

## **RISK FACTORS FOR BLADDER DYSFUNCTION AMONG PATIENTS WITH MULTIPLE SCLEROSIS**

### Hypothesis / aims of study

Independent historical risk factors for the development of bladder dysfunction in the setting of MS have not been solidly identified, though age, time since diagnosis, and MS disease pattern have all been suggested. This study was undertaken to identify risk factors for specific urodynamic (UD) findings among patients with MS.

### Study design, materials and methods

Urodynamic and demographic information from patients referred for urologic evaluation were collected. Disease status of MS was classified as primary progressive (PPMS), relapsing remitting (RRMS), or secondary progressive (SPMS) by referring specialists. Time since diagnosis was calculated. Urodynamic parameters evaluated included % patients with detrusor overactivity (DO), threshold volume at DO (VOL), maximum detrusor pressure (Pdet.max), cystometric capacity (CC), % patients with dyssynergia (DSD), post void residual (PVR), maximum flow (Qmax), voiding pressure at Qmax (pdet.Qmax), and voided volume (void). DSD was assessed during video monitoring, and by EMG patch electrodes.

### Results

Overall, 121 patients were referred and 86 completed video-urodynamic assessment. Their average age was 50 years and 85% were women. On urodynamic interpretation, 76% had DO, while 43% had DSD. Among women diagnosed more than 15 years earlier, the prevalence of DO was somewhat higher (84% vs. 67%,  $P > .05$ ), but VOL was significantly greater (251 vs. 134 ml,  $p = .008$ ). There were no significant differences when comparing older (greater than 49) versus younger patients in any UD variable, except PVR (median 71 vs. 18 ml). UD findings were no different between those patients classified as SPMS versus other designations. Interestingly, while no differences were noted between males and females in the patients younger than 49, among the older group males had significantly higher pdet.max (69 v 21 cm H<sub>2</sub>O,  $p = .009$ ), pdet.Qmax (58 vs. 27 cm H<sub>2</sub>O,  $p = .003$ ) and lower Qmax (6.8 vs. 12.6 ml/sec,  $p = .016$ ).

### Interpretation of results

Women who have had been diagnosed with MS longer are more likely to demonstrate DO, though at a higher volume threshold, perhaps indicating less severe bladder manifestations in this subpopulation with a more slowly developing course. We continue to note a rise in the percentage of MS patients found to have voiding dysfunction on urodynamic evaluation. We believe this to be due a widened recognition of, and comfort level utilizing, therapies to treat neurogenic DO among referring physicians, while adequate, widely available treatments for voiding dysfunction in patients with MS remain elusive.

### Concluding message

DO remains the most common UD finding in patients with MS and women with a more indolent course of MS appear to have a less severe form of DO. Voiding dysfunction among patients with MS is increasingly common in this university-based practice.