

The Urological Society of India survey on urinary incontinence practice patterns among urologists

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ABSTRACT


Introduction: The Urological Society of India guidelines panel on urinary incontinence (UI) conducted a survey among its members to determine their practice patterns in the management of UI. The results of this survey are reported in this manuscript.

Methods: An anonymous online survey was carried out among members of the USI to determine their practice patterns regarding UI using a predeveloped questionnaire on using SurveyMonkey®. A second 4-question randomized telephonic survey of the nonresponders was performed after closure of the online survey. Data were analyzed by R software 3.1.3 ($P < 0.05$ significant).

Results: A total of 468 of 2109 (22.2%) members responded to the online survey. Nearly 97% were urologists, 74.8% were working at a private, and 39.4% were in an academic institution. Almost all were managing UI. 84.2% had local access to a urodynamics (UDS) facility. 85.8% would check postvoid residual urine for all the patients. Voiding diary, symptom scores, quality of life scores, pad test, Q-tip test, stress test, uroflow, and cystoscopy were ordered as part of evaluation by 86.0%, 49.8%, 24.4%, 22.0%, 6.0%, 71.8%, 69.2%, and 34.7%, respectively. 47.6% would order a UDS for patients with urgency UI who fail conservative treatment. 36.9% would get UDS prior to all stress UI surgery. Seventy-five percent would make a diagnosis of intrinsic sphincter deficiency. Solifenacin was the first choice for urgency UI in general and darifenacin was preferred in elderly. Botulinum was the first choice for refractory urgency UI. Midurethral sling was the commonest procedure for surgical management of SUI (95.1%). 147 of the 1641 nonresponders were randomly sampled telephonically. Telephonic respondents had similar access to UDS facility but had performed fewer lifetime number of post-prostatectomy incontinence (PPI) surgeries. Combining data from both surveys, total number of artificial sphincters and PPI surgeries ever performed by USI members was estimated at 375 and 718 respectively.

Conclusion: This survey provides important new data and elicits critical differences in management practices based on demographics.

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INTRODUCTION

Clinical practice guidelines are based on evaluation of the available evidence. However, the socioeconomics and the availability of facilities or expertise can influence recommendations.^[1-3] Hence, guidelines from different countries differ in their recommendations despite examining essentially the same evidence. The Urological Society of India (USI) urinary incontinence (UI) Guidelines Committee commissioned in August 2017 noticed a lack of evidence with regard to the practice patterns of its members and decided to conduct a survey to address this lacuna. All fully qualified USI members were offered an online survey, following which a randomized telephonic survey was carried for those who did not take the online survey to project key data points.

METHODS

This survey was conducted on the behalf of the USI and was endorsed by it. The online survey was a cross-sectional study of fully qualified USI members with regard to their practices of evaluation and treatment of UI. The survey consisted of 32 questions related to demographic data, evaluation, conservative management and surgery for UI, postprostatectomy incontinence (PPI), and a feedback column [Appendix 1]. One question dealt with the lifetime number of PPI surgeries performed by the respondents. This anonymous survey was conducted on the SurveyMonkey® platform, but the IP addresses were recorded with a restriction of a single response from each address.

The lead author created the first draft of the survey and a trial run was conducted online amongst the committee members. This was followed by an offline trial by 22 urologists from Vijayawada and Guntur at an unrelated academic program and a second online pilot survey amongst the committee members. At each step, the survey was edited before the final version went live for three weeks in November 2017. During this period, email, mobile phone messages, and WhatsApp® messages were sent using the USI membership database, contact groups of the zonal offices of USI, and city WhatsApp® groups.

Following the closure of the online survey, the sample size was estimated for conducting a random telephonic sampling to evaluate the non-responders. Randomization was executed using the USI membership database and a computerized random number generator. The primary objective of the abbreviated telephonic survey was to estimate the number of PPI surgeries performed by those who did not take the online survey. Additional questions examined the members interest in UI and the availability of urodynamics (UDS). A pilot telephonic survey showed that 14% additional numbers would need to be called to account

for incorrect telephone numbers or unreachable members. The actual calculation had to await the closure of the online survey and is discussed in the next section.

Statistical analysis was performed using R statistical program (version 3.1.3) by Chi-square evaluation ($P < 0.05$ significant). 95% confidence estimates were generated for the projected number of PPI surgeries done by nonresponders.

