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CONGRESSO NAZIONALE SIUD 2022
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1 - Home pelvic floor exercises in children with non-neurogenic LUTS is fitball an alternative to classic exercises

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Introduction and aim of the study: Biofeedback with home pelvic floor (PF) exercises are recommended as non-pharmacologic treatment for non-neurogenic LUTS in children. The aim of the study was to investigate efficacy of standard home exercises versus exercises using fitball too.
Materials and methods: From April to December 2021 a randomized control study with 2 arms has been performed. After a clinical and instrumental evaluation of each patient, standard urotherapy and pelvic floor animated biofeedback therapy (PFABT) were proposed in all children affected by non-neurogenic LUTS. Pelvic floor program included 4 session, 1/20 days. Children trained with PF contraction and relaxation exercises, received prescription to repeat session at home, moreover exercises using Fitball has been proposed. Declaration of Helsinki was followed. After the first session, children were assigned to group A (standard) and group B (fitball). Continence rate, PF muscles activity, adherence and satisfaction were evaluated by means of bladder diary (BD), external pubococcygeus test (PCT) and Likert-type psychometric scale (from 1=very unsatisfied to 5=very satisfied) respectively.
Results: Twenty children (average age: 8 years, sex: 19 female - 1 male) affected by diurnal and nocturnal urinary incontinence, giggle incontinence and urinary retention were enrolled: 10 in group A and 10 in B. At 4th control urinary incontinence was reduced by 30% in the two group. PCT increased by 61,76% (+ 2,1 points) in A, and 53,84% (+1,4 points) in B, and there was an improvement of all PCT components (phasic, tonic and endurance) in both groups. Adherence at home was 80% in group A and 50% in group B. Satisfaction with the treatment (4 or 5 points at Likert-type psychometric scale) was 90% in both groups. 4 patients of group A and all of group B decided to maintain home exercises including fitball.
Interpretation of results: Our study shows that efficacy of home exercises, with or without fitball, is comparable. The improvement of PCT highlights how training pelvic floor muscles is important. The satisfaction with the treatment was high, regardless results obtained, because parents and children have learned a new, interesting and stimulating way to manage urinary problems. Literature underlines the importance of home exercises to improve and maintain PFABT's results. The opportunity to perform these exercises in a different way it is an important finding for pediatric population. The choice to change methods and use fitball for the children of group A evidences that fitball is most stimulating over time.
Conclusions: Efficacy of home exercises, with or without fitball, is comparable. PF home exercises with fitball seems to be preferred by children for a long-term treatment.

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2 - Feasibility and efficacy of Functional Electrical Stimulation (FES) in children with non-neurogenic lower urinary tract dysfunction

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Introduction and aim of the study: Functional Electrical Stimulation (FES) in association with biofeedback (BFB) is recommended in adults with pelvic floor muscles dysfunction. Few experiences have been published on FES in children non-neurogenic lower urinary tract dysfunction (NN-LUTD). Aim of our study is to evaluate feasibility and efficacy of few minutes FES in association with BFB in children with NN-LUTD.
Materials and methods: From June 2021 to January 2022, children with NN-LUTD were enrolled. Each patient performed 4 sessions (1/20 days) which were structured in 6 minutes pelvic-floor animated BFB followed by 3 minutes of FES (35 Hz, 300 μs). External sensors at the side of pubococcygeus muscle were used both for BFB and for FES. To evaluate treatment efficacy, bladder diary, uroflowmetry and pubococcygeus test (PCT) were performed and compared before and after treatment.
Results: Ten girls (average age:10 ± 3 years) with dysfunctional voiding (n=9 pts) and giggle incontinence (n=1 pt) were enrolled. All patients accepted FES well and complete 4 sessions: they did not shown discomfort or pain upon stimulation. Data of bladder diary, uroflowmetry and PCT before and after treatment are shown in table. At I session, 3/10 patients used three accessories muscle groups (gluteus, abdominals and abductors) during pubococcygeus recruitment, 4/10 patients used two and 3/10 patients used only one of these. At IV session, 1/10 patient used three accessories muscle groups, 3/10 patients used two, 5/10 patient used one and 1 patient did not use accessories muscles.
Interpretation of results: Preliminary results seem to confirm feasibility and efficacy of FES combined with BFB. Children improved urinary habits, bladder emptying and pelvic floor muscles' function. FES seemed to facilitate identification and correct use of pubococcygeus and accessories muscles, as shown by reduced number of accessories muscles employed during training. Better selectivity of pubococcygeus respect to antagonist muscles might explains improvement of bladder emptying.

Conclusions: In children FES is feasible. FES in association with BFB seems to be effective to treat non-neurogenic LUTD. However, further studies are needed to confirm these results, evaluating a more large series and comparing results of FES alone with those of BFB alone.

	Before treatment	After treatment	Differences (%)
Mean micturition/24 hrs	6,6	5,8	−12%
Average Vvoid (ml)	285,40	199,76	−30%
PVR (ml)	42,20	28,30	−1%
"Phasic" PCT (mean points)	1,6	2,3	+44%
"Tonic" PCT (mean points)	0,9	1,2	+33%
"Endurance" PCT (mean points)	0,4	0,9	+125%
PCT Total (mean points)	3	4,4	+47%
3 accessories muscle groups (n°. of patients)	3	1	−67%
2 accessories muscle groups (n°. of patients)	4	3	−25%
1 accessory muscle group (n°. of patients)	3	5	+67%
N°. accessories muscle groups (n°. of patients)	0	1	Not calculated

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3 - Prostatic urethral lift - A single center case series

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Introduction: A variety of minimally invasive treatments are available as an alternative to transurethral resection of the prostate for the management of lower urinary tract symptoms (LUTS) in men with benign prostatic hyperplasia (BPH). The goals of these new approaches are to effectively treat urinary symptoms while minimizing side effects. In our center we are evaluating the insertion of prostatic urethral lifting implants as an ejaculation sparing minimally invasive approach. The purpose of this study is to report our single center experience of prostatic urethral lift (PUL) focusing on safety and functional results.
Materials and methods: We evaluated 79 patients diagnosed with LUTS due to BPH who underwent the PUL procedure from September 2014 to December 2021 at our Institution. We collected pre-operative patients' characteristics and intra-operative and 1-year post operative results by means of the international Prostate Symptoms Score (IPSS), Quality of life index (Qol), Uroflowmetry, and Male Sexual Health Questionnaire (MSHQ-EjD) for ejaculatory function.
Results: All procedures were completed successfully without serious adverse effects. Median hospital stay was 1 day, and postoperative complications rate was 29,5%, all classified as Clavien I (mild hematuria). Readmission rate within 7 days was 6,3%. At a median follow-up of 24 months the retreatment rate was 12,6%. The average IPSS and QoL improvement at 1 month and 1 year was respectively 10,5 vs 13 points and 2.27 vs 2,65, as shown in Fig. 1. At MSHQ-EjD, sexually active patients did not report any issue with sexual functioning.

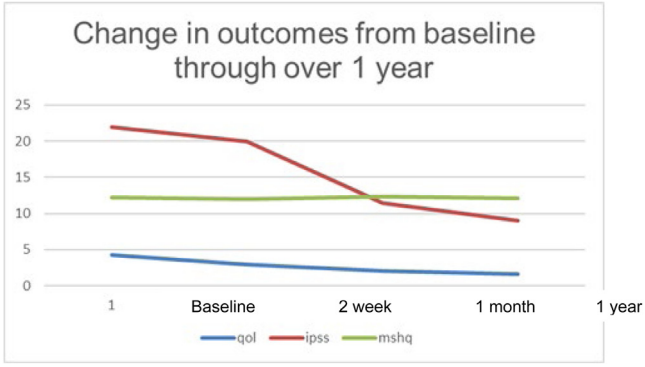

Fig. 1. IPSS: International Prostate Symptom Score; QoL: Quality of Life; MSHQ-EjD: Male Sexual Health Questionnaire for ejaculatory function.

Interpretation of results: PUL has a minimal recovery time, and, although the number of perioperative complications recorded is considerable, all of them were low grade. Readmission and reintervention rates are in line with the available literature. The procedure, being minimally invasive, is well tolerated under local anesthesia. Our data show that this treatment modality provides a significant improvement in symptoms and quality of life parameters without compromising sexual function.
Conclusions: PUL represents a valid therapeutic alternative for obstructed patients motivated to preserve ejaculatory function. Moreover, the procedure is fast, safe and offers the possibility to treat patients without anesthesiologic support (see Table 1).

Table 1
Patients' baseline and operation characteristics.

Patient characteristics	
Age (years)[f]	67 (IQR: 61–75)

(*continued on next page*)

Table 1 (*continued*).

Charlson Comorbidity Index[f]	2.94 (IQR: 2–4)
Prostate volume[f]	38 (IQR: 26–52)
PSA (ng/mL)[f]	1.69 (IQR: 0.8–2.88)
Qmax[f]	10.3 (IQR: 7.75–14.1)
Number of lifts[f]	3 (min 2–max 13)
Operative time (min)[f]	12 (IQR: 10–17)
Intraoperative complications[†]	29 (36.7%)
Day of stay[f]	1 (min 1–max 3)
Readmission Rate[†]	5 (6.32%)

f = median; † = n (%).

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4 - Comparing urodynamic and functional profiles of totally robotic intracorporeal and open Padua ileal neobladder: Which one is better? Results from a single-centre prospective series

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Introduction and aim of the study: In recent years, robot-assisted radical cystectomy with intracorporeal urinary diversion has gained in popularity and the number of procedures performed has increased significantly. However, there is a paucity of data comparing the urodynamic profile of totally intracorporeal neobladders (iONB) with their open standard counterpart. The aim of this study was to compare the functional and urodynamic outcomes of open (oPIB) and totally intracorporal robotic Padua ileal neobladder (rPIB) reconstructions performed at a single high-volume centre.

Materials and methods: Between June 2017 and December 2020 our prospective, board-approved, radical cystectomy dataset was queried for "urodynamic evaluation", "open orthotopic ileal neobladder" (oPIB; n=19), "robotic intracorporeal orthotopic neobladder" (rPIB; n=24). All surgeries were done in a referral centre and by an expert surgeon. Urodynamic evaluations were performed in high volume centres. Complete urodynamic profile including uroflowmetry, cystometry, compliance, presence of residual peristaltic activity, abdominal (ALPP) and Valsalva leak point pressures (VLPP) as functional outcomes assessed by daytime and night-time continence (defined as the use of 0-1 pad) and stress incontinence rates were compared between groups. Descriptive analyses were used. Frequencies and proportions were reported for categorical variables while medians and interquartile ranges (IQRs) were reported for continuously coded variables. Differences between continuous variables were assessed with the t test, while Pearson's $\chi 2$ test was used for categorical data. For all analyses, a two-sided $p<0.05$ was considered significant.

