



#515: ASSOCIATION BETWEEN THE NEUROGENIC BLADDER SYMPTOM SCORE, FUNCTIONAL STATUS AND QUALITY OF LIFE IN MULTIPLE SCLEROSIS PATIENTS.



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Abstract

Aim: To evaluate the impact of urinary symptoms in MS patients on their quality of life, as well as their association with functional status using the Expanded Disability Status Scale (EDSS).

Methods: The Spanish version of the NBSS was applied to patients diagnosed with MS from the Neurology clinic. The EDSS score was also obtained. The NBSS total score and by domains were compared with the EDSS and with the quality of life question. The cut-off point of the NBSS total score with better sensitivity and specificity was calculated and its association with the EDSS was analyzed.

Results: 116 consecutive patients with MS in remission were enrolled, to answer the NBSS. A significant association was found for the EDSS < or ≥5 with the NBSS total score ($p=0.003$), continence domain ($p=0.01$), storage and voiding domain ($p=0.02$), but not for the consequences domain ($p=0.94$).

Conclusion: The severity of urinary symptoms assessed by the NBSS in patients with MS is associated with the severity of the disease assessed by the EDSS and with their quality of life.

Introduction

Multiple Sclerosis (MS) is the most common demyelinating disease of the nervous system. Approximately 75% of patients with MS will present low urinary tract symptoms during the course of the disease impacting their quality of life.

The Neurogenic Bladder Symptom Score (NBSS) has been validated to assess urinary symptoms in three domains and quality of life in these patients.

The objective of this study was to evaluate the impact of urinary symptoms in this group of patients on their quality of life, as well as their association with functional status using the Expanded Disability Status Scale (EDSS).

Materials and Methods

With the approval of the ethics committee, the Spanish version of the NBSS was applied to patients diagnosed with MS from the Neurology clinic. Every patient was not in acute phase of the disease. The EDSS score was also clinically obtained.

The EDSS score was dichotomized in <5 or ≥5, and was compared with the NBSS total score, the domains scores. and with the quality of life question. The cut-off point of the NBSS total score with better sensitivity and specificity was calculated and its association with the EDSS, quality of life, type of multiple sclerosis and time of diagnosis of the disease was analyzed.

For all statistical comparisons significance was considered as $p < 0.05$. The SPSS 25.0 was used for data analysis.

Table 1. Demographics and neurological characteristics of patients included in the study

Characteristic		N=116
Sex, n(%)	Male	38 (33)
	Female	78 (67)
Age(years)		40 (18-78)
Multiple sclerosis variants n(%)	Primary progressive	3 (3)
	Secondary progressive	16 (14)
	Relapsing remittent	97 (83)
Duration of disease (mo)		78 (1-408)
EDSS		5 (0-8)
NBSS Total score		18.5 (3-50)

Results

116 consecutive patients with MS in remission were enrolled, 78 women and 38 men, to answer the NBSS. The mean of the EDSS score was 5, and for the NBSS total score was 18.5. The demographic characteristics of the patients are in Table 1.

A significant association was found for the EDSS < or ≥5 with the NBSS total score ($p=0.003$), continence domain ($p=0.01$), storage and voiding domain ($p=0.02$), quality of life question ($p=0.038$), but not for the consequences domain ($p=0.94$). Table 2.

In the multivariate analysis, the question of quality of life and the time of diagnosis of the disease are the best predictors for the total score ($p < 0.05$). The NBSS cut-off point that is best associated with an EDSS < or ≥ 5 was 19 points

Table 2. NBSS total score and by domains correlations with the EDSS

	EDSS <5 (n=53)	EDSS ≥ 5 (n=63)	p
Total score	15 (3-46)	24 (3-50)	0.003
Continence	3 (0-21)	9 (0-21)	0.010
Storage + voiding	8 (3-18)	11 (0-20)	0.020
Consequence	2 (0-10)	4 (0-13)	0.094
Quality of life			0.038

Discussion

The findings of this study suggest that the NBSS is related to EDSS and quality of life in MS patients.

It is known that MS is a neurological demyelinating disease that alters the neural function, that is essential for normal urinary function. LUTD is very common in MS and can occur in different forms. Several PROMs have been introduced to identify possible patterns of LUTD.

The NBSS has been designed specifically to assess signs and symptoms related to neurogenic bladder dysfunction and quality of life. In this study we showed that NBSS was significantly impaired by neurological disability (EDSS). Also, we found an important association between the quality of life reported by the patient and the time of diagnosed, with the NBSS.

The NBSS does not have cut-off points that classify the symptoms into degrees of severity, so establishing the cut-off points associated with the EDSS could be a proposal for its classification into degrees of severity.

It is important to say that the Spanish version of the NBSS questionnaire has already been statistically tested.

Conclusions

The severity of urinary symptoms assessed by the NBSS in patients with MS is associated with the severity of the disease assessed by the EDSS and with their quality of life, making it an appropriate tool for the assessment and follow-up of patients in neuro-urological clinical practice.

References

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