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THE USE OF URODYNAMIC PARAMETERS FOR IMPROVEMENT OF CONTINENCE IN PATIENTS UNDER INTERMITTENT CATHETERIZATION

Hypothesis / aims of study

Clean intermittent catheterization (CIC) is an important therapeutic alternative for the treatment of patients with neurogenic bladder dysfunction. Although most patients obtain benefits with CIC, incontinence remains a problem in many of them (1) The purpose of this study is to determine the contribution of the bladder diary and urodynamic study in the institution of the clean intermittent catheterization program for the maximal improvement in urinary continence.

Study design, materials and methods

This study was approved by our institutional committee on human research. We evaluated 29 patients (ages 4 - 78 years) under clean intermittent catheterization due to neurogenic bladder dysfunction. Each patient or caregiver was instructed to fill a bladder diary for seven consecutive days. The average of catheterized urine volume was determined for each patient. Continence or incontinence between the catheterizations was assessed in the bladder diary. All patients were submitted to urodynamic study evaluating the abdominal and intravesical pressures during filling cystometry. We considered for analysis the maximum cystometric capacity (volume at 40cm H2O) and the ideal cystometric capacity (volume at 20 cm H2O) (2;3). The results were compared to the average of catheterized urine volumes and to the occurrence of leaking episodes using the test of Fisher.

Results

Seventeen patients (58.6%) were continent and twelve (41.4%) were incontinent between catheterizations. Patients in whom the frequency of catheterization allowed drained volumes smaller than the maximum bladder capacity (volume at 40 cm H2O) were more continents (p=0.011) (table 1). This difference was yet more significant when the catheterized volumes were equal or minor than the urodynamic volume at 20 cm H_2O (p=0.005) (table 2).

Table 1 – Average of catheterized volumes related to maximum cystometric capacity (under 40 cm H2O) and urinary continence between the catheterizations

Urinary continence between the catheterizations	Average of catheterized volumes under the maximum cystometric capacity				TOTAL	
	Yes		No			
	N	%	N	%	N	%
Continent	16	94,1	1	5,9	17	100,0
Incontinent	6	50,0	6	50,0	12	100,0
Total	22	75,9	7	24,1	29	100,0

Fisher test - p=0.011

Table 2 - Average of catheterized volumes related to ideal cystometric capacity (under 20 cm H2O) and urinary continence between the catheterizations

Urinary continence between the catheterizations	Average of catheterized volumes under the ideal cystometric capacity				TOTAL	
	Yes		No			
	N	**%**	N	**%**	N	**%**
Continent	15	88,2	2	11,8	17	100,0
Incontinent	4	33,3	8	66,7	12	100,0
Total	19	65,5	10	34,5	29	100,0

Fisher test - p=0.005

Interpretation of results

The use of bladder volumes checked at the urodynamic examination allow adequate adaptation of the intervals for intermittent catheterization them maximizing urinary continence. Maintenance of bladder volumes with pressures below 20 cm H2O are significantly better than intervals with volumes more elevated as 40 cm H2O. This fact favorable reinforces drainage intervals with intravesical volumes and pressures bellow 20 cm H2O.

Concluding message

The realization of bladder diary and Urodynamic Examination offer values for adequate institution of catheterism intervals in patients with neurogenic bladder dysfunction. Yet, reinforce the need for lowing intravesical pressures by bladder augmentation procedures when those intervals would need frequency intervals not sociably acceptable.

References

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