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Original Research Article

The urologists' perspective in management of lower urinary tract symptoms: the questionnaire-based evidence from nationwide survey in India

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ABSTRACT

Background: Lower urinary tract symptoms (LUTS) encompass storage, voiding, and post-micturition disturbances, commonly associated with conditions such as benign prostatic hyperplasia (BPH), overactive bladder (OAB), and urinary tract infections (UTIs). Despite their high prevalence and significant impact on quality of life (QoL), LUTS are often under-recognized. This survey assesses urologists' perspectives on the diagnosis and management of LUTS, focusing on real-world practices in the Indian context.
Methods: A cross-sectional survey was conducted among 438 urologists in India from October 2024 to December 2024 to assess clinical practices in managing LUTS. A 20-question questionnaire captured diagnostic preferences, treatment approaches, and clinical perspectives. Responses were compiled and analyzed using Microsoft excel 365, with results presented as counts and percentages and visualized to highlight trends across participants.
Results: In the survey, 80.4% of urologists reported urine culture as the most commonly performed diagnostic test. Age (62.3%) and symptom severity (34.2%) were the main factors guiding treatment decisions. For uncomplicated UTIs, 83.8% preferred Nitrofurantoin. BPH was the most frequent comorbidity with OAB (68.5%), and 53.4% identified lack of patient awareness as a major challenge. For OAB maintenance, 59.4% preferred Mirabegron monotherapy.
Conclusions: The survey provides valuable insights into contemporary prescribing practices in urology. Nitrofurantoin remains the mainstay for uncomplicated UTIs, Mirabegron is increasingly adopted as first-line and maintenance therapy for OAB, and Silodosin, alone or in combination with Dutasteride or Tadalafil, is preferred in BPH, particularly in patients with comorbidities. Limited patient awareness, especially in OAB, highlights the need for improved education and greater integration of individualized, evidence-based pharmacotherapies into routine practice.

Keywords: Lower urinary tract symptoms, Benign prostatic hyperplasia, Overactive bladder, Urinary tract infections, Urologists

INTRODUCTION

Lower urinary tract symptoms (LUTS) represent a spectrum of clinical manifestations related to abnormalities in urinary storage, voiding, and post-micturition function, as defined by the international continence society (ICS).[1] These symptoms include frequency, urgency, nocturia, weak stream, intermittency, dribbling, and a sensation of incomplete emptying, and they vary widely in presentation and severity across individuals. LUTS may arise from or coexist with UTIs, OAB, BPH, or pelvic floor dysfunction.[2] Although not life threatening, LUTS are frequently under-recognized and inadequately managed, leading to substantial symptom burden, impaired QoL, and psychological distress.[3] A comprehensive meta-analysis including 222 studies from 36 countries with over 1.6 million samples found an overall LUTS prevalence of 63.2%, with a higher burden

in males, older adults, and populations in Asia.[4] Their prevalence is strongly age-related. In a large community-based Japanese survey study of 6,210 adults aged 20-99 years confirmed high rates, with LUTS present in 77.9% overall and 82.5% among those ≥40 years.[5]

BPH, a major contributor to LUTS in men, is characterized by non-malignant enlargement of the prostate gland.[6] Symptoms include urgency, frequency, nocturia, weak stream, and incomplete emptying. Globally, BPH affects 20-62% of men over 50 years.[7] In India, prevalence rises from 25% in men aged 40-49 to nearly 50% by 70-79 years, meaning over half of men experience BPH by age 60.[8] OAB often coexists with BPH, worsening urgency and nocturia and increasing patient distress.[9] LUTS also raise the risk of UTIs, retention, and hematuria, highlighting the need for proper bladder management.[10] Diagnosis relies on clinical evaluation, symptom scores, bladder diaries, and uroflowmetry; complex cases may need urodynamic testing. Management is individualized based on disease severity, comorbidities, and treatment tolerance, but real-world practice often faces diagnostic variability and limited patient awareness in the Indian setting.[11]

The current cross-sectional survey was conducted using a structured questionnaire to gather urologists' perspectives on the diagnosis and management of LUTS particularly focussing on BPH, OAB, and UTIs. The survey explored key areas including diagnostic preferences, treatment approaches, patient education, and the impact of comorbidities on clinical decision-making.

