Letter to the Editor

Two distinct entities: Bladder oversensitivity and detrusor overactivity

We read Dr. Chen's article entitled “Are patients with bladder oversensitivity different from those with urodynamically proven detrusor overactivity in female overactive bladder syndrome?” with interest.1 Dr. Chen and colleagues prospectively evaluated 205 patients with overactive bladder syndrome (OAB) by urodynamic study to compare the differences between clinical characteristics and urodynamic perception volume with filling cystometry set at a relatively lower filling rate (20 ml/min). The authors found that the use of cut-off value of 127 ml in the item of first desire to void could provide an acceptable predictive value for detecting detrusor overactivity with a sensitivity of 70.6% and a specificity of 59.1%.1 We congratulated the success of publication of the authors.

As shown by authors,1 clinical parameters in their study have already shown the significantly different patterns between bladder oversensitivity and detrusor overactivity. Nocturia is frequently found in women with bladder oversensitivity than that with detrusor overactivity (48.6% vs. 29.6%, p < 0.001).1 By contrast, urgency and urgent incontinence is often found in women with detrusor overactivity than that with bladder oversensitivity (38.5% vs. 14.3%, p < 0.001), and additionally, frequency and urgency occurred in nearly all women with bladder oversensitivity compared to that in the third-fourths with detrusor overactivity (97.1% vs. 77.8%, p < 0.001).1 Although the different clinical presentations of symptoms between bladder oversensitivity and detrusor overactivity are found, it is sometimes difficult for a clinician to distinguish each other. Therefore, with an aid of objective urodynamic study, it may become much easier. We congratulated the authors’ success to provide a relatively good reference to distinguish two distinct entities. The authors found the statistically significant difference of first desire to void between two (117.5 ± 21.7 ml vs. 135.2 ± 22.9 ml, p < 0.001).1 Furthermore, the authors used a receiver operating characteristics curve to detect the cut-off value of 127 ml (0.702, 95% confidence interval 0.629–0.779) which can be used to distinguish bladder oversensitivity from detrusor overactivity.1 Although it is promising, there are some uncertainties which need discussion.

First, the cut-off value to distinguish bladder oversensitivity from detrusor overactivity may be questionable.2 However, it may not be practical, since both bladder oversensitivity and detrusor overactivity are considered as the low compliance urinary bladder.2–4 In addition, less than 20 ml difference of urine during the storage capacity examination between two groups is too small to be used in clinical practice. Both suggested that it might be meaningless. Furthermore, in a conventional urodynamic study, the bladder is normally filled at a rate of between 30 and 100 ml/min, which is significantly higher than maximal normal physiological diuresis, and it is important that filling rate is one of crucial factors in detecting detrusor overactivity, because sensitivity of the afferents toward bladder filling is reduced at higher filling rates (a filling rate is higher and an incidence of detrusor overactivity is lower).4

In fact, OAB belongs to one disease category of the lower urinary tract symptoms (LUTS), which encompass a range of urinary symptoms, such as storage symptoms (e.g., OAB) as well as voiding and post-micturition symptoms.2–4 The core storage symptom is urgency, which drives the other key storage symptoms of increased daytime frequency, nocturia and incontinence, contributing to the most bothersome troubles of the patients.2 From Dr. Chen's study, although main symptoms might be different between bladder oversensitivity and detrusor overactivity, is there any difference of treatment between two distinct entities?

Clinical guidelines suggested that OAB with urinary incontinence is managed by a stepped approach, which stars the first-line conservative measures, such as lifestyle changes and behavioral therapies; and if the first line fails, second-line therapy is followed, such as anticholinergics or beta3-adrenoceptor agonists, and finally the third-line options can be applied if all fail, which include intradetrusor onabotulinumtoxinA, sacral neuromodulation, and percutaneous tibial nerve stimulation.4 Although recommendation is shown above, in the absence of head-to-head trials between different kinds of therapy, the treatment of OAB is still a biggest challenge.2 One systematic review and network meta-analysis compared the efficacy of onabotulinumtoxinA and oral therapies (anticholinergics and mirabegron) for OAB.2 After 12 weeks of treatment, onabotulinumtoxinA (100 U) was associated with the greatest reductions in urinary incontinence episode, urgency episodes, micturition frequency, and the highest odds of achieving 100% and more than 50% reductions in urinary incontinence episodes compared with all other
licensed treatments, including medication, such as anticholinergics and mirabegron. With the aid of urodynamic study to distinguish bladder oversensitivity from detrusor overactivity, is it easy for a clinician to understand the relative effectiveness of these treatment and is it possible for a clinician to provide the better treatment for these patients without time consumption?

We are looking forward to learning the authors’ response.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

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