RESULTS

There was a wide geographical response with a significantly larger proportion from the North Zone [Figure 1 and Table 1]. Of the respondents, 97.1% were urologists, 1.3% urogynecologists, 0.2% gynecologists, and 1.3% the rest. 74.8% of respondents were working in the private sector and 39.4% were at a teaching institution [Figure 2]. 32.4%, 19.2%, 16.2%, and 32.2% had graduated <5 years, 5–10 years, 10–15 years, and >15 years ago, respectively. 33.7% described UI as an area of specific focus, 64.8% treated UI, but without a special interest, 1.1% treated UI but did not operate stress UI (SUI), and 0.4% did not treat UI at all. 52.9% had UDS facility at their institution, 31.3% referred to a local facility, while the rest used a facility outside their city. Physicians, resident doctors, technicians, and continence nurses performed the UDS in 37.3%, 25.9%, 35.8%, and 1.0%, respectively.

Table 1: Respondents according to the Urological Society of India zones. Total full members as per the Urological Society of India membership directory on December 15, 2017

Zone	Respondents (%)	Total full members
East	41 (19.6)	209
West	92 (17.3)	531
South	171 (20.8)	823
North	161 (29.5)	546
Total	468 (22.2)	2109

Significant difference ($P < 0.00001$) in response rate from different zones with North Zone showing the highest response rate (29.5% vs. 19.6% rest)

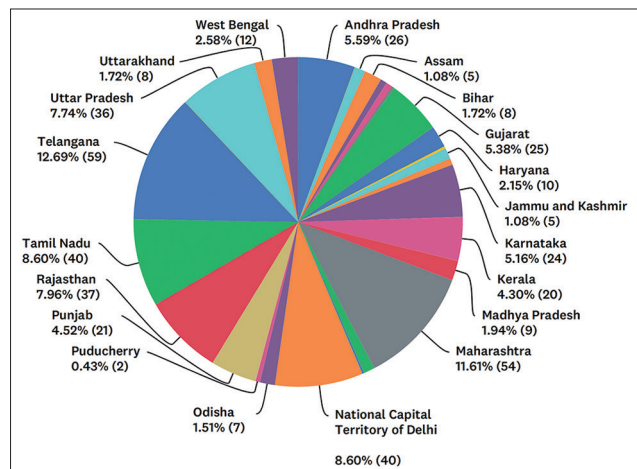


Figure 1: Geographical distribution of respondents

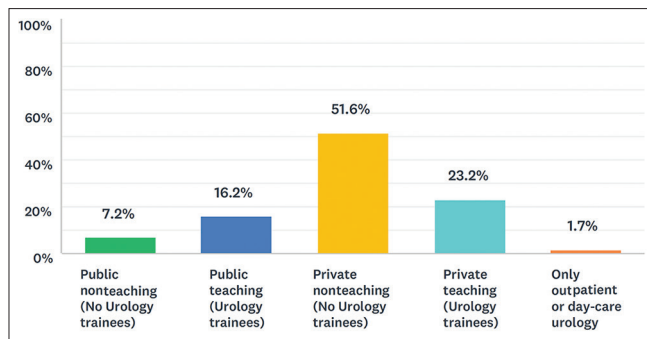


Figure 2: Practice setting of respondents

East Zone respondents were less likely to be working in a teaching private institution (9.8% vs. 24.8% rest, $P = 0.030$). North Zone members were most likely to be using the services of a UDS technician (45.3% vs. 31.4% rest, $P = 0.006$). Based on the practice settings, teaching hospitals (private and public) were more likely to have a UDS facility (80.4% vs. 35.2% non-teaching, $P = 0.000$) but these were less likely to be manned by a UDS technician (27.0% vs. 43.2% rest, $P = 0.001$). Most of the tests at these centers were performed by resident doctors. Other baseline parameters were similarly distributed when analyzed according to USI zones and practice setting. There was no difference in the distribution of these parameters based on years of experience or in-house availability of UDS facility.