This study aims to explore real-world practice, particularly in the Indian context, by highlighting how therapeutic efficacy, comorbidity burden, and everyday clinical challenges influence care delivery.

METHODS

A cross-sectional survey was conducted among of urologists in India between October 2024 and December 2024 to understand the clinical practices for managing LUTS. The study included 438 urologists with at least one year of experience in urological care, practicing across academic institutions (teaching institutes and hospitals) as well as clinical settings (private hospitals, nursing homes, and consultation chambers).

A self-administered questionnaire of 20 structured questions was designed to capture clinical perspectives, diagnostic choices, and treatment approaches. The survey was shared electronically via a secure platform with voluntary participation. Basic demographic data like age, years of experience, and type of clinical setting, were collected keeping responses anonymous. All responses were compiled and analysed using Microsoft excel 365 (Version 22502, March 11), with results presented as counts and percentages and visualized in graphs to highlight trends across participants.

RESULTS

The survey revealed that the urine culture was the most commonly performed diagnostic test, which was reported by majority (80.4%) of the urologist. Age was the major decisive factor considered by 62.3% and symptom severity was considered by 34.2% urologists while making their treatment decisions. Nitrofurantoin (83.8%) was the most frequently prescribed molecule for uncomplicated UTIs management. However, use of Fosfomycin (8.2%), Trimethoprim-sulfamethoxazole (1.8%) and Faropenem (1.6%) was relatively uncommon among urologists. BPH was reported as the commonest (68.5%) condition with OAB and lack of patient awareness was identified as the most common challenge, reported by 53.4% of the urologists. The survey highlighted BPH as the common comorbid condition associated with OAB as reported by 68.5% of urologists followed by diabetes (21.7%), UTI (6.6%) and neurological disorders (3.2%). Regarding the duration of Mirabegron therapy in OAB patients, 48.4% of urologists prescribed it for 3-6 months, while 40.9% preferred a shorter duration of 1-3 months (Figure 1A). Around 45.2% urologists specified that 50 to 75% of OAB patients respond to Mirabegron as a first-line therapy (Figure 1B).

For long-term maintenance of OAB, the majority of urologists (59.4%) preferred Mirabegron monotherapy as a step-down treatment. Additionally, 24.0% recommended continuing with a reduced dose of combination therapy, while 15.7% preferred Solifenacin monotherapy as a maintenance option (Figure 2). This variation in maintenance strategies reflects the need to balance efficacy, tolerability, and patient adherence in routine practice.

The majority of urologists (73.3%) reported medical journals as their preferred resource for staying updated on BPH treatment, while 16.7% preferred attending professional conferences. Treatment decisions for BPH were primarily guided by patient age, as indicated by 62.3% of urologists, followed by symptom severity (34.2%) and existing comorbidities (2.5%). Regarding the use of Silodosin, 53.2% of urologists reported prescribing it in 50-75% of their BPH patients. Additionally, 26.0% prescribed it in 25-50% of cases, 17.4% in more than 75%, and only 3.4% in less than 25% of cases. The primary factor influencing decision to prescribe Silodosin was symptom severity (70.8%), followed by patient age (16.4%) and comorbidities (11.0%), while sexual health played a minor role (1.8%) (Figure 3).

