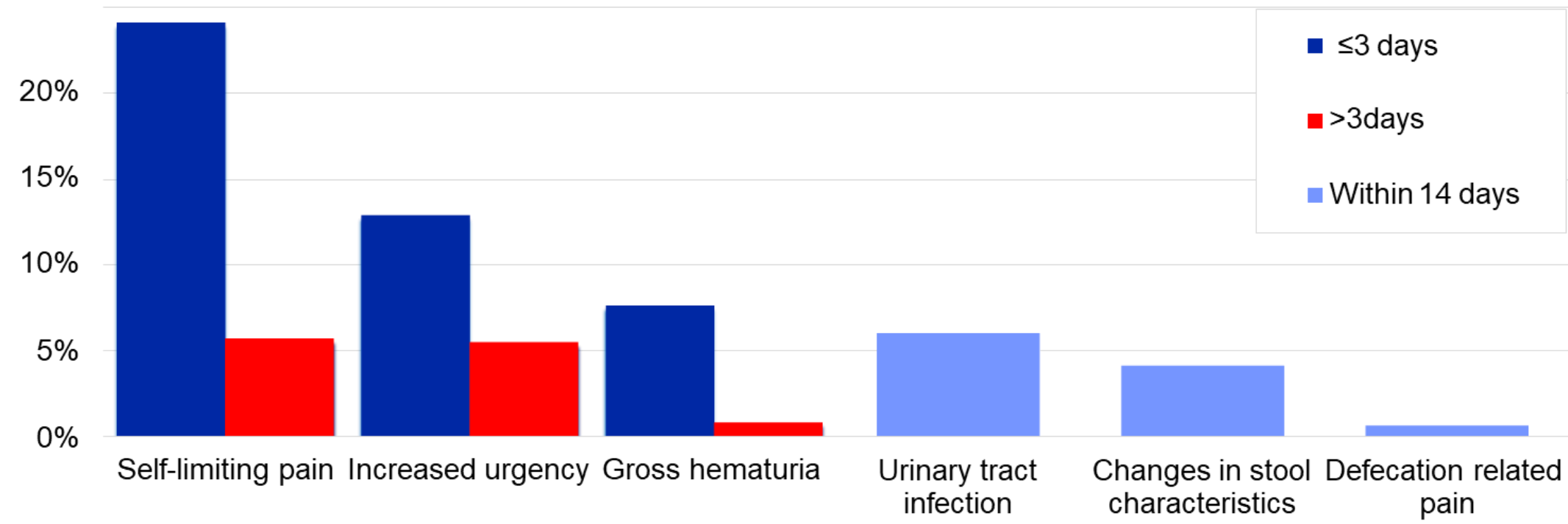


Figure 2: Adjusted associations of UTI after UDI

