Lower urinary tract dysfunction and urinary tract complications in Multiple Sclerosis: A 328-patient Cohort-Study


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Keywords: Multiple sclerosis; Neurogenic bladder; Renal failure; Urinary tract complications

Purpose – Lower urinary tract dysfunction is common in multiple sclerosis (MS) patients with significant impact and frequent complications in the urinary tract. It is necessary to well explore and assess these complications and their risk factors to manage the urinary symptoms.

Patients and methods – Between 2004 and 2009, 328 MS patients were follow-up in a neuro-urological outpatient clinic of the Toulouse university hospital. We studied epidemiological data (age, gender), neurological data (EDSS, MS duration, MS progression), urological symptoms, and results of urological investigations (the 24-hour creatinine clearance (CL24H), urinary tract ultrasonography, and in some cases urodynamics and cystography). We assessed urinary tract complications and their risk factors.

Results – We included 105 men and 223 women (32%/68%), 49.8 ± 0.68 years old, with MS for 14.3 ± 0.6 years. The median EDSS was 6 (min-max= 1-9). 178 patients (54%) developed urinary complications: on the low urinary tract in 74 patients (23%), on the upper urinary tract in 67 patients (20%) and on both of them in 37 patients (11%). The associated risk factors were age, female gender, MS duration, and EDSS. Complications appeared after 20 ± 1.4 years, but the prevalence increased after 10 years.

We found a renal impairment assessed by the Cl24H (< 90 mL/min) in 50 patients (15%). The association of renal impairment and EDSS was studied in 105 patients. The renal impairment was found in 35 patients (33%). The median EDSS was 5 (min-max= 1-9), 178 patients (54%) developed urinary complications: on the low urinary tract in 74 patients (23%), on the upper urinary tract in 67 patients (20%) and on both of them in 37 patients (11%). The associated risk factors were age, female gender, MS duration, and EDSS. Complications appeared after 20 ± 1.4 years, but the prevalence increased after 10 years.

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Conclusion – With a large cohort of MS patients, we confirmed that assessment of urinary tract complications is necessary as they are frequent, especially after 10 years of MS duration.

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FLUE-MS (First Line Urological Evaluation in Multiple Sclerosis): Validation using Delphi method of a new algorithm designed to first line evaluation and treatment of bladder disorders observed in Multiple Sclerosis (MS)

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Keywords: Multiple sclerosis; Urinary disorders; Algorythm

FLUE-MS (First Line Urological Evaluation in Multiple Sclerosis) is a method. The Delphi method is a structured communication technique, originating from a specific algorithm designed to evaluation of MS bladder disorders observed in Multiple Sclerosis (MS) (80%) and seriously impact quality of life of these patients. The aim of this prospective study was to determine which urinary symptoms interfere with quality of life.

Patients and method – 207 MS patients were prospectively included in the study. All underwent EDSS, Qualiveen and USP questionnaires. Multivariate analysis was done in order to verify correlations between each symptom (incontinence, urgency, voiding dysfunction) and alteration of quality of life evaluated by means of the Qualiveen questionnaire.

Results – 207 patients (mean age 47.5 ± 13.4 years), were included. Mean values were: EDSS 12.34 (sd 1.77); Qualiveen 1.7 (sd 0.95); USP 12.34 (sd 6.76). We found a significant correlation between EDSS, total score of USP and OAB (overactive bladder) domain score, and Qualiveen.

Comments – Temporal and spatial diffusion of demyelinating lesions may explain the coexistence and the relationships between motor and sensory dysfunctions and urinary symptoms. Further studies, specially functional MRI, would be interesting in order to track down specific zones implicated both in motor and bladder control.


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Which urinary symptoms interfere with quality of life in multiple sclerosis patients?

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Keywords: Multiple sclerosis; Urinary disorders; Overactive bladder; Quality of life

Urinary symptoms are very frequent in multiple sclerosis (MS) (80%) and seriously impact quality of life of these patients. The aim of this prospective study was to determine which urinary symptoms interfere with quality of life.

Patients and method – 207 MS patients were prospectively included in the study. All underwent EDSS, Qualiveen and USP questionnaires. Multivariate analysis was done in order to verify correlations between each symptom (incontinence, urgency, voiding dysfunction) and alteration of quality of life evaluated by means of the Qualiveen questionnaire.

Results – 207 patients (mean age 47.5 ± 12.3 years), were recruited. 172 had OAB (overactive bladder) and 151 voiding dysfunction. Two items were statistically significant in impact on quality of life: urgency item (P = 0.03) and frequency item (P = 0.02).
SEA-MS-F: Sexual Expectation Assessment in Multiple Sclerosis (MS): a new questionnaire to assess sexual expectations in female MS patients

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Keywords: Multiple sclerosis; Sex; Expectation; Orgasm

Sexual disorders are frequent in MS (40 to 90%) and interfere with quality of life. Many studies concerning male patients have been published, but only few studies are available in women. Moreover, sexual expectations of MS patients are not really known and no study was specifically designed to evaluate these expectations. The aim of the study was to create and validate such a specific questionnaire.

Material and method – Following a full literature analysis and neuro-urologists survey, we have constructed a first version (V1) of SEA-MS-F. This version was validated using the Delphi method. The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. Questions were accurate and graded on a visual scale (0 to 10). The experts’ answers were anonymously obtained by means electronic mails via Internet.

Results – Three rounds were necessary to obtain a full consensus. Final version of this 8-question questionnaires is online (www.SEEMS.jimdo.com). These questions concern sexual desire, arousal, pleasure, orgasm, body image, partner and couple’s relationship.

Comments – SEA-MS-F is the first questionnaire specifically designed to assess sexual expectations in MS patients. Psychometric validation of this questionnaire is ongoing.

Detrusor innervation: Which sacral roots? Findings of intraoperative electrophysiological studies during Sacral Anterior Roots Stimulation surgery

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Objective – To describe which sacral roots are preferentially involved in the detrusor contraction.


Results – S3 roots are involved mainly in the detrusor contraction (70%). The S3 right root contributes more frequently (43.3%) and more efficiently in the detrusor contraction (average: 96 cm H2O [34–140] versus 81 cm H2O [32–120] for left S3. A detrusor contraction was induced in 30% stimulation of the root S4. Therefore, when S4 root is predominant, the right root induces stronger contraction amplitude than the left one (right S4 average 84 cm H2O [40–120], vs left S4: average 62.2 [40–95]). S2 roots do not, in visceral parameters, contribute to increase the bladder pressure response beyond 30 cm H2O. S3 and S4 are still trapped together and connected to the channel involved in the Brindley voiding program.

Discussion – The intraoperative exploration during Brindley surgery confirms the limited data of the literature: the prevalence of the S3 right in the genesis of the detrusor contraction. Fujimura et al., in his article on radical resection of sacral neoplasm, has shown that the preservation of S3 roots is predictive of a recovery of a detrusor contractility in 69% of the cases and of a normal vesico-sphincteric status.

Our electrophysiological study confirms these data.

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