Results: Overall, at a median follow-up of 15 months (IQR 9-26) 43 patients (19 oPIB and 24 rPIB) underwent a complete urodynamic evaluation and a full functional assessment. The two groups were homogeneous for gender, age, BMI and timing of follow up. In terms of urodynamic characteristics, the only significant difference was found in the rate of residual peristaltic activity of the neobladder: 70.8% in rPIB vs. 36.8% in the oPIB group (p=0.02). The amplitude of the contractions was not significantly different between the two groups (p=0.89). Day- and night-time continence rates were 94.1% and 70.6% in the oPBI cohort and 75% and 52.4% in the rPIB serie, respectively, but the differences were not significant (each $p > 0.1$). Stress urinary incontinence rates were comparable between groups (p=0.235).

Interpretation of results: Comparing rPIB and oPIB, the only significant difference was found for rate of residual peristaltic activity of the neobladder, observed in 17 (70.8%) rPIB vs 7 (36.8%) oPIB: this could be due to the folding technique and the suturing used during intracorporeal surgery. However, the amplitude of the contractions, when present, was similar in both cohort, and this did not seem to have a significant impact on the day- and night-time continence: even though the rates seemed slightly higher in the oPIB cohort, they were not statistically significant. Interestingly, the median time to night-time continence was longer in the rPIB group (6 months vs. 3 months for oPIB), but this result also was found not significant at the statistical analysis.

Conclusions: Compared to the open technique, rPIB showed adequate cystometric capacity and compliance at an early follow-up despite an increased rate of residual peristaltic activity. In terms of continence rates no significant differences were found in both cohorts. Open and robotic techniques for neobladder showed satisfying and comparable functional outcomes, and our data support intracorporeal neobladder reconstruction as a valid option, with urodynamic and functional profiles similar to the ones obtained with the open technique.

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5 - Predictive factors of urinary continence for ileal orthotopic neobladders: Results from a multicentric study

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Introduction and aim of the study: Functional results of orthotopic ileal neobladders (iONs) vary depending on the surgical technique performed. Standardization in reporting continence outcomes is lacking, as well as measurements with urodynamic assessment. The aim of this pooled series was to identify predictors of daytime and night-time urinary continence for robotic and open iONs performed at two high-volume centres.

Materials and methods: Between June 2017 and December 2020 two prospective, board-approved, radical cystectomy dataset were matched and queried for "iON" and "urodynamic evaluation" (n=66). Baseline data and complete urodynamic profile including uroflowmetry, cystometry, compliance, presence of residual

peristaltic activity (RPA), abdominal leak point pressures (ALPP) as functional outcomes assessed by daytime and night-time continence (defined as the use of 0–1 pad) were reported. Descriptive analyses were used. Frequencies and proportions were reported for categorical variables while medians and interquartile ranges (IQRs) were reported for continuously coded variables. Daytime and night-time urinary incontinence probabilities were computed by Kaplan–Meier curves and compared for baseline and urodynamic variables with the log-rank test, respectively. Cox regression analyses were used to identify predictors of daytime and nightime urinary continence. For all analyses, a two-sided $p<0.05$ was considered significant.

Results: Overall, at a median follow-up of 11 months (IQR 7–19.5) 66 patients achieved a complete urodynamic evaluation. On Kaplan–Meier analysis, male patients achieved significantly higher rates of daytime urinary continence (p=0.03) while the presence of neobladder RPA and a maximal bladder pressure (maxNP) > 50 cm H20 were associated to significantly higher probabilities of night-time urinary incontinence (both $p<0.05$). At univariable Cox regression analysis male gender (HR 0.47, 95% CI 0.23–0.95; p=0.03) was predictor of daytime urinary continence. At multivariable Cox regression analysis, neobladder RPA, (HR 0.37, 95% CI 0.14–0.99; p=0.049) and maxNP >50 cm H20 (HR 8.22, 95% CI 2–33.7; p=0.003) were all independent predictors of night-time urinary incontinence.

Interpretation of results: Basing on our results, no urodynamic factor was found to be predictive of urinary continence whilst male gender was associated with significantly higher day-time continence rates; we observed that also the onset of continence happened earlier than in the female population. On the other hand, the presence of RPA and maxNP >50 cm H2O had a strong impact on nocturnal continence and were independent predictors of night-time incontinence in all the iON series.

Conclusions: Male gender was the only predictive factor of day-time continence; this may be due to anatomical reasons. On the other hands, RPA and maxNP >50 cm H20 were independent predictors of nocturnal urinary incontinence in both open and robotic iON. Medical treatment of increased pouch activity secondary to involuntary bowel peristalsis may enhance the night-time continence rate.

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6 - Acceleration parameters at uroflowmetry to predict Schäfer nomogram results

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Introduction and aim of the study: Among patients (pts) with small-median Benign Prostate Enlargement (BPE) and moderate LUTS, who do not respond to medical treatment, a Urodynamic Study (US) is usually performed to confirm Bladder Outlet Obstruction (BOO) and to evaluate others associated or primarily involved conditions (ie. detrusor underactivity, DU). Our study aim is to assess the ability of ‘‘acceleration parameters’’ (APs) obtained from uroflowmetry (UF) to predict the findings of US.

Materials and methods: Retrospective data from 54 male pts who performed US to poor response to medical treatment (alpha-blocker) for moderate LUTS between 2017–2020 in our centre. Age, prostate volume measured by TRUS, voided volume (Vvoid) and post-voiding residue (PRV) were analysed. From UFs we collected several ‘‘APs’’ (see Table 1). Based on pressure-flow studies we considered pts ‘‘obstructed’’ (class III, IV, V, VI at Schäfer’s nomogram), ‘‘unobstructed’’ (class 0, I, II), ‘‘undercontractile’’ (grade W+, W-, VW) and ‘‘normocontractile’’ (grade ST, N+, N). Statistical analysis was performed using logistic regression.

Results: Mean age and prostate volume were 65.1 years and 64.4 cc, respectively. Mean Vvoid resulted 187 ml and mean RPM was 35 ml. 38 (70.3%) pts resulted unobstructed and 16 (29.7%) obstructed at pressure-flow studies. 32 (59.3%) pts were normocontractile and 22 (40.7%) undercontractile. Uni- and multivariate analyses were showed in Table 1.

Table 1

Variable	Obstructed (Schäfer nomogram: class III, IV, V, VI)			
	Univariate		Multivariate	
	P value	OR (95% CI)	P value	OR (95% CI)
cQ max (ml/s)	0,32	0,95 (0.87 – 1.04)	**0.008**	1.6 (1.13 – 2.29)
Time to cQ max (ml/s)	0.22	1.05 (0.96 – 1.15)	**0.004**	0.17 (0.05 – 0.56)
Mean acceleration to cQ max (ml/s^{-2})	0.65	0.97 (0.83 – 1.12)	0.53	1.39 (0.49 – 3.9)
Last acceleration to cQ max (ml/s^{-2})	0.23	0.90 (0.76 – 1.06)	**0.05**	0.39 (0.16 – 1.00)
Index of acceleration (s^2)	0.07	1.00 (1.00 – 1.01)	**0.01**	1.06 (1.01 – 1.11)
Variable	Undercontractile (Schäfer nomogram: grade W+, W-, VW)			
	Univariate		Multivariate	
	P value	OR (95% CI)	P value	OR (95% CI)
cQ max (ml/s)	0.06	0.91 (0.82 – 1.00)	0.49	0.94 (0.80 – 1.11)
Time to cQ max (ml/s)	0.91	1.00 (0.92 – 1.09)	0.26	0.80 (0.55 – 1.17)
Mean acceleration to cQ max (ml/s^{-2})	0.47	0.95 (0.82- 1.09)	0.72	0.94 (0.70 – 1.23)
Last acceleration to cQ max (ml/s^{-2})	0.66	0.97 (0.88 – 1.08)	0.80	1.02 (0.86 – 1.20)
Index of acceleration (s^2)	0.36	1.00 (0.99 – 1.00)	0.28	1.00 (0.99 – 1.01)

cQ max (maximum flow after artefact correction, ml/s)
Time to Q max (time between start of flow and cQmax, s)
Mean acceleration to cQ max (Q max/Time to Q max, ml/s^{-2})
Last acceleration at Q max (acceleration preceding cQmax after the last deceleration, ml/s^{-2})
Acceleration index (voided volume/mean acceleration at cQ max, s2)

Interpretation of results: BOO and DU reduced acceleration and maximal urine flow rate although pts could use some compensation mechanisms, like the abdominal pressure, to overcome these pathological condition, resulting in a paradoxical increase in flow acceleration and in Qmax (Fig. 1). Thus, neither Q max nor APs discriminate between BOO and DU but they predict pts with BOO (class III, IV, V, VI) vs pts ‘‘unobstructed’’ when simultaneously assessed (higher cQmax, shorter Time to cQmax, reduced Last acceleration at Q max and higher Acceleration index). This information, independently if DU is present or not, can be crucial for management of their LUTS (ie. improving anti-BPH therapy, indication to surgery).

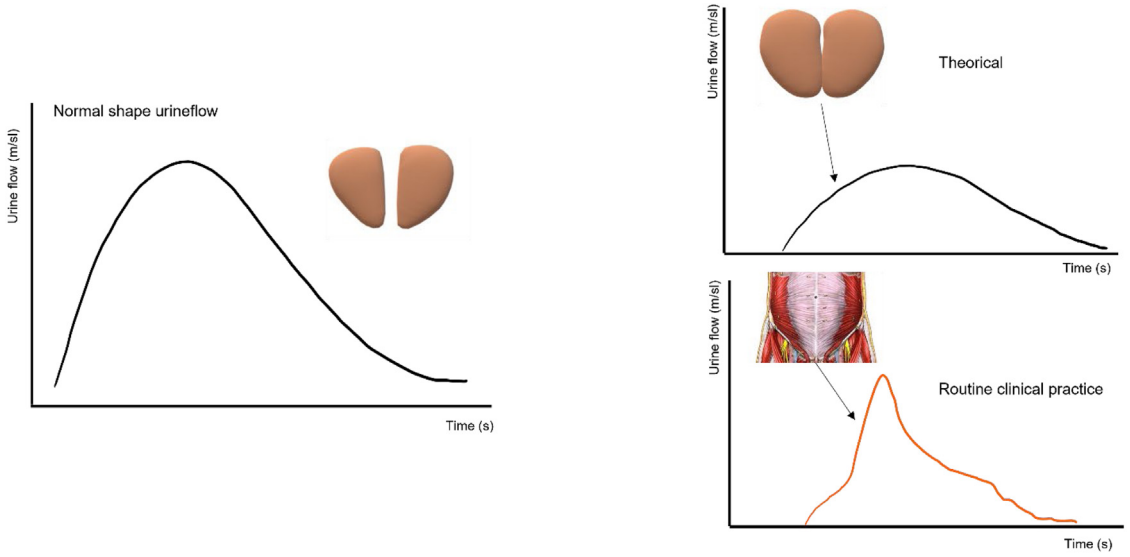

Fig. 1.

Conclusions In pts with small-median BPE and moderate LUTS "acceleration parameters" obtained from uroflowmetry predict pts obstructed according to Schäfer's nomogram. However, a urodynamic study is required to discriminate BOO from DU.

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7 - Preliminary results of transperineal interstitial laser ablation for carefully selected patients with BPH: Is it a safe and feasible outpatient procedure?