The Silodosin-Tadalafil combination was predominantly prescribed for sexually active patients (79.4%), with fewer urologists choosing it for less active patients (15.1%) or those with low urinary flow (5.5%). While interestingly, vitamin D deficiency has been also studied for its potential role in the severity of LUTS, with some evidence suggesting that low vitamin D levels may worsen symptom severity. According to the survey results, 272 responses

(62%) indicated a positive correlation between vitamin D deficiency and LUTS severity, while 210 responses (48%) expressed uncertainty, reflecting mixed opinions on the relationship.

Symptom severity and existing comorbidities were reported as the primary factors for prescribing Silodosin over Tamsulosin by 64.8% and 26.3% of urologists respectively. For BPH patients with cardiac comorbidities, Silodosin was considered the safest α-blocker by majority (80.6%) of urologists, followed by Tamsulosin (12.5%), Alfuzosin (6.2%), and Prazosin (0.7%) (Figure 4). Combination therapy emerged as the predominant strategy in patients with an enlarged prostate and a history of kidney stones. Silodosin with Dutasteride was the most frequently prescribed regimen (48.6%), markedly higher than Tamsulosin with Dutasteride (30.6%) and Tamsulosin with Deflazacort (19.6%), whereas Tadalafil with Silodosin was rarely selected (1.1%) (Figure 5).

Regarding role of Finasteride's in cancer-prevention, 47.9% of urologist expressed a neutral stand. Meanwhile 23.1% reported no confidence, 11.4% were somewhat confident, 9.8% were very confident, and 7.8% were somewhat unconfident. When selecting Finasteride over Dutasteride, the most common reason cited was concern about potential drug interactions (36.5%), followed by its suitability for mild to moderate BPH symptoms (21.2%), shorter treatment duration (15.5%), non-significantly enlarged prostate (14.2%), and the presence of hematuria (12.6%). A significant proportion of urologists (74.7%) emphasized that patient education plays a crucial role in effective management of both BPH and OAB.

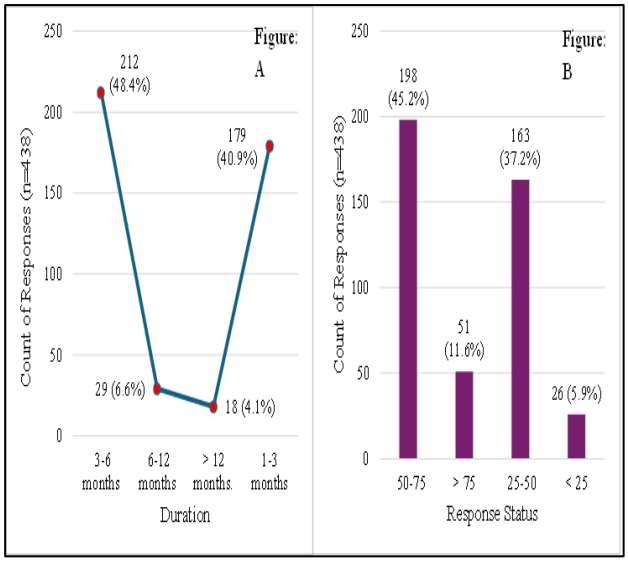

Figure 1 (A and B): A-Average duration of Mirabegron therapy for OAB patients. B: Percentage of OAB Patients responding to mirabegron as first-line therapy.

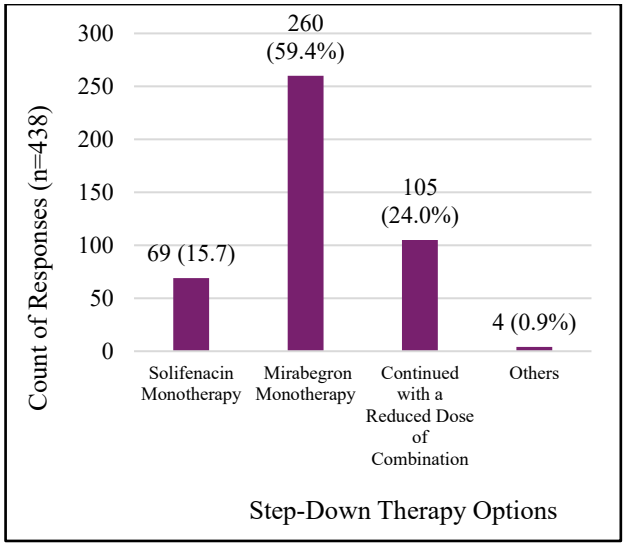

Figure 1: Preferred step-down option for long-term maintenance therapy in OAB patients.