The survey examined several aspects of evaluation of patients with UI [Figure 3]. 85.8% of all respondents would check post-void residual volume (PVR) in all the patients with UI, 12.9% would check it only in patients with suspected voiding dysfunction, with the remaining not inclined to check PVR at all. Office-based practitioners were less likely to measure PVR (4 out of 8, 50%) or to perform a stress test ($P = 0.0003$). Those in teaching hospitals were more likely to perform uroflowmetry (74.6% vs. 64.1% rest, $P = 0.017$). The most experienced practitioners (≥ 15 years) were less likely to perform a Q-tip test (2.0% vs. 7.9% rest, $P = 0.012$). South Zone members were less likely to use a voiding diary (79.0% vs. 88.4% rest, $P = 0.006$) but were more likely to use diagnostic cystoscopy (45.0% vs. 27.2% rest, $P = 0.000$). Those utilising an outstation UDS facility were less likely to ask for a voiding diary (73.0% vs. 87.8% rest, $P = 0.001$), quality of life score (6.8% vs. 27.5% rest, $P = 0.0001$), pad test (12.2% vs. 23.7% rest, $P = 0.028$), or uroflowmetry (50.0% vs. 72.0% rest, $P = 0.0002$) but were more likely to perform cystoscopy (45.9% vs. 32.3% rest, $P = 0.024$).

With regard to ordering a UDS study for urgency UI, 47.6% would get it for patients who fail conservative therapy, 12.3% would order it prior to an invasive treatment for refractory patients, and 37.1% would order it only if considering an alternate diagnosis, while the rest would get it done in all patients. With regard to stress UI, 36.9%

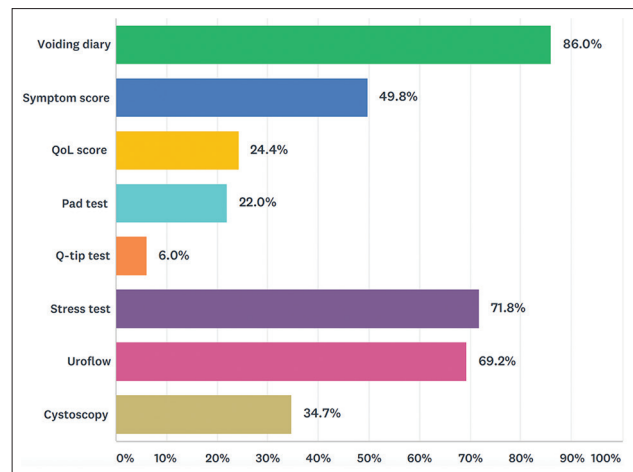


Figure 3: Routine usage (defined as usage in $\geq 75\%$ of patients) of different evaluation modalities by respondents

each would order a UDS study for select patients with complicated stress UI or prior to all surgical interventions. 20.6% would order UDS if considering an alternate diagnosis while 5.9% would order it for all patients. 25.0% would not make a diagnosis of intrinsic sphincter deficiency (ISD), whereas, 50.2% would measure the ALPP, 15.0% would measure the MUCP, and 9.8% would only make a clinical diagnosis of ISD by the empty bladder supine stress test. North Zone members were more inclined to order UDS for urgency UI (47.1% vs. 31.2% rest, $P = 0.001$). East Zone members were most likely to order UDS for all patients presenting with stress UI (17.1% vs. 4.8% rest, $P = 0.002$). Private nonteaching hospitals were least likely to perform UDS prior to all surgeries (30.0% vs. 43.7%, $P = 0.002$). 74.1% of respondents asserted that the UDS findings would impact their stress UI surgery decisions with modifications for ISD, concomitant detrusor overactivity, or voiding dysfunction. Those using an outstation UDS facility were more likely to modify their decisions based on UDS findings (85.0% vs. 69.2% rest, $P = 0.012$).

The survey examined utilisation of physiotherapy and bladder training for the management of UI. Physiotherapy was used for all UI patients by 24.4%, for all SUI or mixed UI (MUI) patients by 47.2%, for select patients by 22.3% and not used at all by 6.2% of the respondents. Corresponding figures for bladder training were 29.0%, 33.3% (all urge UI and MUI patients), 27.4% and 10.3% respectively. These management strategies were more likely to be taught by a UDS technician in public nonteaching hospitals. Senior members (≥ 15 years) were more likely to not use physiotherapy at all (12.1% vs. 3.4%, $P = 0.0004$).

