AUA White Paper on Nonneurogenic Chronic Urinary Retention: Consensus Definition, Treatment Algorithm, and Outcome End Points

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Purpose: The AUA (American Urological Association) QIPS (Quality Improvement and Patient Safety) committee created a white paper on the diagnosis and management of nonneurogenic chronic urinary retention.

Materials and Methods: Recommendations for the white paper were based on a review of the literature and consensus expert opinion from the workgroup.

Results: The workgroup defined nonneurogenic chronic urinary retention as an elevated post-void residual of greater than 300 mL that persisted for at least 6 months and documented on 2 or more separate occasions. It is proposed that chronic urinary retention should be categorized by risk (high vs low) and symptomatology (symptomatic versus asymptomatic). High risk chronic urinary retention was defined as hydronephrosis on imaging, stage 3 chronic kidney disease or recurrent culture proven urinary tract infection or urosepsis. Symptomatic chronic urinary retention was defined as subjectively moderate to severe urinary symptoms impacting quality of life and/or a recent history of catheterization. A treatment algorithm was developed predicated on stratifying patients with chronic urinary retention first by risk and then by symptoms. The proposed 4 primary outcomes that should be assessed to determine effectiveness of retention treatment are 1) symptom improvement, 2) risk reduction, 3) successful trial of voiding without catheterization, and 4) stability of symptoms and risk over time.

Conclusions: Defining and categorizing nonneurogenic chronic urinary retention, creating a treatment algorithm and proposing treatment end points will hopefully spur comparative research that will ultimately lead to a better understanding of this challenging condition.

Key Words: urinary retention, treatment outcome

Abbreviations and Acronyms

AUA = American Urological Association

CUR = nonneurogenic chronic urinary retention

PVR = post-void residual

QIPS = Quality Improvement and Patient Safety Committee

UTI = urinary tract infection

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NONNEUROGENIC chronic urinary retention can be challenging to diagnose and treat because there are no consensus criteria that define the condition. CUR can be caused by different pathologies that create an underactive detrusor and/or result in chronic outlet obstruction (fig. 1). The condition is important because it can be associated with significant morbidity such as hydronephrosis, chronic renal insufficiency and chronic UTIs as well as bothersome urinary symptoms such as incontinence, slow

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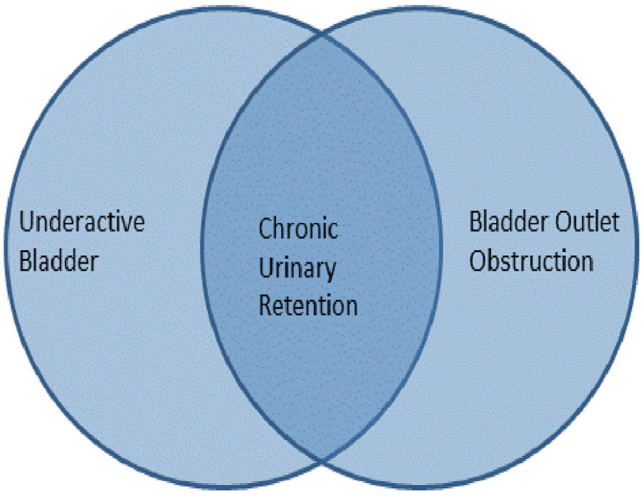

Figure 1. Overlap of chronic urinary retention with clinical syndromes of underactive bladder and bladder outlet obstruction.

urinary stream and feelings of incomplete bladder emptying. However, not all patients with CUR necessarily require treatment to address a specific safety or symptom concern, and CUR treatments can potentially cause injury or adverse effects.[1] Consequently, it is important that clinicians identify patients with CUR who can benefit from treatment but not expose all patients with CUR to costly and even potentially harmful interventions.

The AUA QIPS committee has sought to address the knowledge gap related to CUR by creating this white paper to 1) characterize men and women (older than 18 years) with CUR into clinically definable index populations, 2) propose treatment algorithms for these index populations and 3) propose treatment outcome end points for patients with CUR. Recommendations for this white paper are based on a review of the literature and consensus expert opinion of the CUR white paper panel. The target audience for this white paper is primary care providers who may initially encounter CUR as well as urology and urogynecology providers who follow and treat these patients.

METHODOLOGY

This topic was submitted for development of a comparative effectiveness review from the AHRQ (U.S. Department of Health and Human Services Agency for Healthcare Research and Quality) and was published in September 2014.[2] The recommendations of the workgroup are based on the AHRQ review and an additional search of the English language literature from 1946 through March 2016 regarding urinary retention. The AUA expanded the key questions of the AHRQ evidence report, providing membership and support through QIPS to develop this white paper. Representatives on the CUR workgroup were also included from the Society for Urodynamics and Female Pelvic Medicine and Urogential Reconstruction and the Society of Genitourinary Reconstructive Surgeons.

DEFINING NONNEUROGENIC CHRONIC URINARY RETENTION

The workgroup defines CUR as an elevated postvoid residual of greater than 300 mL that has persisted for at least 6 months and is documented on 2 or more separate occasions. This definition differentiates CUR from either acute/transitory urinary retention or urinary retention caused by a temporally related neurologic, oncologic or situational (iatrogenic or post-procedural) etiology. Urinary retention associated with these conditions is excluded from this definition of CUR as they require that the underlying cause of urinary retention be addressed as part of treatment, and thus need more individual specific recommendations and longitudinal followup. Appendix 1 summarizes conditions that can be associated with CUR.

The workgroup definition of CUR focuses on PVR, a clinically definable parameter for clinicians to measure. Although CUR is often described using terms such as underactive or acontractile detrusor, this term is a urodynamic description of absence of detrusor contractility and can be used only in the context of urodynamic data. Furthermore, diagnosis of an atonic detrusor during urodynamic study does not always imply that the detrusor is unable to contract but only that it was not seen during the study. More recently CUR has been linked with the terms primary bladder muscle underactivity and underactive bladder. The ICS (International Continence Society) has described primary bladder muscle underactivity as "a contraction of reduced strength and/or duration, resulting in prolonged bladder emptying and/or failure to achieve complete bladder emptying within a normal time span."[3–5] However, they have not established a measurable deliverable for diagnosing the condition. Thus, the workgroup definition of CUR overlaps with the definitions of urodynamic detrusor underactivity and underactive bladder but differs because it is a clinical definition based on a measurement threshold and does not require urodynamic testing to investigate detrusor function.

The CUR workgroup chooses greater than 300 mL as the threshold value based on previously published convention and lack of other directional guidance from the literature. The most specific urinary retention definition comes from the ICS, which has defined subcategories of retention as 1) ability of patient to release any urine (complete or partial), 2) duration (acute or chronic), 3) symptoms (painful or silent), 4) mechanism (obstructive or nonobstructive) and 5) urodynamic findings (high or low pressure).[6] This definition does not define PVR