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Introduction and aim of the study: Lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH) can be bothersome and negatively impact on a men's quality of life (QoL). While transurethral resection of the prostate has played a pivotal role on BPH/LUTS treatment for years, there now exist several minimally invasive surgical techniques (MISTs), whose effectiveness seems to be supported by evidence. In particular, among these, a prominent role is covered by the transperineal interstitial laser ablation (TPLA) of the prostatic adenoma. We aimed to assess perioperative and functional outcomes of patient treated with TPLA for BPH.

Materials and methods: We prospectively collected data from patients with moderate LUTS due to BPH treated with TPLA at our center between April 2021 and September 2021, with prostate volume < 100 ml. All patients underwent outpatient procedure with local anesthesia (superficial skin and periprostatic anesthesia with lidocaine 2%). The International Prostate Symptom Score (IPSS), the International Index of Erectile Function (IIEF-15), Male Sexual Health Questionnaire-Ejaculatory Dysfunction Short Form (MSHQ-*EjD SF*), non-invasive urodynamics data (Qmax, PVR), disease management (catheterization, medications, PSA) data were collected pre- and postoperatively at 1 and 3 months for descriptive analyses.

Results: 30 patients have been included. Mean prostate volume was 56 ± 22 ml; 3 (10%) patients had indwelling catheter before TPLA. Mean preoperative IPSS, IIEF-15 and MSHQ-EjD SF were 24.2 ± 7.3, 15.4 ± 7.9 and 6.8 ± 4.3 respectively; mean operative time was 36 ± 8.9 min: 29 patients were discharged after 8 h hospital stay while only 1 patient required an additional hospitalization day for post-procedural pelvic discomfort requiring analgesic support. Mean catheterization time was 7.8 ± 2.3 days. Mean IPSS, IIEF-15 and MSHQ-EjD SF were 17.5 ± 6.9, 15.8 ± 7.7, 7.9 ± 4.8 and 14.3 ± 4.9, 19.8 ± 7.5 and 9.9 ± 3.8 at 1- and 3-months follow-up, respectively. Qmax was 10.3 ± 2.5, 12.7 ± 7.7 and 14.3 ± 5.2 ml/min and PVR was 110.6 ± 100.2, 80.6 ± 96.8 and 46.3 ± 48.5 ml at preoperative time and after 1 and 3 months follow up, respectively.

Interpretation of results: In our preliminary experience we confirm that TPLA is a safe and feasible procedure to be done in outpatient setting with no need for general anesthesia. An improvement in functional questionnaires as well as at postoperative uroflowmetry were reported, with an ejaculatory function preserved in all patients. Larger studies are needed to compare results of TPLA vs TURP or other MISTs.

Conclusions: In our experience TPLA seems to be a safe and feasible MISTs for BPH with efficacy in short term symptoms relief and urodynamic parameters improvement ensuring the preservation of ejaculatory function.

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8 - Prevalence and predictors of early urinary incontinence after RALP with bladder-neck and maximal urethral length preservation techniques: Are advanced reconstruction techniques really needed?

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Introduction and aim of the study: Robotic-assisted laparoscopic prostatectomy (RALP) is currently the gold standard surgical approach for localized prostate cancer. Beyond oncologic control, one of the key goals of RALP is to ensure maximal preservation of urinary continence: several additional reconstruction techniques (including the "Rocco" stitch, the "Patel" stitch, anterior suspension strategies, and advanced reconstruction of vesico-urethral support) have been proposed by different groups to improve early continence rates, but the ultimate impact of such techniques is still controversial. At our Institution (a high-volume referral Academic Centre), if oncologically safe, bladder-neck sparing and maximal urethral length preservation (+/− nerve-sparing) techniques are always carried out during RALP; yet, no further reconstruction techniques are routinely employed. The aim of the study is to evaluate the prevalence and Predictors of early urinary incontinence in a contemporary cohort of patients treated with RALP at our Institution.
Materials and methods: After Ethical Committee approvation, data from patients undergoing RALP between January 2017 and March 2021 were prospectively collected. RALP was performed by four highly experienced robotic surgeons. Urinary incontinence was defined according to the EPIC criteria as the need for more than one Pad per day at first follow up at 30-days. Univariable and multivariable logistic regression analysis assessed the potential independent predictors of early- and mid-term continence rate among routinely collected patient- and tumor-related variables.
Results: Overall, 925 patients were included. A nerve-sparing RALP was performed in 62% of cases. In our cohort, 766 (82.8%) patients were continent at the 30-day postoperative visit. At multivariable analysis, only the performance of non-nerve sparing techniques (OR: 1.57 [95% CI:1.03–2.59], p=0,035) was a significant predictor of early post-operative incontinence after RALP. At a median follow-up of 17 months (IQR 11-27), a decreasing rate of incontinent patients was recorded (5,5% vs 17,2%), suggesting a positive impact of postoperative pelvic floor muscle rehabilitation. The main limitation of our study is the lack of a comparative group of patients undergoing RALP with more advanced reconstruction techniques.
Interpretation of results: In experienced hands, RALP with bladder-neck sparing and maximal urethral length preservation techniques achieved favorable outcomes in terms of postoperative continence recovery during the early (30-d) postoperative period, with most patients reporting to be continent at a mid-term follow-up.
Conclusions: Further comparative studies are needed to assess the potential added value of more advanced reconstruction techniques for very early postoperative continence recovery after RALP.

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9 - Mid-urethral sling compared to urethral bulking in female neurogenic stress urinary incontinence

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Introduction and aim of the study: The aim of our study was to compare the efficacy and safety of mid-urethral synthetic slings (MUS) vs bulking agents (BA) in female neurogenic stress urinary incontinence (N-SUI) and to define if preoperative urodynamic parameters can predict outcomes.
Materials and methods: Data of N-SUI women treated with MUS or BA between 2007–2021 were retrospectively collected. Bladder diary and 24 h pad test were used to assess urinary incontinence. Follow up was conducted at 3 and 12 months. Dryness was the primary outcome. Secondary points of subjective and objective success were a PGI-I ≤2 and the reduction of SUI ≥50%. Any adverse event was recorded.
Baseline urodynamic parameters were included in univariate and multivariate analysis to assess predictors for cure (p ≤0.001).
Results: Fifty women with N-SUI were included. Bulkamid® was used in 28/31 (90.3%) patients submitted to BA. Of those 23/31 (74.2%) were managed by intermittent catheter (IC), while in the MUS group 17/19 (89.5%) were on IC regimen. At 3-mo follow up dryness was observed in 13/19 (68.4%) and 7/31 (22.6%) MUS and BA patients, respectively. At 1-year follow up 9/13 (69.2%) MUS patients were still dry, while none of the 7 BA was continent. Subjective benefit (PGI-I ≤2) was reported by 18/19 (94.7%) MUS and 20/31 BA (64.5%) at 3-mo. Of those, 3/18 (16.7%) and 11/20 (55%) worsened, with a PGI-I >2 at one year. MUS group showed significantly higher subjective and objective improvement compared to BA.
Urinary retention was observed in 2/8 (25%) BA patients not performing IC pre-op. Sling erosion was seen in 2/19 MUS patients. At univariate analysis early failure was significant higher in BA group compared to MUS (p=0.002). Considering urodynamic, the statistical significance of abdominal leak point pressure (ALLP) as predictor at univariate was not confirmed at multivariate analysis.
Interpretation of results: The major concern in the treatment choice for N-SUI is the severity of incontinence. Patients with N-SUI submitted to BA are less likely to achieve continence compared to MUS, also in the short term, although half of them following BA was still satisfied after 1-year. The role of urodynamic before N-SUI surgery is still unclear. Nonetheless our sample size did not allow to detect any urodynamic predictors.
Conclusions: Women with N-SUI must be aware of the short-lasting benefits after BA. Larger studies evaluating preoperative urodynamic are needed to better select patients (see Table 1 and Fig. 1).

Table 1
Multivariate analysis at 3 months.

Variable	*n*	*Cured*	*Not cured*	*p-value*
Type of intervention:	50			**0.001**
MUS		13 (68.4%)	6 (31.6%)	
BULKING		7 (22.6%)	24 (77.4%)	
Age at surgery	50	48.5 ± 16.2	54.7 ± 15.5	0.178

(*continued on next page*)

Table 1 (*continued*).

Overactive Bladder (OAB):	50			0.128
YES		9 (31.0%)	20 (69.0%)	
NO		11 (52.4%)	10 (47.6%)	
Antimuscarinic therapy for OAB:	50			0.166
YES		8 (30.8%)	18 (69.2%)	
NO		12 (50.0%)	12 (50.0%)	
ALPP [cmH2O]	39	68.7 ± 20.3	49.1 ± 24.1	0.014
Stress test:	46			0.693
POSITIVE		14 (36.8%)	24 (63.2%)	
NEGATIVE		4 (50.0%)	4 (50.0%)	
MUCP [cmH2O]	43	55.5 ± 28.3	49.4 ± 25.0	0.474

Cured = complete dryness with no residual episodes of SUI; MUS = Mid-Urethral Sling; ALPP = Abdominal Leak Point Pressure; MUCP = maximum urethral closure pressure.

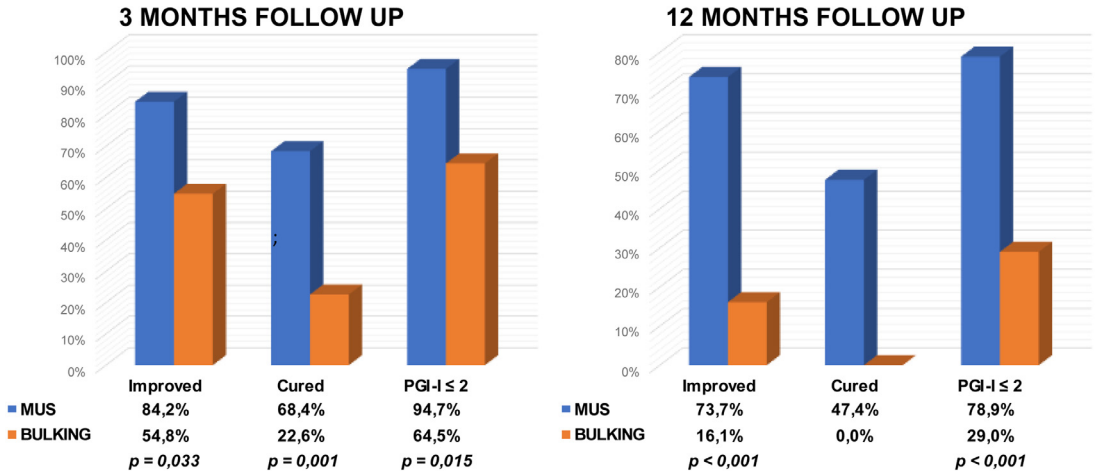

Fig. 1. Comparison between MUS and BA outcomes at 3 and 12 months.
Improved = reduction of at least 50% of number of pads/die or weight of pads at 24 h pad test compared to baseline; Cured = complete dryness with no residual episodes of SUI; PGI-I = Patient Global Impression of Improvement.

