

FOLLOW UP OF PATIENTS WITH NEUROPATHIC BLADDER DUE TO SPINAL CORD LESION

Hypothesis / aims of study

Patients with neuropathic bladder need long term follow up due to a number of reasons. Bladder and renal function must regularly be assessed and treatment modification may be necessary in order to preserve the safety parameters for the upper urinary tract. Early diagnosis of complications that might interfere (recurrent urinary tract infections, stone formation, vesicoureteric reflux, deterioration of upper urinary tract, e.t.c.) is very important. In spinal cord lesion (SCL) patients the early bladder management in specialized units could contribute to the optimal therapeutic approach [1,2,3].

Study design, materials and methods

We retrospectively studied 117 traumatic SCL patients out of 269 patients with neuropathic bladder who were examined during one year (2006) in the Neuropathic Bladder Unit. Thirty three patients with acute or sub-acute lesion, within the first year post-injury, were not studied further. The remaining 84 patients with chronic traumatic SCL (63 males, 21 females, mean age 38.6 years, 8 complete and 12 incomplete tetraplegics, 45 complete and 16 incomplete paraplegics and 3 with cauda equina lesions) were grouped in: **group A**: patients who had an early first admission within the first 6 months post injury and **group B**: patients who had a delayed first admission to the unit, more than 6 months post injury. In these two groups we studied:

1. the type of lesion according to the American Spinal Injury Association Impairment Scale (ASIA Impairment Scale)
2. the type of neuropathic bladder dysfunction according to the International Continence Society terminology : detrusor (D) and sphincter (S) overactivity or underactivity.
3. the follow up (F/U) on an annual basis (F/U regular) or on an emergency basis (F/U not regular)
4. urodynamics
5. time interval between the time of SCL to the year of this study
6. the number of re-evaluations of the same patient during one year (2006)
7. if neuropathic bladder management considered satisfactory in the evaluation of 2006 (low/acceptable bladder pressure during storage and emptying phase with socially accepted urine continence and without any complications)
8. modifications in the therapeutic approach

Results

The results are presented in the following table:

	Group A (N=57)			Group B (N=27)			P
	F/U regular (N=53)	F/U not regular (N=4)	%	F/U regular (N=15)	F/U not regular (N=12)	%	
ASIA Impairment Scale							
A	33	4	64.9	10	7	63.0	0.676*
B	6	0	10.5	1	2	11.1	
C	4	0	7.0	2	1	11.1	
D	6	0	10.5	2	2	14.8	
E	4	0	7.0	0	0	0.0	
Type of neuropathic bladder							
D and S overactivity	40	3	75.4	10	10	74.1	0.670*
D underactivity and S overactivity	5	0	8.8	1	0	3.7	
D and S underactivity	5	1	10.5	2	1	11.1	
D overactivity and S underactivity	3	0	5.3	2	1	11.1	
Mean time interval between the time of SCL to the year of this study (2006) in months							
	66.8	45		125.3	114.6		
Sessions of evaluation during one year (2006)							
Once	32	1	57.9	3	3	22.2	0.006‡
Twice	17	1	31.6	9	4	48.2	
More than twice	4	2	10.5	3	5	29.6	
Urodynamics during one year (2006)							
No	13	0	22.8	2	3	18.5	0.850*
Once	38	3	71.9	12	8	74.1	
More than once	2	1	5.3	1	1	7.4	

Satisfactory bladder management							
Yes	31	0	54.4	5	0	18.5	0.002‡
No	22	4	45.6	10	12	81.5	
Modifications in the therapeutic approach							
Yes	32	4	63.2	12	12	88.9	0.015‡
No	21	0	36.8	3	0	11.1	

‡chi-square test

*Fisher's exact test

Interpretation of results

The type of lesion (ASIA Impairment Scale) and the type of neuropathic bladder does not differ significantly between the two groups. The patients in group B have a significant higher number of emergency admissions (12/27) due to urinary tract infections, stone formation, vesicoureteric reflux, or incontinence in regard to group A (4/57). The patients with early admission post injury (group A) have a satisfactory bladder management in 54.4% in contrast to patients with delayed admission (group B) who have a satisfactory management only in 18.5% and that difference is statistically significant. Patients of group A needed therapeutic modifications in 63.2% in contrast to patients of group B who needed therapeutic modifications in 88.9% and this difference is statistically significant. The 30.5% (11/36) of the patients with satisfactory bladder management needed therapeutic modification (not presented in the above table). These patients were mainly patients with incomplete lesion or patients who needed drug alteration due to side effects.

Concluding message

Patients with traumatic spinal cord lesion need early post lesion consultation concerning neuropathic bladder dysfunction. Long term follow up in specialized units is important in order to achieve the optimal bladder management.

References

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2. Hansen RB, Biering-Sorensen F, Kristensen JK. Bladder emptying over a period of 10-45 years after a traumatic spinal cord injury. Spinal Cord. 2004 Nov;42(11):631-7.
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FUNDING: No fund or grant

HUMAN SUBJECTS: This study did not need ethical approval because it was a retrospective study but followed the Declaration of Helsinki Informed consent was not obtained from the patients.