

Is OAB Different from Bladder Hypersensitivity and Detrusor Overactivity

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INTRODUCTION

It seems that nomenclature related to dysfunction of the lower urinary tract causes confusion between physicians and patients. Without uniformity in terminology, scientific progress and proper diagnosis and treatment may be hindered. Since 1976, the International Continence Society (ICS) has been involved in standardization of the terminology of lower urinary tract dysfunction [1], with the latest report from the Standardization Sub-Committee published in 2002 [2]. However the revision has caused significant confusion and inconvenience among users, as the new terminology has been adopted [3]. For instance, the new definition of urgency states that it must be of sudden onset, and a syndrome for bladder hypersensitivity is still lacking. That is why we need to ask if overactive bladder (OAB) is different from bladder hypersensitivity (BHS) and detrusor overactivity (DO).

DEFINITION

According to the ICS, OAB is urgency with or without urgency incontinence, usually with frequency and nocturia, in the absence of proven infection or other obvious pathology [2]. Therefore OAB is a clinical syndrome with urgency as an essential component for its diagnosis. Urgency is defined by the ICS as a complaint of a sudden, compelling desire to pass urine which is difficult to defer [2]. Urgency was previously considered to be associated with two types of dysfunction including overactive detrusor function (motor urgency) and hypersensitivity (sensory urgency) [4]. Motor urgency was defined as the urgent desire to void observed during urodynamics and synchronous with an involuntary detrusor contraction, and sensory urgency was the urgent desire to void observed during urodynamics without a concurrent involuntary detrusor contraction. Both terms have been abandoned and were eliminated from the 2002 ICS report in order to define OAB without the need to do urodynamics.

In 1999, bladder hypersensitivity was defined as "a urodynamic diagnosis characterized by an early first desire to void (often at a bladder volume of 50 mL) that persists and becomes annoying to the patient, with neither fear of leakage nor fear of pain, with increased sensation which leads to a reduced functional capacity, usually below 250 mL" [4]. However in 2002, the ICS reported the term "bladder hypersensitivity" was no longer used, and instead the seeming equivalent "increased bladder sensation" replaced it. Increased bladder sensation

is defined, during filling cystometry, as an early first sensation of filling (or an early desire to void) and/or an early strong desire to void, which occurs at low bladder volume and which persists [2]. Moreover, increased bladder sensation is also a symptom defined as "the individual feels an early and persistent desire to void". There is discrepancy between symptom and urodynamic observation for increased bladder sensation.

Detrusor overactivity is a urodynamic observation characterized by involuntary detrusor contractions during the filling phase which may be spontaneous or provoked [2].

HOW ARE THEY DIFFERENT?

OAB vs. DO

Generally speaking, detrusor overactivity, a urodynamic observation, may have a lot of possible underlying causes and doesn't represent a definite diagnosis. It may take place with a variety of symptoms/signs, or even in the absence of any symptoms or signs. Overactive bladder is a symptom syndrome suggestive of detrusor overactivity, but it can be due to other forms of voiding or urinary dysfunction [2]. In a retrospective study of 1,076 patients with OAB [5], the authors found that only 64% of the patients had DO. In addition, more than 30% of patients had no OAB but had DO on filling cystometry. Therefore the coexistence of OAB without DO and DO without OAB obviously reflects the fact that they are different. The difference may be interpreted to mean that the bladder is not a very "reliable witness", but simultaneously it discloses that there are many unknowns about the bladder itself deserving further research.

OAB vs. Bladder Hypersensitivity

By definition these two conditions are different. Urgency is the cornerstone symptom of OAB. It is a sudden, compelling, and difficult-to-defer desire to pass urine, while bladder hypersensitivity (BHS) is a urodynamic observation characterized by an early desire to void without fear of leakage or pain that persists and becomes annoying to the patient. The clinical manifestation of bladder hypersensitivity is supposed to be "frequency". However, it is commonly difficult for patients to differentiate the word "urgency" from the normal "urge" desire to void, because patients with OAB can have both urgency and urge, and not every micturition behavior is associated with urgency. Moreover, another debatable issue is whether urgency is a part of the continuum of urge and simply an extreme form of it or a separate all-or-none abnormal sensation exclusively experienced by patients with OAB [6,7]. It is a challenge for physicians to describe urgency to patients clearly enough for them to record it correctly in bladder diaries.

To investigate the relationship between bladder hypersensitivity and overactive bladder, Yamaguchi et al conducted a Patient Trust

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Study in 21 intelligent female patients who could accurately and clearly tell urgency from urge [8]. They concluded and hypothesized that OAB may be more correctly defined as a hypersensitive disorder rather than a syndrome with urgency as a key symptom, because the hypersensitivity phenomenon was observed in their patients regardless of urgency episodes. The urge sensation increased markedly at any given bladder volume among their patients with OAB compared with normal subjects. Coping measures were not common among these patients, and four out of 21 patients experienced spontaneous resolution of several urgency episodes. A 7-day bladder diary showed that 43% of patients who sought medical attention had an average of less than one episode of urgency per day. The hypothesis is quite interesting, and further investigation with more patients is necessary to draw a convincing conclusion.

CONCLUSION

OAB is different from bladder hypersensitivity and detrusor overactivity based on the ICS definition, but there are some overlapping areas between OAB and BHS, and between OAB and DO. OAB may have both sensory and motor components within the syndrome itself. Controversy and confusion surround the term "urgency" and its definition, and particularly the qualifier "sudden" for urgency, should

be settled to prevent limiting effects on clinical research and on the diagnosis and effective treatment of OAB.

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