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10 - Subjective outcomes in women with genitourinary syndrome of menopause treated for overactive bladder with vaginal estriol or prasterone

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Introduction and aim of the study: Overactive bladder (OAB) syndrome affects 12–22% of population worldwide and its prevalence increases with age, reaching 46.9% in postmenopausal women. Women with genitourinary syndrome of menopause (GSM) usually complain of OAB probably because of thinning of urogenital mucosa, caused by a lack of sexual hormones. Estrogen receptors (ER) and androgen receptors (AR) have been identified in urethra, bladder and pelvic floor muscles. The first-line therapy for GSM is vaginal estrogen. Intravaginal prasterone, a synthetic form of dehydroepiandrosterone (DHEA), was recently approved for the treatment of vulvovaginal atrophy.
Aim of this study is to compare effectiveness of intravaginal estrogen and intravaginal prasterone on OAB syndrome in women affected by GSM.
Materials and methods: Sixty-four women with diagnosis of GSM and OAB syndrome have been enrolled in this randomized study. Group A (n 32) received daily vaginal prasterone 6.5 mg for 12 weeks; group B (n 32) received daily vaginal estriol 50 mcg/g for 12 weeks.
Urinary symptoms were assessed by International Consultation on Incontinence Questionnaire Overactive Bladder (ICIQ-OAB). Quality of life (QoL) was assessed by SF-12 Health Survey. Each questionnaire was administered at T0 and T1 (12 weeks).
Results: A total of 57 women completed the study. Women of Group A (n 28) had a significant improvement in ICIQ-OAB total score and in each questionnaire item (frequency, urgency, nocturia and urge incontinence) at T1. This group showed a significant improvement in both mental and physical health assessed by SF-12. No women complained side effects.
Women of Group B (n 29) had a statistically significant improvement in ICIQ-OAB total score, urgency and nocturia, but not in urinary frequency and urge incontinence at T1. About QoL, there was a significant improvement in mental health, not in physical health. Two women discontinued treatment due to burning.
Interpretation of results: Literature evidences, even if limited, suggest that both vaginal estrogens and prasterone could improve OAB symptoms in women with GSM.
Our study demonstrated a significant subjective improvement of all OAB symptoms in prasterone-treated patients, which did not occur for estriol-treated patients. ER and AR are expressed in the bladder, urethra, pelvic floor musculature and vagina, where they help to maintain muscle tone and could improve continence also

by inducing modifications in muscarinic receptors. DHEA, through an "intracrine" mechanism, is transformed in estrogens and androgens in genitourinary tissues, acting on two receptor levels (ER and AR).

Conclusions: Intravaginal prasterone and intravaginal estriol administration could be both effective treatment for OAB correlated to GSM. Empirical evidence in our study suggests that women with GSM are more satisfied with prasterone than estriol in treatment of OAB.

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11 - Botulinum toxin-A injection in chronic pelvic pain syndrome treatment: A systematic review and pooled meta-analysis

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Introduction and aim of the study: Management of patients with chronic pelvic pain syndrome (CPPS) is challenging because pain is often refractory to conventional treatments. Botulinum toxin A (BTX-A) may represent a promising therapeutic strategy for these patients. Aim of this systematic review was to investigate the role of BTX-A in CPPS treatment.

Materials and methods: We reviewed the literature for prospective studies evaluating the use of BTX-A in the treatment of CPPS. Comprehensive search in the PubMed, Scopus, Web of Science, and Cochrane Central Register of Controlled Trials databases was performed from English-language articles published between January 2000 and October 2021. The primary outcome was to evaluate pain improvement after BTX-A treatment. A pooled meta-analysis of the included studies was performed considering only patients underwent BTX-A injection and comparing pain scores at baseline and at the last available follow up.

Results: After screening 1001 records, 18 full-text manuscripts were selected. They covered several subtypes of CPPS: interstitial cystitis/bladder pain syndrome (IC/BPS), chronic prostatitis/prostate pain syndrome (CP/PPS), chronic scrotal pain, gynecological pelvic pain (GPP) and myofascial pelvic pain. For the pooled meta-analysis, we included 21 cohorts of BTX-A treated patients coming from 14 studies (447 patients). A significant reduction in pain scores, related to the scale adopted, was showed in the overall cohort ($p<0.001$, Table 1). Considering treated patients grouped according to CPPS subtypes, we found a significant improvement in pain relief in IC/PBS ($p<0.001$, 192 patients), CP/PPS ($p=0.005$, 73 patients), and GPP ($p<0.001$, 120 patients).

Table 1
Pooled meta-analysis results and Forrest plot showing the differences in pain scores between baseline and last follow up assessment for 21 included cohorts of 14 considered studies. A benefit in pain relief was showed in the overall BTX-A treated populations even if some studies did not reach a significant improvement when independently considered.

MODEL	STUDY NAME-JOURNAL-YEAR	CPPS SUBTYPE	N° OF PATIENTS	STATISTICS FOR EACH STUDY							STD DIFF IN MEANS AND 95% CI
				Std diff in means	Standard error	Variance	Lower limit	Upper limit	Z-value	p-value	-1.00 -0.50 0.00 0.50 1.00
	Manning, Int Urogynec J, 2014	IC/BPS	27	-0.416	0.201	0.040	-0.809	-0.023	-2.074	0.038	
	Jiang, Neurourol Urodyn, 2018	IC/BPS	20	-0.180	0.225	0.051	-0.622	0.261	-0.800	0.424	
	Jiang, Neurourol Urodyn, 2018	IC/BPS	19	-0.112	0.230	0.053	-0.563	0.339	-0.489	0.625	
	El-Bahnasy, IJU, 2009	IC/BPS	18	-0.760	0.268	0.072	-1.284	-0.235	-2.839	0.005	
	Lee, Pain Physician Journal, 2013	IC/BPS	10	-0.674	0.350	0.123	-1.360	0.013	-1.923	0.054	
	Lee, Pain Physician Journal, 2013	IC/BPS	15	-0.191	0.261	0.068	-0.702	0.320	-0.733	0.464	
	Lee, Pain Physician Journal, 2013	IC/BPS	15	-0.408	0.269	0.072	-0.935	0.118	-1.520	0.129	
	Pinto, Urology, 2014	IC/BPS	10	-0.913	0.376	0.142	-1.650	-0.175	-2.425	0.015	
	Pinto, Urology, 2014	IC/BPS	14	-0.723	0.300	0.090	-1.311	-0.135	-2.409	0.016	
	Kun, BJU Int, 2009	IC/BPS	15	-0.554	0.277	0.077	-1.097	-0.010	-1.997	0.046	
	Kun, BJU Int, 2009	IC/BPS	29	-0.380	0.192	0.037	-0.757	-0.003	-1.978	0.048	
	Abdel-Meguid, Can J Uro, 2018	CP/PPS	43	-0.308	0.156	0.024	-0.614	-0.002	-1.972	0.049	
	Falahaktar, BJU Int, 2015	CP/PPS	30	-0.373	0.189	0.036	-0.744	-0.003	-1.977	0.048	
	Dodray, J Urol, 2020	CSP	32	0.000	0.177	0.031	-0.346	0.346	0.000	1.000	
	Petersen, J Sex Med, 2009	GPP	32	-0.340	0.182	0.033	-0.697	0.016	-1.871	0.061	
	Nesbitt-Hawes, Toxicon, 2013	GPP	11	-0.711	0.338	0.114	-1.373	-0.050	-2.108	0.035	
	Nesbitt-Hawes, Toxicon, 2013	GPP	26	-0.487	0.207	0.043	-0.894	-0.081	-2.350	0.019	
	Diomande, Arch Gynecol Obstet, 2019	GPP	12	-0.247	0.293	0.086	-0.822	0.327	-0.844	0.399	
	Diomande, Arch Gynecol Obstet, 2019	GPP	9	-0.423	0.348	0.121	-1.105	0.259	-1.216	0.224	
	Abbott, Obstet Gynecol, 2006	GPP	30	-0.511	0.194	0.038	-0.892	-0.131	-2.633	0.008	
	Dessie, Am J Obstet Gynaecol, 2019	MPP	30	-0.245	0.185	0.034	-0.608	0.118	-1.322	0.186	
Fixed			447	-0.366	0.049	0.002	-0.463	-0.270	-7.425	0.000	

BTX-A, Botulinum Toxin A; IC/BPS, Interstitial Cystitis/Bladder Pain Syndrome; CP/PPS, Chronic Prostatitis/Prostate Pain Syndrome; CSP, Chronic Scrotal Pain; GPP, Gynecological Pelvic Pain; MPP, Myofascial Pelvic Pain.

Interpretation of results: The clinical and methodological heterogeneity of studies included makes it difficult to do an overall estimation of the effect of BTX-A on pain and other functional outcomes of various CPPS subtypes. However, considering pooled meta-analysis results, a benefit in pain relief was showed in the overall treated populations and in the overall cohort of patients with CPP due to bladder, prostate, and gynecological origin, even if some studies did not reach a significant improvement when independently considering.

Conclusions: BTX-A could be an efficacious treatment for some specific CPPS subtypes. Higher level studies are needed to assess the efficacy and safety of BTX-A, providing objective indications for its use in CPPS management.

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12 - Comparison of outcomes in women candidates for complicated or uncomplicated stress urinary incontinence surgery

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Introduction and aim of the study: To compare outcomes of women undergoing middle urethral sling (MUS) for clinical complicated stress urinary incontinence (C-SUI) or uncomplicated SUI (U-SUI).

Materials and methods: Women candidates to MUS for SUI were recruited in this prospective study from January 2015 to January 2019. According to the ICS definition of clinical C-SUI, patients were divided in two groups: C-SUI and U-SUI. Preoperatively, all women performed urodynamics, uroflowmetry (UF), post void residual urine (PVR), PVR-ratio (PVR-R=ratio between bladder volume and PVR), ICIQ-FLUTS Questionnaire. Post-operative urinary retention (POUR=occurrence of PVR ≥200 ml in ≥ 2 evaluations) was treated with a transient clear intermittent catheterization (CIC), indwelling catheter (IC) or tape incision after counselling. The follow-up was scheduled each year, and included: physical examination, UF, PVR and PVR-R, ICIQ-FLUTS. All women reached 2-years follow-up. Statistical tests were: T student, Q-square.

Results: The 2-years follow-up was completed by 97 women: 64 (66%) in C-SUI group (mean age 62.5 yrs ±9.9), 33 (36%) in U-SUI (mean age 60.3 ±11.2 yrs). POUR rate, duration of catheterization and surgical treatment for POUR (tape incision) are reported in Table 1. In Table 2 are listed functional outcomes, while in Table 3 the comparison of functional and surgical outcomes between C-SUI and U-SUI group (see Fig. 1).

Table 1. POUR rate, duration of catheterization and surgical treatment for POUR (tape incision) in C-SUI and U-SUI.

	C-SUI	U-SUI	*p*
POUR	10/64 (15.6%)	4/33 (12.1%)	0.9
CIC			
n.	4/64 (6.2%)	2/33 (6.1%)	0.6
duration (days)	83.2 ± 144.5	30 ± 0	0.03
Indwelling catheter			
n.	8/64 (12.5%)	2/33 (6.1%)	0.5
duration (days)	10.5 ± 8	6.5 ± 4.9	0.01
Tape incision			
n.	2/64 (3.1%)	1/33 (3.03%)	0.5

Table 2. Functional outcomes in complicated (C-SUI) and uncomplicated (U-SUI) stress urinary incontinence.