With regard to drug therapy for urgency UI, the drug of first choice was oxybutynin, tolterodine, solifenacin, darifenacin, trospium, and mirabegron for 5.7%, 28.6%, 46.7%, 13.0%, 1.6%, and 4.5%, of the respondents respectively, for urgency UI in general and 3.6%, 13.8%, 29.0%, 34.2%, 10.9%, and

8.4%, respectively, for elderly with urgency UI. Solifenacin was the overall first choice in all but the South Zone (29.9% vs. 56.7% rest, $P = 0.000$). There were no differences in the choice of drug based on practice settings or years of experience. For stress UI, 53.5% would use long-term duloxetine in the appropriate patient. South Zone members were more likely (56.5% vs. 41.6%, $P = 0.008$) while recently graduated members < 5 years, were least likely to use the drug (40.7% vs. 59.8% rest, $P = 0.0007$).

The number of respondents who had ever performed botulinum toxin injection, sacral neuromodulation, or percutaneous tibial nerve stimulation was 51.5%, 6.0%, and 6.4%, respectively. Respondents from private teaching hospitals (61.5% vs. 47.0% rest, $P = 0.008$), those who graduated ≤ 10 years ago (55.4% vs. 45.1%, $P = 0.025$) and those with in-house UDS facility (63.2% vs. 36.6% rest, $P = 0.000$) were more likely to have ever performed botulinum toxin injections. Overall, the first choice for refractory urgency UI was botulinum toxin injections, sacral neuromodulation, and percutaneous tibial nerve stimulation for 87.9%, 9.1%, and 3.0% of the respondents, respectively. Most respondents would choose a 100 U starting dose for onabotulinum toxin A (63.3%), followed by <100 U (21.5%) and 200 U (15.3%). There were no differences in these findings on zone wise, practice setting wise, and years of experience wise analysis. However, those utilising an outstation UDS facility were less likely to choose botulinum toxin for refractory urgency UI (80.0% vs. 89.4% rest, $P = 0.045$) and those with an in-house UDS facility were more inclined to use a higher dose (19.9% vs. 9.0% rest, $P = 0.004$).

The survey inquired regarding types of stress UI surgeries ever performed by members and found that retropubic tape, transobturator tape, single-incision sling, autologous sling, Burch colposuspension, and bulking agents had been performed by 37.0%, 60.5%, 9.2%, 14.7%, 30.1%, and 14.3%, of the respondents respectively. Respondents from private teaching hospitals were most likely to have ever performed a retropubic tape (56.0% vs. 39.4% rest, $P = 0.002$) and Burch colposuspension (41.3% vs. 26.7% $P = 0.004$). Those with <5 years practice were least likely to have ever performed a tension-free vaginal tape (28.3% vs. 50.5%, $P = 0.000$) or Burch (12.5% vs. 38.2% rest, $P = 0.000$) while those with >10-year experience were more likely to have ever performed an autologous sling (19.8% vs. 9.9% rest, $P = 0.002$). Those with an in-house UDS facility were more likely to have ever performed a midurethral sling (74.1% vs. 64.7% rest, $P = 0.028$). East Zone members were less likely to have ever performed a Burch colposuspension (9.8% vs. 32.1% rest, $P = 0.003$). There were no difference in the first choice of surgery based on zone, practice settings, years of experience, or availability of UDS [Figure 4].

In regard to midurethral slings surgery, 68.4% of the respondents performed an intra-operative stress test and

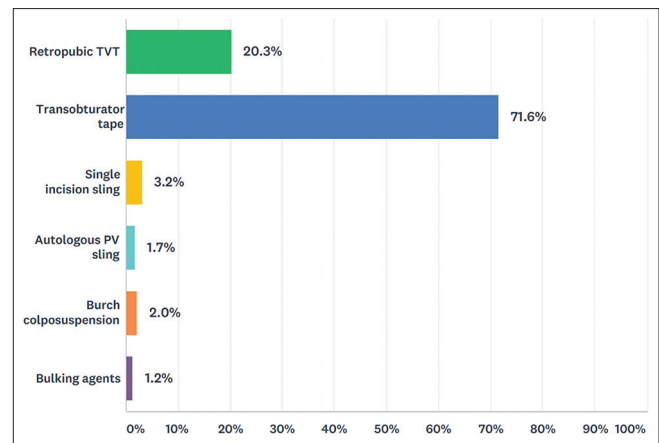


Figure 4: Default procedure for uncomplicated stress urinary incontinence

universal cystoscopy. 73.9% would call in a gynecologist or urogynecologist to operate upon a concomitant prolapse. South Zone members were more likely to surgically correct the prolapse themselves (34.4% vs. 22.0% rest, $P = 0.012$). 60.6% would not prefer surgical treatment of occult stress UI. For all other analyses, there were no differences based on zone, practice setting, years of experience, or availability of UDS.

