

#70 5 years follow up in male patients with detrusor underactivity. Are there differences between neurogenic and non-neurogenic patients?

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Introduction

Detrusor underactivity (DUA) might be the cause of voiding symptoms in some patients. The pathophysiology is multifactorial. A definition of underactive bladder is still under debate.

Some of these patients will require Clean Intermittent Catheterization (CIC) to provide a efficient bladder emptying.

Objetives

- To describe the demographic variables of male patients diagnosed of detrusor underactivity.
- To compare the differences between neurogenic and non-neurogenic patients in urodynamic profile, CIC requirement and complications during follow-up.
- To analyze if there is any predictive factor for CIC requirement.

Methods and Materials

Retrospective, longitudinal, descriptive, single-centre study of a cohort of male patients with urodynamic proven DUA (ICS 2002 definition and/or Bladder Contraction Index (BCI)<100) between 2008 and 2018.

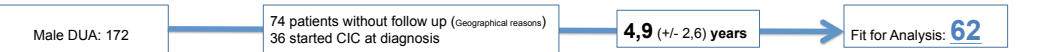
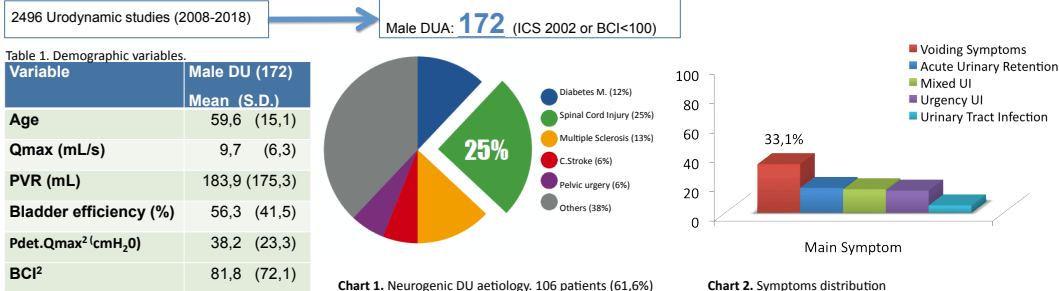
We included for analysis patients in whom conservative watchfull-waiting policy was initially adopted.

As demographic variables we included age, etiology and symptomatology. In all patients we performed a urodynamic study according to the Good Clinical Practice Guidelines for Urodynamic Studies. Urodynamic variables included were: Qmax, Voided volume, Post voiding Residual Volume (PVR) and voiding efficiency (in Free Uroflowmetry calculated as voided volume/bladder capacity expressed as a percentage). In the P/Q study: Qmax, Urethral opening pressure (Pdet,uo), detrusor pressure at maximum flow (Pdet.Qmax) and BCI (calculated as Pdet.Qmax + 5Qmax).

Regarding treatment we described the need of starting CIC or the presence of complications (urinary tract infections, bladder stones).

A Univariate comparative analysis was performed to compare the characteristics of the patients who needed to start CIC along the follow up versus those who were stable and free of CIC. Binary logistic regression was performed as multivariate analysis to define risk factors for the need to start CIC. All statistical analysis were performed with SPSS®21 (Mac version).

Results



Variable	All patients (62)	Neurogenic DUA (33)	Non-Neurogenic DUA (29)	p
	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	
Qmax ¹ (mL/s)	9.71 (6.3)	10.19 (5.58)	11.07 (6.96)	0.61
PVR ¹ (mL)	183.90 (175.3)	158.75 (142.86)	107.76 (128.99)	0.15
V. efficiency ¹ (%)	56.39 (41.57)	56.16 (30.01)	70.32 (30.27)	0.07
Pdet.uo ² (cmH ₂ O)	35.78 (21.02)	40.52 (23.15)	36.66 (20.87)	0.53
BCI ²	81.89 (72.05)	68.23 (19.99)	74.35 (32.98)	0.41
Pdet.Qmax ² (cmH ₂ O)	38.28 (23.35)	36.48 (16.51)	39.77 (19.13)	0.51

Variable	All patients	Neurogenic DUA	Non Neurogenic DUA	p
UTIs	11/62 (17,7%)	8/33 (24,2%)	3/29 (10,3%)	0,34
Bladder Stones	5/62 (8%)	4/33 (12,1%)	1/29 (3,5%)	0,39
CIC requirement	6/62 (9%)	6/33 (18,1%)	0/29 (0%)	0,04

Variable	CIC requirement (6)	No CIC requirement (56)	p
PVR (mL)	316 +/- 125,1	1124,6 +/- 114	0,009
V.Efficiency (%)	34,6 +/- 9,6	65,8 +/- 30,6	0,017

Discussion

Different urodynamic parameters for defining DUA have been explored. In our study we used the 2002 ICS (1) and a BCI <100 as a cut-off point and found a prevalence of 6.89 % in males, similar to other studies (2). Also comparing to other series, the etiology of DUA is predominantly neurogenic (mainly spinal cord injuries).

Most of papers about DUA focuses on the diagnosis but there are few about follow up and evolution of these patients (3). The Bristol group explored non-neurogenic DUA patients during a long follow-up of more than 10 years. The majority of them remained stable (84%). They didn't find differences between those who progress compared to those who remained untreated. In our study we explored the need to start CIC including neurogenic DUA patients as we thought it was a paramount treatment change (invasive vs. non-invasive). According to our results, neurogenic DUA patients should be advised that near 20% of them will require to start CIC during the first 5 years of follow up. Conversely, in non-neurogenic DUA patients we can reassure them about the permanence on a medical treatment with low risk of starting CIC.

We search between the urodynamic study variables to establish predictors for the CIC requirements. Unfortunately, only with urodynamic test, we were unable to detect those patients with DUA will evolve to start CIC.

Risk factors for CIC requirement

Variable	p
Qmax ¹ (mL/s)	0,77
PVR ¹ (mL)	0,56
V. efficiency ¹ (%)	0,62
Pdet.uo ² (cmH ₂ O)	0,64
BCI ²	0,98
Pdet.Qmax ² (cmH ₂ O)	0,86

Conclusions

- The most common aetiology of detrusor underactivity is neurogenic.
- In non-neurogenic male patients, detrusor underactivity tends to remain stable throughout follow up whilst one out of five (20%) neurogenic male patients require to start CIC.
- We have not found - in free uroflowmetry or urodynamic study any predictive factor for CIC requirement.

References

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