	C-SUI			U-SUI		
	Pre	**Post**	**p**	**Pre**	**Post**	**p**
ICIQ FLUTS	82.3 ± 24.3	21.9 ± 25.3	0.000	77.8 ± 25.3	15.5 ± 22.1	0.000
Q Max	18.3 ± 8.7	19.5 ± 6.2	0.3	21.9 ± 24.6	18 ± 7.4	0.3
PVR	21.2 ± 41.7	28.6 ± 52.1	0.3	4.3 ± 7.8	23.9 ± 34.9	0.002
PVR ratio	0.07 ± 0.1	0.08 ± 0.1	0.5	0.05 ± 0.1	0.09 ± 0.1	0.1

Table 3. Comparison of functional and surgical outcomes between C-SUI and U-SUI group.

	Preoperative			Postoperative		
	C-SUI	**U-SUI**	**p**	**C-SUI**	**U-SUI**	**p**
ICIQ FLUTS	82.3 ± 24.3	77.8 ± 25.3	0.3	21.9 ± 25.3	15.5 ± 22.1	0.2
Q Max	18.3 ± 8.7	21.9 ± 24.6	0.2	19.5 ± 6.2	18 ± 7.4	0.2
PVR	21.2 ± 41.7	4.3 ± 7.8	0.02	28.6 ± 52.1	23.9 ± 34.9	0.6
PVR ratio	0.07 ± 0.1	0.05 ± 0.1	0.3	0.08 ± 0.1	0.09 ± 0.1	0.6
OAB de novo				8/64 (12.5%)	1/33 (3%)	0.3
Recurrence IUS				3/64 (4.7%)	1/33 (3%)	0.8

Fig. 1. Table 1, Table 2, Table 3.

Interpretation of results: C-SUI was the most common type of SUI. The rate of C-SUI can relevantly change according to the criteria used, and to date no standardized parameter has been accepted. POUR was most common in C-SUI, as also the duration of postoperative catheterization. One of the ICS parameters for C-SUI is the presence of significant voiding symptoms, lacking in U-SUI. Therefore, a possible explanation of a lower rate of postoperative voiding complications in U-SUI group can be the lacking of relevant voiding symptoms in these patients. Functional results did not change significantly in each group, and only preoperative PVR was statistically different between the two groups. C-SUI group showed a higher rate of SUI recurrence and de novo OAB, but not significantly greater.

Conclusions: Our data confirmed that C-SUI is the most prevalent type of SUI in women undergoing MUS. Candidates to MUS with C-SUI should be counselled on the higher risk of transient POUR, but also that their functional and surgical outcomes are non-inferior compared to U-SUI patients.

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13 - Long-term outcomes of rectus fascia sling in women with severe stress urinary incontinence

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Introduction and aim of the study: Aim of this study was to present our long-term results on women underwent rectus fascia sling (RFS) for severe stress urinary incontinence (SUI).

Materials and methods: Data on women underwent RFS from 01/2004 to 01/2021 were recorded in a prospective database and retrospectively evaluated. Indications were SUI with: intrinsic sphincter deficiency (ISD) with or without fixed urethra, SUI recurrence after SUI surgery, neurogenic bladder. Preoperative evaluation included: history and physical examination (PE), urodynamics (UD), uroflowmetry (UF), post void residual (PVR). Follow-up was scheduled yearly with PE, UF, PVR, VAS of subjective satisfaction (VAS > 6 = satisfaction). Objective SUI cure was negative stress test. Post-operative urinary retention (POUR) was defined as the presence of PVR > 100 ml.

Results: Data on 27 women underwent RFS with a mean follow-up of 6.8 yrs (range 2–16yrs) were collected. Previous SUI surgical failure was reported by 44.4% (12/27) of females, of these 4 patients had undergone more than one treatment before RFS. Pre-operative and post-operative data on population are reported in Table 1. Mean surgical time was 125 + 11 min, no intraoperative complications occurred, mean blood loss was 57+13 ml. Objective SUI cure rate was 92.6% (25/27). Three patients with neurogenic bladder were treated with obstructive RFS with the aim of further CIC regimen. Excluding these patients, transient POUR was assessed in 8.3% (2/24) patients, while persistent POUR in 1/24 (4.2%). Unsatisfied patients were 2/27 (7.4%). In the 24 women with the goal of continence and void preservation, post-operative PVR did not change in 95.8% (23/24), with a mean PVR of 38 ml (range 0–45 ml).

Interpretation of results: RFS was a safe and effective surgical procedure in women with severe SUI. SUI cure rate lasted for a long time, and the majority of the women were satisfied of their results. RFS cured with very high rate of success, in a long follow-up, women with previous SUI treatments and females with ISD. Two unsatisfied patients needed CIC, and complained a poor preoperative counseling: one woman with an obstructive RFS due to several previous SUI surgery, and the other female with impaired detrusor contractility due to previous radiotherapy.

Conclusions: RFS should be advised as surgical option in selected cases of women with recurrent or severe SUI.

Table 1

	Pre-operative	*Post-operative*	
		Success cases	*Failure cases*
Mean age	63.2 (25-79)		
# Patients, % (n)	100% (27)	92.6% (25/27)	7.4% (2/27)
Naïve	55.6% (15/27)	93.3% (14/15)	6.7% (1/15)
Overall previous SUI	44.4% (12/27)	96.3% (26/27)	3.7% (1/27)
treatment	*66.6% (8/12)*	*100% (8/8)*	
One treatment	*33.3 (4/12)*	*75% (3/4)*	*25% (1/4)*
Multiple treatments			
Pad/die, mean (range)	4.8 (3-7)	0	2.5 (2-3)
ISD fixed urethra, % (n)	70.4% (19/27)	89.5% (17/19)	10.5% (2/19)
ISD no fixed urethra, % (n)	29.6% (8/27)	100% (8/8)	
Neurogenic bladder, % (n)	11.1% (3/27)	66.6% (2/3)	33.3% (1/3)
Preoperative SUI treatments,	59.2% (16/27)	93.7% (15/16)	6.3% (1/16)
% (n)	12.5% (2/16)	100% (2/2)	
Burch colposuspension	12.5% (2/16)	100% (2/2)	
Kelly's plication	12.5% (2/16)	50% (2/2)	
Bulking agent injection	62.5% (10/16)	93.7% (15/16)	6.3% (1/16)
MUS	*66.7% (6/9)*	*100% (6/6)*	
Trans-obturator	*33.3% (3/9)*	*66.6% (2/3)*	*33.3% (1/3)*
Retropubic	*11.1% (1/9)*	*100% (1/1)*	
Adjustable			

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14 - Comparison of sacrocolpopexy versus lateral colposuspension in pelvic organ prolapse surgery

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Introduction: Minimally invasive transperitoneal procedures of pelvic organ prolapse (POP) surgery are rising in recent years compared to traditional transvaginal techniques. Although mesh sacrocolpopexy (SC) is the most widespread and successful approach, different mesh fixation techniques have resulted similarly successful. In this regard, lateral colposuspension (LCS) seems to be a viable alternative to SC for the correction of anterior and apical vaginal POP.

The present study aimed to compare anatomical and functional outcomes of SC versus lateral LCS procedures.

Material and methods: Clinical data from two Italian centres were retrospectively analysed. Anatomical and functional outcomes of women undergone LCS (group A) versus SC (group B) were compared. Preoperatively, all patients experienced medical interview, urogenital examination, urine analysis/urineculture and invasive urodynamics.

Patients of group A were operated by laparoscopic approach, while patients of Group B were operated by laparoscopic or robot-assisted surgery.

Postoperatively, patients were seen at 1, 3 and 6 months after surgery, then yearly. Objective outcomes included clinical evaluation of POP and stress urinary incontinence (SUI) by POP-Q system and Valsalva stress test, respectively. Recurrent (persistent and/or de novo) POP was defined significant if greater than stage I. Persistent or de novo constipation and overactive bladder (OAB) were defined as bowel symptoms and urinary urgency/frequency/nocturia/dysuria after surgery.

Results: A total amount of 138 women have been studied: 42 patients in group A, and 96 in group B. No preoperative differences in terms of anterior POP ($p=0.88$) in both groups, vice versa apical prolapse ($p=0.0008$) and posterior prolapse ($p<0.0001$) were different. SC showed overall better results in terms of recurrent (de novo/persistence) POP (overall $p<0.0001$, persistence $p<0.0001$, de novo $p=0.022$) despite a greater number of constipations ($p=0.001$). However, the persistence/de novo rate of significant POP (POP-Q>1) was not different between the groups ($p=0.07$, $p=0.46$). No post-operative difference in term of de novo/recurrence symptoms OAB or SUI was found ($p=0.5$, $p=0.9$). Mean follow-ups of 10.47 ± 4.52 months (1–24) of group A versus 33.6 ± 28 months (range 3–113) of group B were statistically different ($p>0.0001$). Uni- and multi-variable cox-regression analysis and Kaplan–Meier survival showed that SC had a more durable outcome over time than lateral mesh, regardless of age, BMI, POP-Q, previous pelvic surgery, previous hysterectomy, and different follow-up numbers.

Interpretation: While literature better describes the advantage of LCS in terms of results on the apical compartment, our study showed that POP recurrence is more frequent in LCS for all types of POP, particularly at the apical level ($p=0.0003$). Although patients were different at the baseline, the uni- and multivariable Cox-regression analysis and Kaplan–Meier curves showed that SC had a longer POP recurrence-free time than CS.

Conclusions: SC shows better long-term anatomical results compared to LCS, which alternatively represents a valid strategy in case of challenging access to the retroperitoneum and difficult exposure of the sacrum, resulting in a rapid and safe technique with low risk of retroperitoneal organ injury.

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15 - Redo laparoscopic sacrocolpopexy for POP recurrence: Is it the right call?