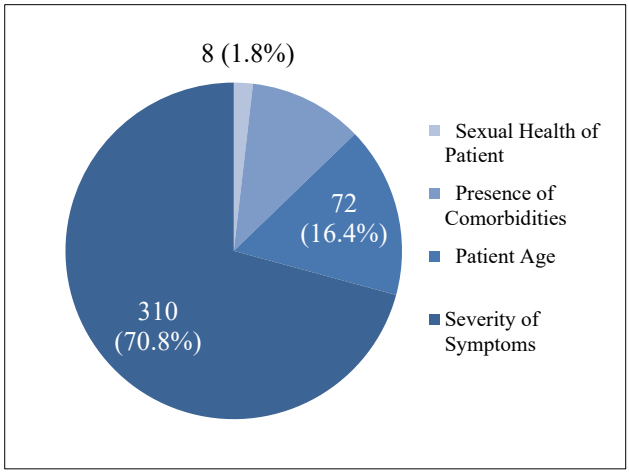

Figure 2: Factors influencing urologists decision to prescribe silodosin.

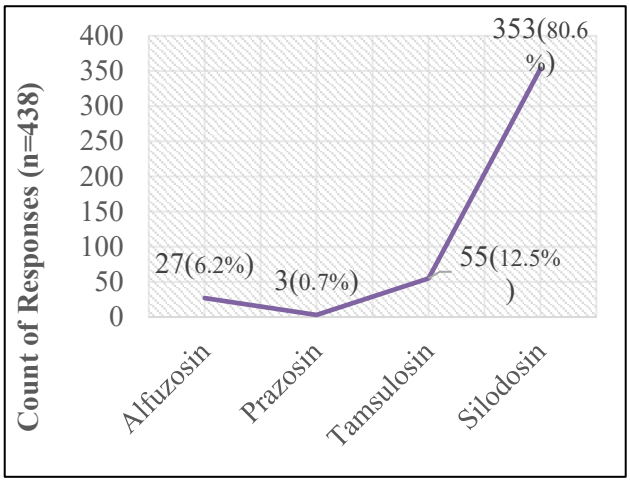

Figure 3: Safer α-blocker for managing BPH in patients with cardiac diseases.

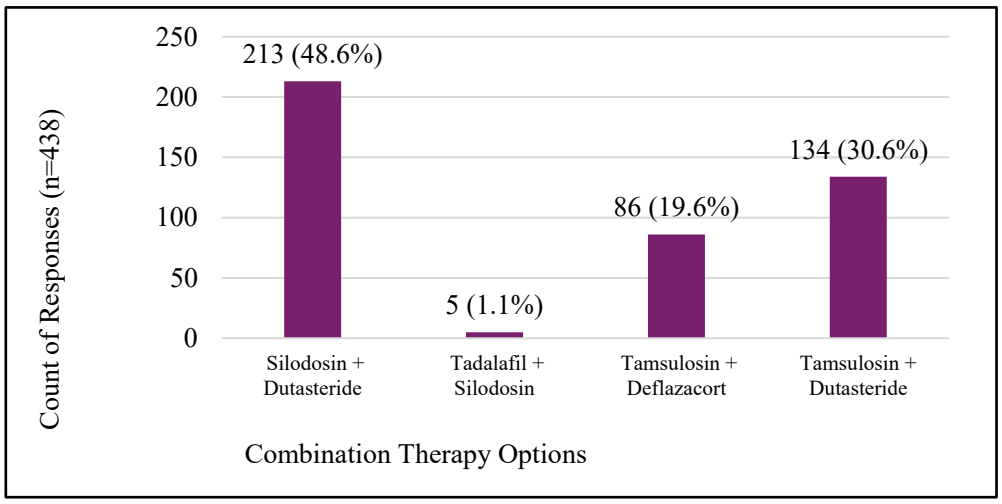

Figure 4: Combination therapy for large prostate and kidney stones.

