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EDITORIAL COMMENTS

The authors created a cluster analysis of male LUTS. They found 4 distinct groups. Patients with bladder outlet obstruction and urinary incontinence had the lowest symptom satisfaction. This report is part of an ambitious and exciting group of projects from the NIDDK and the LURN. The LURN cohort comprises patients seeking LUTS treatment who will undergo longitudinal deep phenotyping with biomarkers, repeat PRO measures, sensory testing, bladder diaries and neuroimaging.

This is a tremendous time to be a clinician or researcher interested in male LUTS. LUTS are an extremely prevalent, highly morbid and costly condition, and yet so many questions are unanswered about the pathophysiology, natural history and optimal treatment of the condition. How do we prevent the disease? What behavioral modifications help and when? What patient profile responds best to medical management and in what combination?

The surgical marketplace has had a relative explosion of new treatment modalities, approaches and technical refinements, giving our patients many more options to treat LUTS. A goal of parsing out these phenotypic clusters is to study the effectiveness of treatment on clusters to optimize outcomes. Hopefully in the future our care can be tailored more precisely and yield more therapeutic success.

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The goal of this study was to empirically define meaningful subgroups distinguished by unique symptom profiles. The result is 4 distinct clusters based on a detailed symptom survey and a cluster analysis which did not rely on a preconceived notion of symptom categories.

The importance of this work is that it indicates that men with LUTS experience neither a random collection of symptoms nor a clear-cut collection of so-called irritative or obstructive symptoms. What I found most appealing from a clinician perspective is that the clusters make intuitive sense. Each cluster brings to mind a typical patient whom I see and the associations resonate with my own clinical impressions: men with urge incontinence tend to be older and men complaining of post-void dribbling tend to be younger.

This study demonstrates the power of large, multicenter empirical studies combined with complex methods of biostatistical analysis to rewrite our understanding of symptomatic urological conditions, leading to a better understanding of our patients and hopefully to more effective targeted therapies.

LUTS are a product of physiology, perception and behavior with time. By its nature the data collected in this study are a compilation of snapshots taken at random times along that path. What is missing is longitudinal evolution in terms of changing symptoms or severity. Perhaps these will be elucidated in followup studies. In the meantime it is incumbent on the clinician to apply the insights made here while recognizing that LUTS development and manifestation are an evolutionary process and to use knowledge and judgment to guide evaluation and treatment.

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REPLY BY AUTHORS

We appreciate the insightful comments. The symptom based clusters of men with LUTS which we discovered and report are the preliminary findings of an exploratory statistical approach. We plan to continue the analyses using the collected multidomain data, including clinical assessments, non-urological factors, bladder diaries, quantitative sensory testing, functional magnetic resonance imaging of the brain and the longitudinal symptom data. We are pleased to note that the LURN will be continued for another funding cycle of 5 years. Thus, we plan to expand our phenotyping work during this period, potentially using multiple biomarker data.

We also believe that such subtyping efforts should provide insight into the underlying pathophysiology mechanisms and be replicated in other populations and validated before clinically meaningful conclusions can be drawn. Our ultimate goal is to identify distinct patient subtypes which would help clinicians better diagnose, classify and treat