The survey included two key questions with regard to PPI. 81.0% of the respondents had never performed surgery for PPI. Those from teaching hospitals (29.6% vs. 12.0% rest, $P = 0.000$), those with > 15-year experience (25.9% vs. 16.1%, $P = 0.029$) and those with in-house UDS facility (26.8% vs. 9.4% rest, $P = 0.000$) were most likely to have ever performed the surgery. Private teaching hospitals also accounted for 46.7% of all the high-volume surgeons.

The survey included a question on lifetime number of PPI surgeries performed. Amongst the 468 respondents, a lifetime total of 590 procedures had been performed [Table 2].

Two hundred and seventy-three members chose the opportunity to offer anonymous feedback. There were five neutral (okay – 2, no comment – 3), eight negative (incomplete – 2, lacks clarity – 1, purpose unclear – 2, faulty design – 3), and 260 (95.2%) positive feedback comments.

On closure of the online survey, it was estimated that 142 respondents would be necessary for a randomized telephonic sampling of the remaining 1641 members. An additional 22% (to allow for those who would have already responded to the online survey) and 14% (for incorrect, unreachable, or unwilling numbers) yielded a total sample size of 220. In fact, 147 respondents were sampled telephonically.

There was no significant difference in the local availability of UDS facility between the randomized telephonic sample of nonrespondents (52.7%) and the online survey respondents (52.9%). However, telephonic respondents

Table 2: Estimation of total surgeries for postprostatectomy incontinence ever performed by full members (n=2109) of the Urological Society of India. Numbers from the random telephone sampling survey (n=147) were used to calculate projected numbers for all nonrespondents (n=1641) and then added to actual numbers from the online survey (n=468)

	Artificial urinary sphincter	Fixed sling	Adjustable sling	Self-designed synthetic	Self-designed autologous	Bulking agent	Others	Total
Online survey number (n=468)	163	95	1	60	9	161	101	590
Telephone survey number (n=147)	19	4	1	5	2	9	19	59
Proportion	0.129252	0.027211	0.006803	0.034014	0.013605	0.061224	0.129252	0.401361
SE	0.02767	0.013419	0.00678	0.01495	0.009555	0.019774	0.02767	0.040429
95% LCI	0.075019	0.00091	-0.00649	0.004711	-0.00512	0.022468	0.075019	0.32212
95% UCI	0.183484	0.053512	0.020091	0.063316	0.032333	0.099981	0.183484	0.480601
Projected number (n=1641)	212	45	11	56	22	100	212	659
LCI	123	1	0	8	0	37	123	529
UCI	301	88	33	104	53	164	301	789
Estimated total number (n=2109)	375	140	12	116	31	109	231	718

LCI=Lower confidence interval, UCI=Upper confidence interval, SE=Standard error

were more likely to express an interest in UI (51.7% vs. 33.7%, $P = 0.0001$). A similar proportion of telephonic respondents had ever performed a PPI surgery (13.7% vs. 19.0% of online survey respondents, P value n. s.), but the lifetime number of surgeries performed was significantly lower in the telephonic survey group [Table 2].

Combining the actual data of 468 members from the online survey and projection for the remaining 1641 members from the telephonic survey, it is estimated that the total number of artificial sphincters and overall PPI surgeries ever performed by USI members is 375 and 718 [Table 2].

DISCUSSION

This is the first major attempt to ascertain the practice patterns of Indian urologists with regard to the evaluation and treatment of UI. The dual-survey design was based on the premise that (self-selected) responders to the detailed online survey were likely to differ from the (randomized) nonrespondents.

The primary goal of this survey was to collect information regarding practice patterns related to UI. This required a detailed 32-question survey. One question dealt with the actual number of surgeries for PPI ever performed. The authors felt that given the very small number of surgeries performed by an individual urologists in India, these would be a career "event" and were subject to minimal recall bias. With India at the cusp of a rapid rise in number of robot-assisted radical prostatectomies, this was a unique opportunity to examine the issue. However, as the data of nonrandom online survey could not be extrapolated to the entire USI membership, there was a need for randomized telephonic survey which included questions on PPI surgeries and other critical information (regarding UDS infrastructure and interest in incontinence management). While a standalone randomized telephonic survey might have been

ideal, it was impractical to get the entire 32-question survey on the telephone.