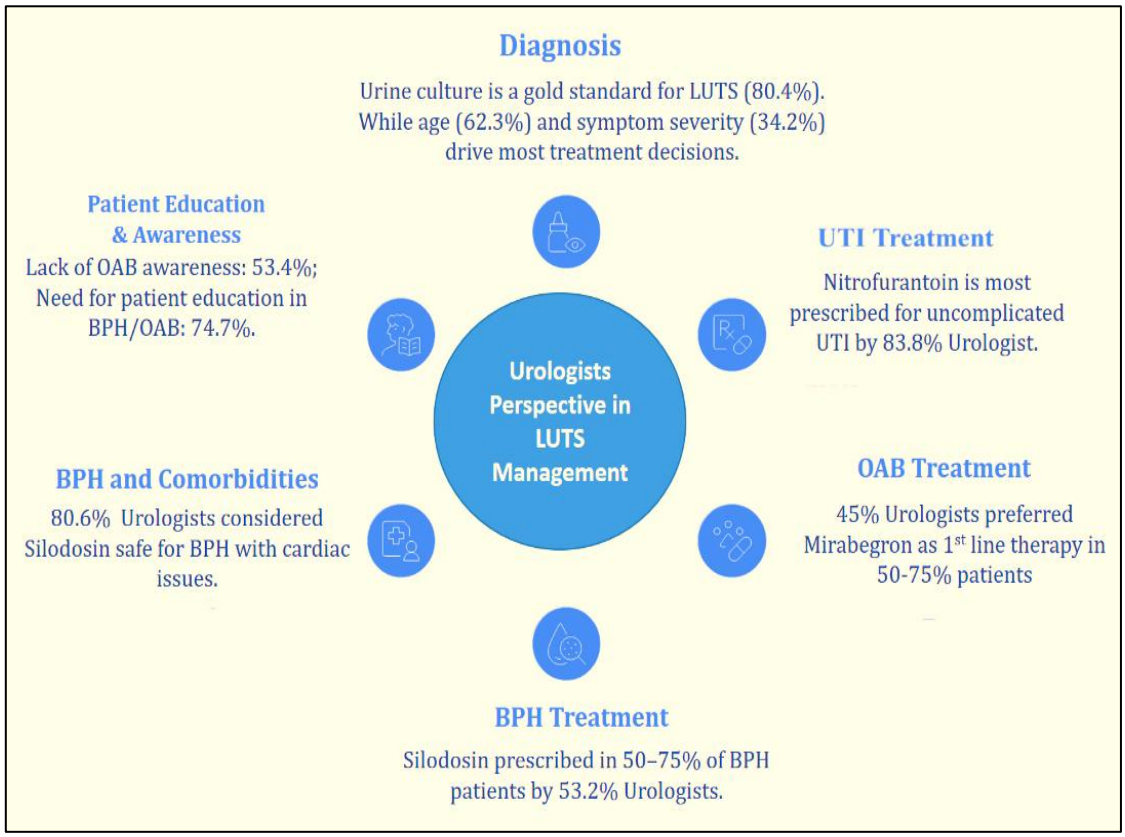

Figure 5: Summary of urologists perspective in LUTS management.

DISCUSSION

The current survey explores the urologist's practices and perspective in real world how they are managing UTIs, OAB and, BPH, the most common and challenging LUTS. These conditions significantly influence patients' QoL, and the insights gathered reflect the real-world decisions clinicians make in their daily practice. By exploring current diagnostic and treatment preferences, the findings help us better understand the practical strategies being used to address these burdensome conditions.