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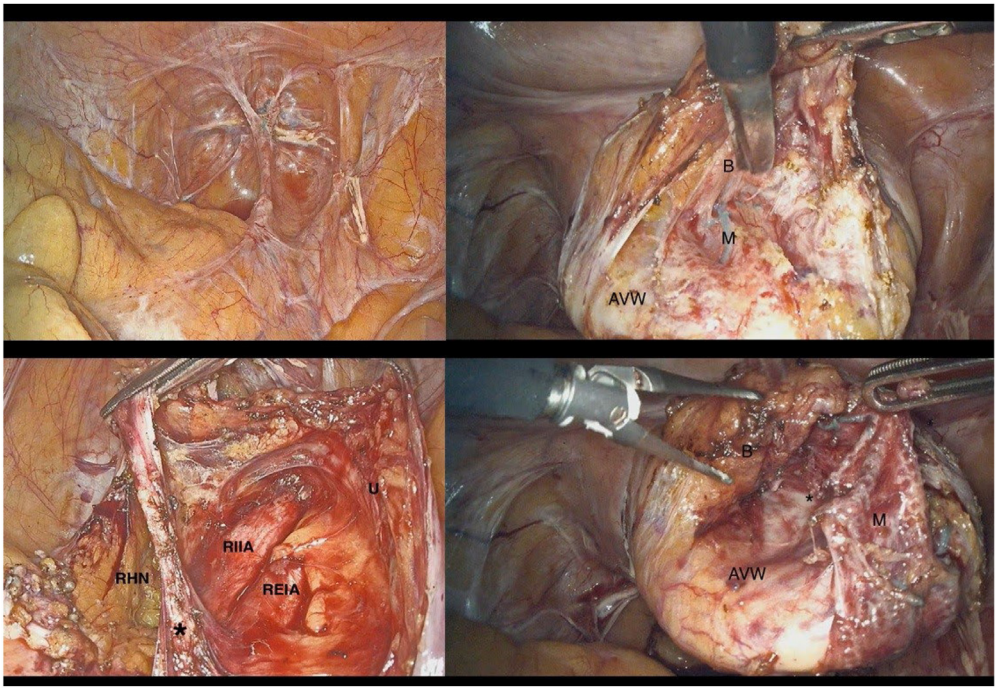
Introduction and aim of the study: As Laparoscopic Sacrocolpopexy (LSCP) has proven to be the gold-standard for treating Pelvic Organ Prolapse (POP), management of recurrence after its failure is a challenge with upcoming interest. Although its consolidated role in treating de novo prolapse, only few studies evaluated LCSP for recurrent POP after previous failed surgery in clinical settings and even less data has been published in literature regarding the reintervention with a second laparoscopic sacrocolpopexy (Redo LSCP). In patients with recurrence after surgical failure, repeat LSCP might represent a suitable surgical choice. We present a retrospective observational study analysing safety, feasibility and outcomes of redo LSCP, comparing it to a standard technique.
Materials and methods: We included patients with POP recurrence with previous abdominal, laparoscopic or robotic sacrocolpopexy surgery. We excluded women with implanted absorbable mesh or biological graft repair, or those for which LSCP was not indicated. For the secondary analysis, we selected a cohort of consecutive operated patients who underwent LSCP for the treatment of a first-time diagnosed POP, presenting the equal inclusion and exclusion criteria.
Results: All 20 patients successfully underwent a repeat LSCP. Median 24 months follow-up demonstrated a statistically significant improvement of objective and subjective outcome. No intra and postoperative complications were noted. Anatomical cure rate was 95% with only one case of mild anterior recurrence (POP Q stage 2) which was asymptomatic. Subjective cure rate (represented by the absence of bulge sensation) was 100%, with a statistically significant POP symptoms resolution and improvement of voiding and storage symptoms. The comparison with 80 patients who underwent for the first time the LSCP revealed superimposable anatomical and functional outcomes with only operative time resulting longer in the REDO LSCP group.
Interpretation of results: Our data demonstrated that REDO LSCP is a safe, feasible and effective treatment for POP recurrences after LSCP as suggested by the superimposable objective and subjective outcomes and perioperative complications with the LSCP performed for the first time in naïve patients
Conclusions: Our work suggests that REDO LSCP is effective both in objective and in subjective outcomes with minimal intra and post operative complications.



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16 - Anterior colporrhaphy and sacrospinous hysteropexy in women with pelvic organ prolapse: Urodynamic findings and functional outcomes

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Introduction and aim of the study: The aim of this study was to evaluate the functional outcomes and urodynamic findings after anterior colporraphy and sacrospinous hysteropexy in patients with stages II–IV pelvic organ prolapse (POP).

Materials and methods: Consecutive patients with symptomatic anterior/central compartment prolapse (Pelvic Organ Prolapse Quantification [POP-Q] stage ≥2) undergoing anterior colporraphy and sacrospinous hysteropexy using the Capio® (single-use) suturing devices were prospectively enrolled from our urology unit. The preoperative evaluation included history, clinical examination, and urodynamic testing. Women were followed up at 1, 3, 6, and 12 months after surgery and then annually using history, examination, and uroflowmetry. Six months after surgery, all patients performed an urodynamic re-evaluation, completed the Urogenital Distress Inventory (UDI)-6 and the Patient Global Impression of Improvement (PGI-I) questionnaire. Subjective success was considered in the case of "very much better" or "much better" answers at PGI-I (PGI-I ≤2) and a concomitant absence of bulging symptoms. Objectively success was defined as a prolapse stage<2 in all compartments.

Results: 62 women (mean age 63.9 ± 8.2 years) were included in this study. Median follow-up was 12 months (range 4–24). Q max significantly improved compared with baseline (21.1 ± 7.3 vs 12.3 ± 7.1 ml/s; p = 0.005) and the percentage of patients with PVR >30% of premicturitional volume significantly decreased (33.3% vs 11.1%; p = 0.001). At baseline, 24 (38.7%) women had typical phasic DO. Six months after surgery, DO was detected in only eleven women (17.7%) (p<0.0001), with no de novo cases. Thirteen (21%) women reported SUI preoperatively, which persisted in 5 patients (8.1%) after surgery, with no de novo cases. BOO was observed in only eight (12.9%) patients postoperatively compared with 51 (82.3%) at baseline (p < 0.0001). At last follow up visit, the UDI-6 and IIQ-7 total median scores improved significantly (p < 0.001). On assessing PGI-I, all patients reported feeling either "very much better" or "much better".

Interpretation of results: In this study, the urodynamic test confirmed objectively the improvement in or disappearance of preoperative urological dysfunctions in patients with POP treated with vaginal reconstructive surgery.

In particular the decrease in voiding and storage symptoms could be explained by the reduction of BOO in cases where DO was secondary to BOO or to anatomic changes in the bladder neck following POP correction.

Conclusions: Combination of anterior colporrhaphy and bilateral SSH in women with advanced POP provides good functional outcomes, as demonstrated by the urodynamic findings before and after surgery.

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17 - Results of an international survey on current trends on surgery for female stress urinary incontinence surgery and pelvic organ prolapse

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Introduction and aim of the study: This worldwide survey was aimed to assess the current approach on female stress urinary incontinence (SUI) surgery, on combined surgery in women with SUI and pelvic organ prolapse (POP), and on the use of prosthetic material.

Materials and methods: This was an online worldwide survey on current trends in female SUI surgery, combined surgery for associated SUI and POP, use of mesh and tape in urogynaecology (April–September 2021). Mean social media and emails were used to collect data. Demographic respondents data, use of pelvic floor muscle training in SUI patients, type of SUI surgery, performing of combined surgery for associated SUI and POP, use of prosthetic materials were investigated. In some questions more than one answer was possible.

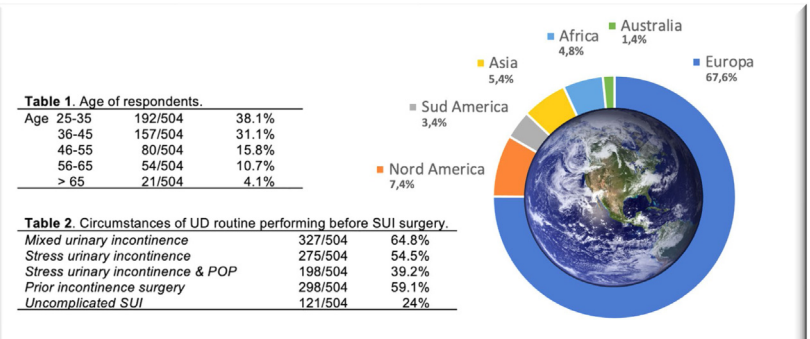

Table 1. Age of respondents.

Age	25-35	192/504	38.1%
	36-45	157/504	31.1%
	46-55	80/504	15.8%
	56-65	54/504	10.7%
	> 65	21/504	4.1%

Table 2. Circumstances of UD routine performing before SUI surgery.

Mixed urinary incontinence	327/504	64.8%
Stress urinary incontinence	275/504	54.5%
Stress urinary incontinence & POP	198/504	39.2%
Prior incontinence surgery	298/504	59.1%
Uncomplicated SUI	121/504	24%

Table 3. Components of UD included in testing.

Cystometry	424/504	84.1%
Pressure-flow study	422/504	83.7%
Valsalva Leak Point Pressure	418/504	82.9%
Urethral pressure profile	131/504	25.9%
Perineal EMG	230/504	45.6%

Table 4. Most relevant UD data.

Detrusor overactivity	402/504	79.7%
Detrusor underactivity	378/504	75%
Dyssynergia	335/504	66.5%
Straining to void	221/504	43.8%
Incomplete bladder emptying	276/504	54.8%
Valsalva Leak Point Pressure	265/504	52.6%
Urethral pressure profile	129/504	25.6%

Table 5. How often UD findings influence surgical decisions.

Never	15/504	2.9%
<20%	129/504	25.6%
21-40%	158/504	31.3%
41-60%	98/504	19.4%
61-80%	62/504	12.3%
81-100%	42/504	8.3%

Table 6. UD findings influencing surgical decision.

Detrusor overactivity	361/504	71.6%
Detrusor underactivity	324/504	64.3%
Dyssynergia	297/504	58.9%
Straining to void	210/504	41.6%
Incomplete bladder emptying	299/504	59.3%
Valsalva Leak Point Pressure	257/504	50.9%
Urethral pressure profile	110/504	21.8%

Fig. 1. Survey results, in some questions more than one answer was possible.

Results: Survey was completed by 504 respondents: urologists 83.1%, gynaecologists 16.8%. A fellowship in female urology/urogynaecology was completed by 49.8%. Age and geographical location of respondents is reported in table 1. Female urology/urogynaecology was practised<10 years by 64.3%. Routinely pelvic floor muscle training as first step for SUI was reported by 72%. Preferred surgical treatments for uncomplicated SUI are listed in table 2, while table 3 shows reasons for not performing combination surgery. Combined surgery for associated SUI and POP is performed by 54.5%. Autologous fascia sling (43.2%), bulking agents (27.6%), abdominal colposuspension (24.8%) were the substitutes in case of no MUS availability. The routine use of transvaginal mesh was reported by 44.8%, while the use only in the recurrent POP was in 13.5%.
Table 4 reports the use of MESH After April 2019 FDA ban.
Interpretation of results: MUS was still the preferred surgical procedure for uncomplicated SUI. In case of no more MUS availability a more invasive treatment such as autologous fascia sling was preferred respect to bulking agents due to the consolidated data on long term success rate. Respondents were quite divided on the use of combined surgery for associated SUI and POP. This data confirmed that this topic is still debated. Surprisingly, even after the FDA ban, still about 40% of respondents used mesh for transvaginal POP repair.
Conclusions: This survey confirmed that MUS was the preferred SUI surgery and that urogynecologists are still divided in the one step treatment of SUI associated to POP. The use of mesh was still larger than supposed, considering the mesh ban in several countries (see Fig. 1).