The 22.2% response rate to the online survey is consistent with the response rates of similar surveys conducted internationally.^[4-7] While the South Zone accounted for maximum number of responses received (171), the highest percentage response was from the North Zone. East zone members were significantly less likely to be working in a teaching hospital. There are 117 teaching hospitals (hospitals with Urology trainees) in India (MCh public 43, MCh private 35, and DNB 39).^[8] The distribution of public MCh, private MCh, and DNB teaching institutions in East (8,0,5), West (6,5,9), North (12,4,7), and South Zones (17,26,18) can possibly account for the larger proportion of respondents working at private as against public teaching hospitals from the South and West Zones.^[8]

The survey showed a widespread availability of UDS study (84% local or in-house) which is comparable to Canada (79%) and UK (100% access).^[6,9] The randomized telephonic sample showed similar high in-house availability. Availability of UDS has been shown to have a profound impact on its utilization^[9] but should no longer be a concern in making recommendations for its use in India. At most centers, doctors rather than technicians were performing UDS. While this could potentially result in better quality of testing and reporting, it may indicate a need for more centers to train UDS technicians. Currently, there no comprehensive training programs for UDS technicians in India. A similar lack of adequate training opportunities have been noted elsewhere.^[10,11]

The survey showed widespread utilisation of voiding diary in evaluation of UI, a key recommendation.^[12,13] This compares favorably with the 24% response rate in one of the surveys from Europe.^[14] However, the poor utilization of patient-reported outcome measures needs to be

addressed. Such measures are important since UI is a quality of life problem.^[12,13] An inappropriately high utilisation of diagnostic cystoscopy is also an area of concern. Cystoscopy is seldom necessary for making a diagnosis and guidelines recommend against its use.^[13] A similar pattern was noted in the USA.^[15] The survey showed a low rate of utilisation of the pad and Q-tip tests which is consistent with guidelines.^[13] Visual inspection of urethral hypermobility has been shown to be almost as accurate and far more comfortable for the patient.^[16]

An evaluation of PVR is recommended in patients with a history of voiding dysfunction or voiding difficulty only.^[12,13] However, 85.8% of all the respondents chose to measure PVR in all patients. This is likely a reflection of the favourable economics and logistics of obtaining an ultrasonography study in India. The test is often available without need for scheduling at a cost of Rs. 350–1000 (5–15\$ US) and is performed using a regular machine rather than a bladder scanner. This also implies routine assessment of upper tract morphology by a trained radiologist notwithstanding with the recommendations.^[12]

A large number of urologists chose to order UDS prior to conservative treatment of urgency UI, a practice that is not in line with usual recommendations of using drug therapy based on clinical judgment.^[17] In contrast, a survey in Europe showed that 68.8% urologists chose to perform UDS only when patients were refractory to the drug therapy.^[14]

37% chose to perform UDS prior to all surgical interventions including uncomplicated SUI. This is similar to the 47% response of surgeons in Canada^[9] and 51% of IUGA members^[18] but lower than the 89% in the UK.^[6] Most members would evaluate for ISD and UDS findings would impact surgical decisions for three-quarters of respondents. Guidelines recommend evaluating for urethral function in the event a UDS is performed and have been noted to impact surgical decisions.^[17]

Indian urologists were less likely than their European counterparts to offer bladder training or physiotherapy.^[14] Socioeconomic status of the patient has been considered a barrier to conservative treatment and might have played a role.^[14] Doctors most often taught conservative treatment themselves possibly reflecting a lack of trained ancillary staff.

Solifenacin was the most commonly prescribed antimuscarinic, but the drugs darifenacin, trospium, and mirabegron were common choices in the elderly, in line with the guideline recommendations.^[12,19,20] This survey was carried out just 2 months following the launch of mirabegron in India, and it is conceivable that its usage patterns could evolve.

Utilization of salvage therapies for urgency UI have been noted to be very low,^[21] and in this context, it is encouraging that 51.5% of USI members had experience with botulinum toxin injections. However, familiarity with sacral neuromodulation was low.