Turning to UTIs, diagnosis in routine clinical practice remains challenging due to delays associated with urine culture, which is the gold standard for confirmation. While urine culture offers definitive diagnosis, its turnaround time often necessitates clinicians to initiate empirical treatment based on patient-reported symptoms, dipstick

tests, and occasionally microscopic urine examination. Each of these alternatives has its limitations-dipstick testing lacks sufficient sensitivity and specificity, and urine microscopy is both resource-intensive and examiner-dependent[12]. This diagnostic gap becomes particularly problematic in patients presenting with non-specific symptoms such as fever, abdominal discomfort, or back pain, where the risk of misdiagnosis or delayed treatment increases. The survey emphasized that most Indian urologists rely on urine culture for confirmation but also acknowledge the utility of dipstick testing as a faster, though less conclusive, initial diagnostic tool.

Regarding antimicrobial therapy for uncomplicated UTIs, commonly used agents include Trimethoprim-sulfamethoxazole, Fluoroquinolones, β-lactams (e.g., Faropenem), Nitrofurantoin, and Fosfomycin Tromethamine. These choices reflect a balance of broad-spectrum efficacy, tolerability, and pharmacokinetic profiles.[13] Consistent with prior publications, the survey highlights that Nitrofurantoin is the most frequently prescribed first-line antibiotic, whereas the use of Fosfomycin, Trimethoprim-sulfamethoxazole, and Faropenem is relatively very less.

LUTS, particularly those associated with OAB, are prevalent across all age groups and both sexes, often leading to significant deterioration in physical, psychological, social, and sexual well-being.[14] Despite its burden, many patients up to 40% do not seek care, largely due to misconceptions, stigma, and lack of awareness. These barriers are further supported by the findings, with urologists citing a lack of awareness as the leading obstacle during OAB screening and diagnosis. Pharmacological management is centered on anti-muscarinics such as Solifenacin and β3-adrenoceptor agonists like Mirabegron. Evidence supports the efficacy of both monotherapy and combination therapy in improving outcomes without major safety concerns.[15] Mirabegron, in particular, is gaining favour among Indian urologists, with 50-75% reporting its use as a first-line treatment. This is in line with real-world studies showing initiation rates of over 50%.[16] The reported treatment duration also aligns with published literature indicating an average duration of approximately four months, with most urologists prescribing it for 3-6 months.[17]

When considering BPH, standard treatment guidelines play a central role in guiding therapy selection. Besides this, urologists often tailor decisions based on individual patient characteristics. According to the American urological association (AUA), α-blockers remain the first-line monotherapy for patients with moderate to severe BPH symptoms. In the current survey, urologists reported making therapeutic choices not only based on guideline recommendations but also considering factors such as the severity of symptoms, presence of comorbidities, history of stone disease, and concerns about sexual side effects. Preferences also differed in relation to prostate size, voiding patterns, and overall patient health status. These detailed considerations reflect the clinician's emphasis on individualized therapy rather than a "one-size-fits-all" approach.