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18 - Italian validation of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-IR) IUGA Revised

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Introduction and aim of the study: The impact of female pelvic floor dysfunction (PFD) 3 and its management on sexual activity has been previously evaluated using validated questionnaires, i.e. the Female Sexual Function Index and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire- 12. Recently, a more completed, revised version, the PISQ-IR (IUGA Revised), has been validated in different languages. The aim of this study was to validate the PISQ-IR questionnaire in the Italian language in a population of women with PFD.
Materials and methods: A multicentre study was conducted to realize the Italian version of PISQ-IR through a linguistic validation multi-step process: forward translation, backward translation, and questionnaire administration. Women with pelvic organ prolapse (POP), urinary and/or faecal incontinence (UI, FI) with sufficient understanding of the Italian language were included in the study. Excluded patients were women with vulvodynia, painful bladder syndrome and chronic pelvic pain. All patients underwent history and physical examination; demographics, physiological parameters and surgical history were collected. Patients were considered sexually active (SA) or non-sexually active (NSA) based on their response to the first item of the questionnaire. NSA and SA sections of PISQ-IR were analysed independently; each consists of subscales for condition-specific matters (NSA-CS and SA-CS), partner-related reasons (NSA-PR and SA-PR), global quality rating (NSA-GQ and SA-GQ) and a condition impact subscale (NSA-CI and SA-CI).
Statistics: Comparisons between basic distribution of patients' demographics and clinical characteristics were performed with the X^2 test. The Mann–Whitney test investigated relationships between PISQ-IR scores and patients clinical characteristics. Test–retest reliability was assessed with the Intraclass Correlation Coefficient (ICC). The Cronbach α coefficient assessed internal consistency.
Results: Among 132 included patients 101 completed the study by answering to both the first test and the retest after 15 days (cases). Forty-eight patients affected by other conditions acted as controls. On the Mann–Whitney test, a statistically significant relationship was identified between the older age in the NSA patients and a worse score on the NSA-CS scale ($p<0.006$); the reasons for not being sexually active were impact of uro-gynaecological clinical conditions, presence of pain during sexual activity and other health reasons. A significant relationship was found between the mean age of SA patients and a better score on the SA-AO scale (quality of arousal and orgasm, $p = 0.000$). With regards to the ICC, excellent reliability was found in 10 correlations, good reliability in 8 and adequate in 2 (Table 1). Internal consistency measured for the full questionnaire was excellent for both SA and NSA women (Cronbach's α: 0,937 and 0,938, respectively).
Interpretation of results: This validation study showed the linguistically validated Italian PISQ-IR was completed for all the items by most patients. Although in psychometric analysis at least 10 cases for single items need to be collected to obtain an adequate statistical power, our results showed nevertheless very good reliability and internal consistency of the questionnaire. Scores of the SA-PR, SA-GQ and NSA-PR showed very similar values both in cases and controls, indicating that a positive relationship with the partner is responsible for a better quality of sexual life. Analysis of items related to "feeling physically stimulated" (Q7) and "satisfied" (Q8), showed that patients with PFD reported feeling of physically stimulated (Q7) and satisfaction (Q8) to a lesser extent than controls. One study limitation was represented by the reduced number of patients with FI, which did not allow to establish the impact of FI on patients' sexual life. The lack of this data is however in line with previous validation studies in other languages, where the number of women with IF was extremely low.
Conclusions: The Italian version of PISQ-IR is linguistically valid; future research should explore feasibility and utility for patients and physicians.

Table 1
ICC of the PISQ-IR between test and retest (cases).

Sub-scales		ICC	Items
Excellent: 0.9-1			
MEAN	NSA-PR	,964	NSA-PARTNER RELATED; Q2a: no partner; Q2b: no interest
"	NSA-CS	,977	NSA-CONDITION SPECIFIC; Q2c: impact of clinical condition; Q2d: other health reasons; Q2e: pain

(*continued on next page*)

Table 1 (*continued*).

"	SA-PR	,946	SA-PARTNER RELATED; Q14b: frequency; Q13: lack of partner desire; Q14a: desire
"	SA-D	,983	SA-DESIRE; Q16: frequency of desire; Q15: ask for more; Q17: desire degree
"	SA-CI	,972	SA-CONDITION IMPACT; Q20b: inferiority belief Q20d: feelings of anger; Q18: limitations due to fear; Q20c: embarrassment
Good: 0.75-0-9			
MEAN	SA-GQ	,766	SA-GLOBAL QUALITY; Q19b: appropriate; Q19a: satisfying; Q19c: feelings of trust; Q20a: frustration
"	NSA-GQ	,865	NSA-GLOBAL QUALITY; Q4a: soddisfacente; Q4b: adeguata; Q5a: feeling of trust; Q6: bother
"	NSA-CI	,881	NSA-CONDITION IMPACT; Q5b: inferiority belief Q3: feeling of anger; Q5c: feeling of anger
"	SA_AO	,881	SA-AROUSAL, ORGASM; Q7: arousal; Q8a: satisfaction; Q10: orgasm degree Q11: pain
Adequate: 0.5-0.75			
"	SA-CS	,709	SA-CONDITION SPECIFIC; Q8c: feelings of fear; Q8b: feelings of shame; Q9: UI or FI during sexual activity

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19 - Sexual function after surgery for Pelvic Organ Prolapse: Comparison between hysterectomy and uterine-preservation

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Introduction and aim of the study: To assess sexual function in women undergoing laparoscopic sacropexy (LS) for the treatment of uterus prolapse, with hysterectomy or uterine-sparing.
Materials and methods: This was a prospective observational study, January 2018–May 2021, that evaluated sexual function in women with symptomatic ≥2nd stage uterine prolapse according to Pelvic Organ Prolapse Quantification System, who underwent a first surgery with LS. Surgical procedures were performed by the same operator. After a detailed counseling, treating any possible oncological or sexual consequences, women decided to preserve or remove uterus. Group 1 included women underwent subtotal hysterectomy and istmosacropexy and Group 2 females treated with uterine preservation and hysterosacropexy. This latter group was studied for the absence of abnormal uterine bleeding and absence of uterine and cervical lesions. Another adequate counseling was performed regarding possible associated risk with the preservation of the uterus in menopause, those associated with possible pregnancy for women of childbearing age and the need of regular gynecological visit. FSFI (Female Sexual Function Index) Italian validated questionnaire was administered before surgery and 6–12 months after operation to all two groups, and follow-up included vaginal inspection. Prolapse recurrence was defined as POP-Q stage >1.
Results: A total of 73 women with symptomatic uterine prolapse were enrolled: 53 (72.6%) in Group 1 and 20 (27.4%) in Group 2. A significant improvement in the FSFI score was found after surgery in both groups, but no significant difference was found when comparing the groups. Specifically, 51 women in the Group 1 (96.2%) and all women in Group 2 improved the FSFI score. A worsening of post-operative sexual function was recorded in 2 cases (3.8%) of the Group 1 for the following reasons: one case complained a worsening of dyspareunia that was already present before the operation, the second patient due to extreme difficulty in reaching the orgasm without uterus. No case of relapse was recorded.
Interpretation of results: Our data demonstrated a significant improvement in sexual function after laparoscopic correction of uterine prolapse in both groups, but we did not find a significant difference when comparing the two groups. Consequently, uterus sparing did not significantly influence sexual function outcomes. This could mean that the perception of an anatomical improvement in women's body favors a better self-imaging and, as a consequence an improvement in sexual function after surgery, regardless the presence or absence of the uterus.
Conclusions: Uterus sparing did not significantly influence sexual function after LS for uterus prolapse. LS, with or without uterus preservation, was an effective procedure in improvement sexual condition.

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20 - Thulium laser ablation for posterior urethral valves: Efficacy, safety and urodynamic follow-up

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Introduction and aim of the study: Use of thulium laser (ThL) for posterior urethral valves (PUV) ablation (ThLa) is not reported in literature. Since ThL evaporates tissue continuously without generating pressure waves and creates clean cuts by moving fiber tip across tissue, it could have advantages over electro-fulguration (EF). Aim of the study is to evaluate efficacy and safety of ThLa in PUV treatment.
Materials and methods: From 2014 to 2017, 20 PUV patients were randomly assigned to ThLa (10 cases) or EF (10 cases). Since 2018, 15 PUV patients underwent ThLa. In all cases, cystoscopy and voiding cystourethrography (VCUG) were done at 6–8 months after treatment. Operative time, catheterization period, re-treatment (remnants valves, stricture) and immediate (bleeding, urinary tract infection, retention) and long-term (incontinence, strictures) complications were evaluated.

Urodynamic follow-up was performed in patients ≥ 5 years (13 ThLa and 10 EF group) with uroflowmetry/ultrasound PVR (FLW/PVR) and videourodynamics in patients with pathologic FLW/PVR. Student t test and Fisher exact test were applied for statistical analysis.

Results: Twenty-five PUV patients (average age: 9.3 ± 19 months) underwent ThLa: mean operative time was 25 min; mean catheterization period was 1 day; immediate complications were not recorded; 14/25 patients need re-treatment (ThLa) for remnants valves; no urethral strictures were found in ThLa group. Patients treated with EF (average age: 19.2 ± 27.7 months) showed significant longer ($p<0.003$) catheterization period (average: 1.8 ± 0.9 days) and higher rate ($p<0.05$) of immediate complications (4 bleeding, 2 infection, 1 urethral stricture) than ThLa ones; no significant differences in operative time ($p=0.16$) and re-treatment for remnants valves ($p=0.34$) were found between ThLa and EF group. Results of urodynamic follow-up are shown in table.

Interpretation of results: ThLa is safe and effective in children with PUV. Immediate and long-term complications were not found in ThLa group while they were present in 70% of EF patients.Only patients treated with EF experienced urethral strictures. Since valve bladder dysfunction is mainly due to severity and persistence of PUV obstruction, it was comparably represented in both groups.

Conclusions: PUV vaporization with ThL is effective and safe. Since ThLa has fewer complication, it seems to be preferable to EF.

Groups	Bladder Diary (LUTS: pts.)	FLW/PVR (suggestive pattern:pts)	VideoUDS (pattern:pts)
ThLA	UI: 4	OAB: 3	Detrusor Overactivity: 3
13 patients	UTI: 1	Obstruction:1	Functional obstruction: 1
avg.age: 6.69 ± 0.85 yrs;	Straining: 1	PVR: 1 (127 ml)	(detrusor hypocontractility)
range: 5–8 yrs	No LUTS: 9	Normal: 9	Anatomic obstruction: 0(stricture)
EF	UI: 3	OAB: 1	Detrusor Overactivity: 1
10 patients	UTI: 2	Obstruction:2	Functional obstruction: 0
avg.age: 6.8 ± 2.1 yrs;	Straining: 2	PVR: 2 (60 ml, 90 ml)	(detrusor hypocontractility)
range: 5–12 yrs	No LUTS: 7	Normal: 7	Anatomic obstruction: 2 (stricture)

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21 - Bladder Bowel Dysfunction (BBD) in children during SARS-CoV2 pandemic

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Introduction and aim of the study: During the SARS-CoV2 health emergency, the attention has been focused on the direct damage of the virus, often ignoring the indirect consequences, especially regarding chronic and functional diseases. Bladder Bowel Dysfunction (BBD) in pediatric age is a sample of overlooked health problem.

This condition is one of the most common nephro-urological diseases in the childhood, even if often under-diagnosed.

