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 (16%). This renal impairment implies adapting doses of some medications prescribed for MS patients (analgescics, antibiotics).

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: Multipile sclerosis; Urinary disorders; Algorithm

Urinary symptoms are very frequent in MS (80%). Few tools allowing hierarchical and therapeutic strategies have been published (1,2) and only devoted to neuro-urology specialists. The aim of the study was the construction and validation of a specific algorithm designed to evaluation of MS bladder disorders by GP and neurologists.

Material and methods. – Following a full literature analysis and neuro-urologists survey, and abiding by international guidelines, we have constructed a first version (V1) of FLUE-MS algorithm. 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 10). The experts’ answers were anonymously obtained by means of electronic mails via Internet. The expert panel was constituted of 8 urologists and 13 PMR specialists. Two rounds were necessary to obtain a full consensus.

Results – Round 1 included 49 items and consensus between experts was obtained 39/49. Round 2 concerned 4 questions. Final version is on line (www.FLUE-MS.jimdo.com).

Comments. – The Delphi method is a valid method, allowing a rapid consensus between experts. Thanks to this method, a specific algorithm is now available for GPs and neurologists in order to evaluate and treat urinary symptoms in MS.


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Correlation between EDSS and specific urinary symptoms (USP) and quality of life (Qualiveen) questionnaires in Multiple Sclerosis

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Keywords: Multiple sclerosis; EDSS; USP; Qualiveen; Quality of life; Urinary symptoms

EDSS is a specific tool designed to assess Multiple Sclerosis (MS) disabilities. The objective of our study was to verify the correlations between EDSS and specific urinary symptoms (USP) and quality of life (Qualiveen) questionnaires.

Material and methods. – 207 MS patients were included in the study. We performed for each subject EDSS, USP (urinary symptoms profile) and Qualiveen questionnaires. Multivariate analysis tested correlations between the different items of the questionnaires and the general data (age, sex...).

Results. – 207 patients (mean age 47.5, sd 12.3, 134 females and 73 males), were included. Mean values were: EDSS 12.34 (sd 1.77); Qualiveen 1.71 (sd 0.95); USP 12.34 (sd 6.76). We found a significant correlation (P <0.0001) 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.


CO21-006–EN

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, urge, voiding dysfunction) and alteration of quality of life evaluated by means Qualiveen questionnaire.

Results. – 207 patients (mean age 47.5, sd 12.2, 134 F, 73 M) with mean EDSS 5.13 (sd 4.6), USP 12.3 (sd 6.8), 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 (P =0.02).
CO30-001–EN

Functional surgery in neuro-urology and indications
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Urinary functional surgery in neurological patients must meet two major objectives:

- Secure the upper urinary tract by maintaining low bladder pressure;
- Ensure patient comfort by finding a voiding way adapted to the patients disability.

What means?

- The maintenance of low bladder pressure:
  Surgery is indicated after failure of medical treatment (antimuscarinic) and after failure or intolerance of detrusor injections of botulinum toxin;
  Enterocystoplasty preferably associated with a supra-trigonal cystectomy is the method of choice for a large bladder capacity and compliant reservoir;
  The bladder reflectivity can be abolished by posterior rhizotomy S2 to S4, which implies the lack of prior sensitivity and sacral reflex ejections.
- Antimicrobial prophylaxis, urodynamic evaluation and clean intermittent catheterization

References
- Brindley GS. The Finetech-Brindley bladder controller: notes for surgeons and physicians.


CO30-002–EN

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-rectal-vesical status.

Our electrophysiological study confirms these data.

References
- Brindley GS. The Finetech-Brindley bladder controller: notes for surgeons and physicians.


CO30-003–EN

Antibiotic prophylaxis, urodynamic evaluation and clean intermittent catheterization
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Keywords: Urodynamic evaluation; Clean intermittent catheterization; Antibiotic prophylaxis; Urinary tract infection