Within this context, Silodosin emerged as a preferred α-blocker among Indian urologists, especially in specific patient subsets. Symptom severity and comorbid conditions were key drivers influencing the choice of Silodosin over Tamsulosin in the management of BPH and LUTS. Nearly half of the surveyed urologists reported prescribing a combination of Silodosin and Dutasteride for patients with enlarged prostate and a history of kidney stones, supported by evidence demonstrating improvements in symptom relief, prostate volume reduction, and IPSS (International prostate symptoms score) metrics.[18] In addition, Silodosin's favorable safety profile and broader utility such as in nocturia, chronic prostatitis, and chronic pelvic pain were cited as reasons for its use in overlapping urological conditions. Several urologists also highlighted Silodosin's effectiveness in the management of ureteral stones and associated pain.[19] Furthermore, sexually active male patients were frequently prescribed a combination of Silodosin and Tadalafil due to its minimal impact on sexual function and superior symptom control that aligns with supporting evidence from randomized clinical trials and real-world practice studies demonstrating improved outcomes in LUTS with coexisting erectile dysfunction.[20-22] Survey findings highlight a possible link between vitamin D deficiency and LUTS severity in men. These perceptions align with the study that showed reduced serum vitamin D was associated with poorer prostate health and worse LUTS. The data support vitamin D assessment as a potentially relevant adjunct in LUTS management, though mixed opinions emphasize the need for larger controlled trials to clarify mechanisms and therapeutic value.[23]

The consideration of comorbidities plays a critical role in urological treatment decisions. The survey highlighted BPH as the most frequently associated comorbidity among patients presenting with OAB symptoms. This aligns with prior literature indicating that neurological disorders (e.g., stroke, Parkinson's disease, multiple sclerosis), metabolic conditions (e.g., diabetes mellitus, diabetes insipidus), and urological factors (e.g., urolithiasis, recurrent infections, malignancies) all contribute to OAB symptomatology.[24] Against this background, the role of phosphodiesterase-5 (PDE-5) inhibitors has acquired increasing attention in BPH management, particularly for patients concerned about sexual side effects. Both Tadalafil and other PDE-5 inhibitors are available in the Indian market, with Tadalafil being the preferred agent among urologists due to its dual benefit in improving LUTS and erectile function. The survey confirmed the integration of PDE-5 inhibitors into routine care, especially in combination with α-blockers, as part of a patient-centric approach in managing BPH and associated symptoms. Although large-scale studies like the prostate cancer prevention trial and subsequent findings have highlighted the potential of Finasteride in reducing prostate cancer risk, the current survey revealed limited

clinical confidence in this preventive application.[25,26] Only a minority of respondents expressed strong support for its routine use, suggesting ongoing caution or uncertainty in translating such evidence into practice.

Finally, due to the lack of patient awareness, a significant barrier, especially in the early detection of OAB, patient education is reported to be very important by the vast majority of respondents. Among all the available formats for educating patients, one-to-one discussions emerged as the most effective methodology. Collectively, these findings highlight the need for enhanced patient education, more targeted treatment algorithms, and continued research to optimize the management of LUTS across diverse patient populations. The overall outcomes of the current survey highlighted in Figure 6, explores the diagnostic preferences, treatment approaches in UTI, BPH alone and along with comorbidities, OAB along with need for patient awareness and education.

The survey study showed good outcomes in management of urological practice although it poses some limitations like, it is based on a cross-sectional, questionnaire-based survey relying on self-reported data from urologists, which may introduce recall and response biases. Participation was voluntary, potentially leading to selection bias and limiting the generalizability of findings to all urology practitioners. The analysis was purely descriptive, with no adjustments for confounding factors, restricting the ability to draw causal inferences. Additionally, regional variations in clinical practices across India may affect the applicability of results. Importantly, the survey focused on urologists' perception without including patient outcome data, limiting objective evaluation of clinical LUTS management practices.

CONCLUSION

The current survey provides urologists perspective into the prescribing patterns and clinical decision-making practices in management of UTI, OAB and BPH. Urine culture remains the diagnostic standard for UTIs, with Nitrofurantoin as the preferred first-line treatment in uncomplicated UTI. In OAB, Mirabegron is the preferred first-line and maintenance therapy. While for BPH, treatment decisions are guided by age and symptoms severity, with Silodosin favoured especially in patients with cardiac comorbidities or concurrent urological disorders. Combination therapies with Dutasteride or Tadalafil reflect a personalized approach. Across all conditions, lack of patient awareness particularly in OAB emerged as a key barrier, reinforcing the need for better education and individualized care approaches.

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