

Prevalence of urinary incontinence in patients with Normal Pressure Hydrocephalus and the impact of shunt surgery

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AIMS OF STUDY

Urinary incontinence (UI) is part of the classical symptomatic triad in normal pressure hydrocephalus (NPH), and greatly affects patient and caregiver quality of life. Between 45-95% of patients with NPH present urinary symptoms (1).

However, data on UI, improvement after shunt surgery and associations with demographic and clinical factors are scarce (2)

The aim of this study was to determine the prevalence of UI in patients with NPH at our institution, identify risk factors associated, and to evaluate the improvement after shunting.

INTERPRETATION OF RESULTS

Urinary incontinence prevalence was within ranges described previously in literature, nonetheless with a lower percentage of patients presenting urgency urinary incontinence than expected.

Furthermore, several patients presented with either mixed incontinence or stress incontinence which could be related to gender or age-associated risk factors.

There was an improvement in postoperative ICIQ scores (83.6%) after shunting, as expected.

STUDY DESIGN, MATERIALS AND METHODS

An observational study was performed after approval by the institutional ethics committee. We included patients with NPH at our institution between 2016 and 2022, where the ICIQ-UI-SF questionnaire was applied at diagnosis and post-operatively. Sociodemographic and clinical information was also obtained. Data was collected in a secure RedCap database. Descriptive and bivariate analyses were performed. Statistical analysis was performed with Stata 17.

RESULTS

Gender Male, n (%)	81 (69.2)
Obesity/overweight, n (%)	64 (54.7)
Urinary incontinence at diagnosis, n (%)	96 (82.0)
Symptoms of urgency incontinence, n(%)	45 (46.9)
Stress incontinence symptoms, n (%)	5 (5.2)
Mixed symptoms, n (%)	24 (25.0)

Table 1:
Demographic data of patients diagnosed with NPH.

Table 2: Measures of association with urinary symptomatology at diagnosis and post-surgical improvement of the ICIQ score.

Urinary symptoms at diagnosis		
	OR	p
Male gender	0.32	0.07
Overweight/obesity	1.38	0.52
Age <80 years	1.00	0.99
Postoperative improvement of ICIQ		
	OR	p
Male gender	0.54	0.46
Age <80 years	1.29	0.75
Overweight/obesity	14.40	0.0036
Symptoms of stress incontinence	2.09	0.40
Urgency incontinence symptoms	7.20	0.021

CONCLUDING MESSAGE

- Incontinence findings at diagnosis are similar to those reported in the literature.
- 84% improvement in urinary incontinence after the shunt surgery.
- 30% of patients with NPH and urinary incontinence had either mixed or stress incontinence, highlighting the importance of a multidisciplinary approach for the management of these symptoms by urology and neurology.

We found few statistically significant associations, signaling the need for continued research in this field with larger, prospective studies. It also shows the importance of urology involvement in the follow-up of these patients.

References

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