Transobturator tape was the preferred surgical option for SUI for 71.6% of the respondents. In a global survey, 49.7% of respondents chose this surgery as their default option^[5] regardless of other factors.^[18] Nationwide hospital statistics from England showed that tapes constituted about 98% of all SUI surgeries in 2012 with transobturator tapes being 1.7 times more common than the retropubic ones.^[22]

Overall, only a few artificial urinary sphincter placement and other PPI surgeries have been performed by the USI members. Elsewhere in Asia, in Japan, 100 AUS have been placed over 14 years nationwide.^[23] It has been estimated that the requirement for AUS is 1–3% of the total number of radical prostatectomies performed,^[24–26] with an increasing trend.^[26,27] In England, the total number of AUS performed increased by five times from 53 in 2000 to 261 in 2012.^[22] Given the rapidly rising numbers of radical prostatectomy in India, the number of PPI surgeries are likely to rise, and as elsewhere, academically affiliated urologists are most likely to meet this challenge.^[27]

There are limitations to this survey. The online survey was taken by self-selection and hence may be skewed. The randomized telephonic survey of the nonrespondents allowed us to adjust for this but only to the extent of the questions covered. The survey is subject to recall bias and some respondents might have chosen to misstate their clinical practices. While IP addresses were tracked and multiple responses were blocked, some respondents might still have been able to respond more than once.

CONCLUSION

This survey is the first attempt to conduct a national survey of USI members with regard to their practice patterns in the evaluation and treatment of UI. The dual-survey adopted is a significant improvement over similar surveys performed by the other societies. This survey has shown that almost all Indian urologists treat UI with significant deviations from existing guidelines. This suggests that a USI guideline on the subject could potentially be of critical importance to the membership. The overwhelmingly positive feedback bodes well for future surveys for the membership.

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APPENDIX 1: THE SURVEY QUESTIONS

Online Survey questions SurveyMonkey®

1. Which State or Union Territory do you primarily practice in?
2. Which of the following best describes your specialty? A. Urologist B. Urogynecologist C. Gynecologist D. Other
3. Which of the following best describes the *main hospital* that you are associated with? A. Public nonteaching hospital (No Urology trainees) B. Private teaching hospital (Urology trainees) C. Public teaching hospital (Urology trainees) D. Private nonteaching hospital (No Urology trainees) E. Only outpatient or daycare urology
4. How many years have you been in practice? A. <5 years B. 5–10 years C. 10–15 years D. >15 years
5. Is UI an area of special focus for you? A. Yes B. No but I treat UI C. I don't treat UI (Go to Q32) D. I don't treat Stress UI. (Skip 11-12, 22-31)
6. Postvoid residual urine A. Check in all patients with UI B. Check in patients with suspected voiding dysfunction only C. Do not check it in patients with UI
7. Which of the following do you use as a matter of routine (in over three-fourth of patients) for women with UI. Please mark a TICK against ALL that are applicable. Voiding diary, symptom score, QoL, Pad test, Q-tip test, stress test, uroflow, cystoscopy
8. With regard to UDS which of the following is applicable to you? A. Available in my institution B. Use a facility in the city C. Use a facility outside the city (Skip Q9)
9. Who performs the UDS study? (Assumed that consultants supervise all tests) A. Consultant (fully qualified in specialty) B. Resident-in-training C. UDS technician D. Continence Nurse
10. Which of the following best describes your application of UDS in patients with Urgency UI A. Use it in all patients B. Use it in patients unresponsive to initial step 1 therapy (lifestyle, fluid management, physiotherapy) C. Use it before botulinum toxin injection or sacral neuromodulation in patients with refractory OAB D. Do not use UDS for patients with Urgency UI. Use it only if considering an alternate diagnosis such as voiding dysfunction, neurogenic bladder, etc.
11. Which of the following best describes your application of UDS in patients with stress UI A. Use it in all patients B. Use it prior to all patients undergoing surgery C. Use it for select patients only (complicated Stress UI) D. Do not use UDS for patients with Stress UI. Use it only if considering an alternate diagnosis such as voiding dysfunction, neurogenic bladder, etc.
12. Which of the following best describes your practice with regard to Intrinsic sphincter deficiency in stress UI patients (In case you perform more than one, please mark ONLY THE ONE you most rely on): A. Use abdominal leak point pressure B. Use maximal urethral closure pressure C. Use clinical empty bladder supine stress test D. Do not make a diagnosis of ISD
13. With regard to physiotherapy in patients with urinary incontinence which of the following best describes your practice A. Offer it in all patients with UI B. Offer it to all patients with stress UI and mixed UI C. Offer it to select patients D. Do not use physiotherapy (Skip Q14)
14. Physiotherapy taught by A. Taught by a trained pelvic floor physiotherapist B. Taught by a continence nurse or the UDS technician C. Taught by a treating doctor or resident in training
15. With regard to bladder training in patients with urinary incontinence which of the following best describes your practice A. Offer it to all patients with UI B. Offer it to all patients with urgency UI and mixed UI C. Offer it to select patients only D. Do not use bladder training (Skip Q16)
16. Bladder training taught by A. Taught by a trained pelvic floor physiotherapist B. Taught by a continence nurse or the UDS technician C. Taught by a treating doctor or resident in training
17. Which ONE of the following is your usual first choice for drug therapy for OAB? A. Oxybutynin B. Darifenacin C. Tolterodine D. Trospium E. Solifenacin F. Mirabegron
18. Which ONE of the following is your usual first choice for drug therapy for OAB in the elderly? A. Oxybutynin B. Darifenacin C. Tolterodine D. Trospium E. Solifenacin F. Mirabegron
19. Please TICK those that you have ever performed? A. Botulinum toxin injection B. Sacral neuromodulation C. Percutaneous tibial nerve stimulation
20. What is your preferred treatment option for refractory OAB assuming that usual reasons for failure to respond have been excluded (you can still choose your option for referral in case you are not preferred performing this yourself) A. Botulinum toxin B. Sacral neuromodulation C. Percutaneous tibial nerve stimulation
21. What is your preferred starting dose of botulinum toxin (you can choose your preferred option for referral in case you refer these patients) A. Less than 100 U B. 100 U C. 200 U

