

RELATIONSHIP BETWEEN URODYNAMIC EXAMINATION AND SEXUAL FUNCTION IN MULTIPLE SCLEROSIS MALE PATIENTS.

Hypothesis / aims of study

Multiple sclerosis (MS) is a recurrent, autoimmune, inflammatory demyelinating, and/or neurodegenerative chronic disease, which begins in young adulthood. The alterations secondary to MS may lead to sexual dysfunction.

Multiple sclerosis is categorized according to the course of the disease, and different distinct types of disease have been defined: relapsing remitting MS (RR-MS), primary progressive (PP-MS) and secondary-progressive MS. However, the relationship between RR-MS, PP-MS and sexual function in MS patients have not been understood.

The aim of this study was to evaluate the association between the MS phenotype and sexual function in male MS patients.

Study design, materials and methods

A consecutive sample of 60 male patients with multiple sclerosis, who underwent first urodynamic examination, was recruited from January 2011 to September 2013 from the MS outpatient clinic in this prospective cross-sectional study. Criteria for inclusion were: diagnosis of MS according to the McDonald Revised criteria and a "stable sexual relationship", defined as the presence of the same partners for six or more consecutive months. Indication for urodynamics was defined as follows: frequency ≥ 7 micturitions per day or ≥ 1 during the night, urgency to void and/or urinary incontinence. Depression and anxiety were evaluated with the Hamilton Depression Scale (HAM-D) and the Hamilton Anxiety Scale (HAM-A). Sexual function was assessed the International Index of Erectile Function (IIEF-15) and the Multiple Sclerosis_Intimacy and Sexuality Questionnaire (MSISQ). Continuous variables are presented as means \pm standard deviations and differences between groups were tested by T-student, Mann-Whitney or Kruskal Wallis tests and completed using SPSS v. 19 software (SPSS Inc, IBM Corp, Somers, NY, USA). For all statistical comparisons significance was considered as $p < 0.05$.

Results

Median age was 47.0 (IQR: 39.0-53.0), median duration of MS was 156 months (IQR: 60.0-228.0), median of HAM-A was 12 (IQR: 8-17), median of HAM-D was 13 (IQR: 8.50-19). Six (10.0%) patients had PP-MS, 14 (23.3%) had SP-MS and 94 (66.7%) had RR-MS. Detrusor overactivity (DO) was found in 36 subjects (72.0%). Median of amplitude of the first overactive contraction (AOFc) was 30.05 (IQR: 20.5-44.5), median of bladder volume at DO (DO/VOL) was 123.0 (IQR: 90.8-141.0), median of maximal detrusor pressure (MDP) was 70.85 (IQR: 47.0-82.8) and median of cystometric capacity (CC) was 135.0 (IQR: 122.0-212.0). We found that patients with RR-MS had higher IIEF-EF than PP-MS (18.60 vs. 10.66; $p < 0.01$) and SP-MS (18.60 vs. 9.14; $p < 0.05$), higher IIEF-IS than PP-MS (8.2 vs. 5.0; $p < 0.05$) and SP-MS (8.2 vs. 5.0; $p < 0.05$), higher IIEF-OF than PP-MS (7.0 vs. 3.66; $p < 0.05$). After urodynamic examination, subjects with DO/VOL ≥ 123.0 ml had higher IIEF-EF (15.81 vs. 11.54; $p < 0.05$), IIEF-IS (8.18 vs. 5.18; $p < 0.05$), IIEF-OF (7.36 vs. 4.0; $p < 0.05$) and IIEF-OS (5.0 vs. 5.54; $p < 0.05$).

Subjects with CC ≥ 135 cmH₂O had higher IIEF-EF (18.05 vs. 10.82; $p < 0.05$), IIEF-IS (8.16 vs. 5.09; $p < 0.05$), IIEF-OF (4.0 vs. 7.38; $p < 0.05$), IIEF-OF (7.38 vs. 4.0; $p < 0.05$), IIEF-SD (6.72 vs. 5.18; $p < 0.05$), IIEF-OS (5.72 vs. 3.09; $p < 0.05$) and lower primary MSISQ (13.76 vs. 19.55; $p < 0.01$), secondary MSISQ (18.28 vs. 24.02; $p < 0.01$) and tertiary MSISQ (12.35 vs. 16.41; $p < 0.01$). At the correlation analysis, we demonstrated positive association between MCC and IIEF-EF ($r = 0.37$; $p < 0.01$), IIEF-IS ($r = 0.26$; $p < 0.05$), IIEF-OF ($r = 0.28$; $p < 0.05$), IIEF-OS ($r = 0.40$; $p < 0.01$) and inverse association between MCC and primary MSISQ ($r = -0.39$; $p < 0.01$) and secondary MSISQ ($r = -0.29$; $p < 0.01$).

At the multivariate logistic regression analysis, CC < 135 (OR [95%CI] = 4.65 [1.0-21.75]; $p < 0.05$) was independent predictor of moderate-severe ED (IIEF-EF ≤ 16) after adjusting for age and MS variants.

Interpretation of results

Although not specific explanations could be made, we suppose that impairment of bladder function secondary to MS, assessed by urodynamic examination, may be a significant reliable proxy of sexual dysfunction. In fact, CC has been demonstrated to predict moderate-severe erectile dysfunction.

Concluding message

We suggest to consider sexual dysfunction in multiple sclerosis patients as part of the routine assessing, especially for those with CC alterations. Further translation research are warranted in order to confirm these findings.

References

1. Keller JJ, Liang YC and Lin HC: Association between multiple sclerosis and erectile dysfunction: a nationwide case-control study. *J Sex Med.* 9: 1753-9, 2012.
2. Kessler TM, Fowler CJ and Panicker JN: Sexual dysfunction in multiple sclerosis. *Expert Rev Neurother.* 9: 341-50, 2009.
3. Schafer W, Abrams P, Liao L, Mattiasson A, Pesce F, Spangberg A, Sterling AM, Zinner NR and van Kerrebroeck P: Good urodynamic practices: uroflowmetry, filling cystometry, and pressure-flow studies. *Neurourol Urodyn.* 21: 261-74, 2002.

Disclosures

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