22. Does the UDS influence your choice of Stress UI surgery A. No the results of UDS have no impact on my surgical treatment decisions B. Offer specific forms of surgery for ISD, concomitant detrusor overactivity, or in patients with an element of voiding phase abnormality
23. Tick all those that you have ever performed A. Retropubic tension-free vaginal tape TVT B. Transobturator tape (any form) C. Mini (single incision) sling D. Autologous pubovaginal sling E. Burch colposuspension F. Bulking agents
24. Which one do you use as a default procedure for uncomplicated SUI? A. Retropubic tension-free vaginal tape TVT B. Transobturator tape (any form) C. Mini (single incision) sling D. Autologous pubovaginal sling E. Burch colposuspension F. Bulking agents
25. Do you perform in an intraoperative stress test? A. Yes B. No
26. Regarding cystoscopy during midurethral sling surgery A. Perform for all patients regardless of approach B. Do not perform routinely for transobturator tape unless technical difficulty
27. With regard to prolapse A. Operate it yourself B. Call in a gynecologist or urogynecologist to operate
28. Regarding pelvic organ prolapse and occult stress UI (assuming patient is equally comfortable with either decision or “leaves” it to you) A. Prefer to operate occult SUI at the time of POP surgery B. Prefer to defer SUI surgery to a later date following POP surgery
29. Do you use Duloxetine for long-term management of stress UI or mixed UI? A. Yes B. No
30. Have you ever operated a patient for postprostatectomy incontinence? A. Yes B. No (Skip Q 31)
31. How many male incontinence procedures have you ever performed? Mention a number against each of these A. Artificial urinary sphincter B. Fixed male sling C. Adjustable male sling D. Self-designed synthetic sling E. Self-designed autologous sling F. Bulking agent G. Others
32. Your feedback regarding this survey!

Telephonic Survey

1. Is UI an area of special focus for you? A. Yes B. No but I treat UI C. I don't treat UI D. I don't treat Stress UI.
2. With regard to UDS which of the following is applicable to you? A. Available in my institution B. Use a facility in the city C. Use a facility outside the city
3. Have you ever operated a patient for postprostatectomy incontinence? A. Yes B. No
4. How many male incontinence procedures have you ever performed? Mention a number against each of these A. Artificial urinary sphincter B. Fixed male sling C. Adjustable male sling D. Self-designed synthetic sling E. Self-designed autologous sling F. Bulking agent G. Others