BBD is characterized by overactive or under-active bladder, voiding postponement, incontinence, extraordinary daytime urinary frequency, dysfunctional bladder voiding and bowel dysfunctions (as constipation).

BBD could be exacerbated by psycho-social stress. Sars-CoV2 pandemic has been an undisputable source of stress, which implies a greater number of dysfunctional diseases.

The initial aim of this study was to demonstrate how the psycho-social adversities due to pandemic negatively influenced clinical manifestations of BBD, but data we found were contradictory to our initial hypothesis.

Materials and methods: Studies about pandemic implications on BBD are rare. In this study we reviewed and analyzed data from the main medical databases (PubMed, UptoDate, Embase).

The purpose of our analysis was to discover and explain the implications of the Covid19 Pandemic on Bladder and Bowel Dysfunction.

Results: In Italy functional constipation prevalence (2021) was 13,6%. In 2018 it was 14%. So, during the pandemic, there was a reduction of 0,4% in constipation prevalence.

Other studies compared the outcome of urotherapy in patients with BBD with control patients from the pre-Covid Era. During the follow-up 13.3% of the study group patients had a complete response, 44.6% had a partial response, 42.2% were non-responders. In the control group, the response rates were 5.9%, 39.2% and 54.9% respectively.

Interpretation of results: Data demonstrate the reduction of constipation prevalence during pandemic. The domestic setting allowed a strict parental control of children's voiding and defecation habits, children lose the instinct to hold back feces (which is common during school hours). Moreover, homeschooling increased the success of standard urotherapy and management of BBD.

Conclusions: This overall therapeutic success during the pandemic suggests that, even if Covid 19-related stress can be a trigger for dysfunctional bladder and bowel diseases, lock-down could increase the effectiveness of urotherapy and constipation therapy also because it is easier to adjust the behavior and to fit diet, water intake and habits.

The reason of this result could be that school environment does not promote proper diet and water intake and lead children to postponing or ineffective voiding.

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22 - Toilet training in children and adolescent with autism spectrum disorder: A novel and successful protocol

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Introduction and aim of the study: To develop a protocol for the Toilet Training in subjects with ASD and to assess its effectiveness in increasing continent voids, bladder control and time between micturitions.
Materials and methods: We developed a Toilet Training protocol for ASD subjects, including the follow components: (i) removal of diapers, (ii) scheduled time interval for bathroom visits, (iii) positive reinforcement of micturition in the toilette, (iiii) gradual increase time intervals between micturitions. Correct micturition was defined as the release of urine while seated on the toilet. Patients were evaluated at baseline with urinalysis and culture, abdomen ultrasound and 7-days bladder diary (including successfully voiding and accidents); follow-up was every week with the bladder diary evaluation. Patient's parents were instructed to perform the toilet program. Patients were taken to the toilet on a schedule and reinforced when they successfully voided into the toilet. At week 1, the scheduled time for bathroom visit was every 40 min, and increased by 5 min each week, until reaching 90 min. The program included negative reinforcement in case of overtime micturition. The protocol lasted 6 months. Success definition was: achievement of increasing continent voids, bladder control and time between micturitions.
Results: Subjects included in the protocol were 20: (11 males, 9 females) with age ranging from 7 to 19 y.o. All patients were cognitively whole and 4 of them were non-verbal. Intervention took place in the home of each participant. At baseline, all patients had no or <30% of successful voids in the toilet. No patients had recurrent urinary tract infections or post-urine residual volume >50 mL. All patients had diapers. At the end of teaching 2/20 (10%) had still diapers: from 6.1 ± 1.2 to 2.8 ± 1.1 pads/die, $p < 0.00$. All the patients increased the number of voids in the toilet (mean ± SD baseline-last f-u: from 3.6 ± 1.3 to 15.2 ± 4.8, $p < 0.00$). According to our definition of success, the procedures were effective for all patients and 15/20 participants completed the micturition timing of the protocol.
Interpretation of results: We reported one of the largest cohorts of subjects with ASD underwent a formal toilet training program. Success was obtained in all cases, and complete continence in almost all the subjects. A relevant improvement in continence control was reached also in the 2 subjects who still had diapers. Our protocol resulted in a relevant improvement of continence and micturition pattern for these subjects.
Conclusions: Toilet training is an important milestone for young subjects with ASD and for their parents too for several reasons, including independence, safety, and social acceptance. This study demonstrated that our Toilet Training protocol was successful in children and adolescents with ASD, leading them to achieve continence and relevant improvement in micturition.

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23 - Uroflowmetry and clinical follow up in boys treated for posterior urethral valves

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Introduction and aim of the study: We aim to investigate whether uroflowmetries and clinical data of our patients treated for posterior urethral valves (PUV) show abnormal findings.
Materials and methods: We retrospectively collected the last uroflowmetry and clinical data of patients treated early after birth for PUV and afferent to our out-patient clinic from May 2018 to November 2021. Non toilet-trained children and neurologic bladder were excluded. Clinical data, voided volume (VV), Qmax and Post Void Residual (PVR) of their follow up were analyzed. Each observed VV was compared to its expected VV-range according to the patient's age. Qmax/VV percentile for each patient was recorded according to the Liverpool Nomograms for Boys, or for Adults when the child was older than 14 or the VV was >320 ml.
Results: 26 male patients between 3 and 16 years of age matched our criteria (median age 6,6). Observed VVs were 12,4% lower than the mean VVs expected for age (p=0,16). The VVs of 16 patients (61,5%) were below the values expected for their age, 5 (19,2%) were above and 5 (19,2%) were within the expected range. According to the Liverpool Nomograms for Qmax/VV, the overall mean percentile was 47,8. 20 children were younger than 10 and their mean Nomogram percentile was 57,5; 6 children were older than 10 years and their mean percentile was 15,3 (p<0,001) [Fig. 1]. 9 patients (34,6%) had a significant PVR. 3 patients (11,5%) had a history of recurrent UTIs. 1 child voids through urethra and performs 2 CIC per day because of high PVR. 12 children (46,1%) reported a history of daytime urinary incontinence (UI) (mean age with UI 6,6; without UI 8,9; p=0,58). 11/12 (91,6%) children with daytime UI were younger than 10. The most frequently prescribed therapies were anticholinergics or alpha-adrenergic blockers.
Interpretation of results: In accordance with EAU guidelines and literature we found that bladder dysfunctions are common in PUV patients, with low VVs and UI being the most common symptoms in children younger than 10, while high VVs and low Qmax/VVs are the most common symptoms in teens. This mirrors the literature that describes a small capacity, unstable bladder in the younger patients and an impaired contractility, large capacity, hypotonic bladder in the older ones.
Conclusions: The detrusor dynamics in patients treated for PUV may change with growth and the onset of myogenic damage may be delayed, thus requiring a long follow up.

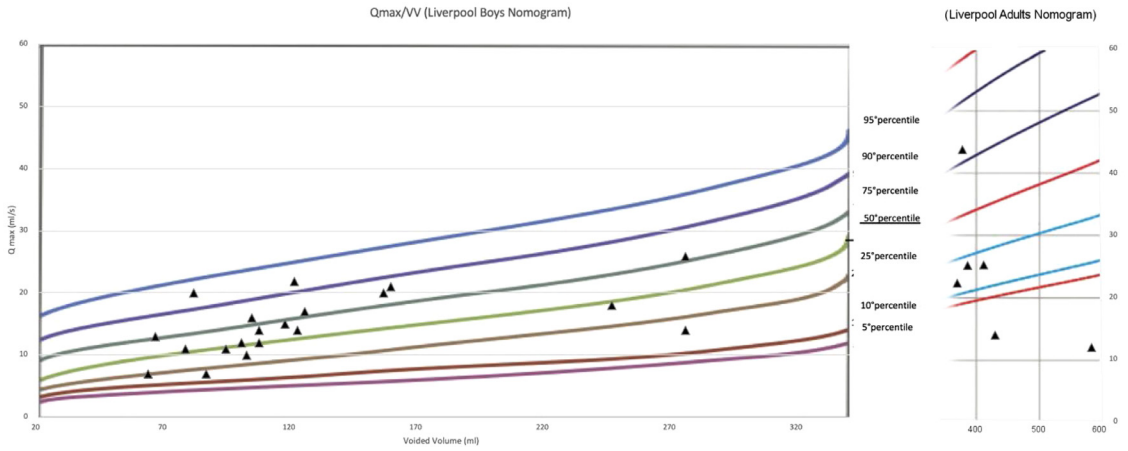

Fig. 1.

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24 - Urological transitional care in patients with neurogenic bladder: 10 years experience from a multidisciplinary pediatric and adult team

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Introduction and aim of the study: As life expectancy has become higher, Urological Transitional Care in patients born with spina bifida (SB) or neurogenic bladder is acquiring increased importance Aim of the transitional process is to continue to assure optimal and multidisciplinary medical care, at the same time encouraging the patient to take responsibility in his own health care. The optimal strategy has yet to be defined. The aim of the study is to present the 10 years of experience with the transitional clinic program at our institution and the results of the process.
Materials and methods: A transitional clinic plan dedicated to adolescents with SB and neurogenic bladder started in 2012. Adolescents enrolled in the transitional process had a yearly clinical consultation in a multidisciplinary clinical setting with pediatric urologists, adult urologists and other specialists, when needed. After 1–3 outpatient clinic consultations, patients were shifted from pediatric to adult care. All clinical relevant data were transmitted and pediatric specialists continued to be available.
Results: From 2012 to 2021, 46 patients were enrolled. Age at transition ranged from 15 to 18 years. The diagnosis was: myelomenigocele in 25, occult spinal dysraphism in 10, other (cancer, trauma) in 11.21 patients could walk without any support, 12 were on wheelchair, 13 on wheelchair and/or walking with supports. Mild mental impairment was present in 6 and severe in 5. 10 patients voided spontaneously, 27 were on self-intermittent catheterization, 9 both. 29 patients were treated with antimuscarinic therapy. 11 performed trans-anal irrigation (TAI) for bowel management. Additional urological procedures performed during childhood were: botulinum toxin injections in 4, bulking agents injection for vesicoureteral reflux and stress urinary incontinence in 5, Mitrofanoff procedure in 1, Malone antegrade continence enema procedure in 1. All patients had normal renal function at the time of transition. Renal ultrasonography was normal in 34, showed minor degrees of scarring or hydronephrosis in 12. After the transition process 39 patients are currently annually followed at the Adult Spinal Unit, with a follow-up from 4 months to 7 years. One patients died after one years for the oncological pathology, 6 patients were lost at follow-up. Additional procedures performed for continence after transition were botulinum toxin injection in 3 and bulking agents injections in 2. All patients have normal renal function.
Interpretation of results: As far as we know, this is the first experience in Italy of a structured Transitional Clinic for patients with SB and/or neurogenic bladder, with multidisciplinary pediatric and adult specialists,with a large population and relevant follow-up. The main goal of urological management in these patient, which is the preservation of normal renal function during childhood and all along the transition process up to adulthood, was fulfilled in all our cases. Low compliance with therapy and followup, which is a severe problem in adolescence and young adulthood, was 13%.
Conclusions: As many patients with SB survive through childhood until adult age, the role of pediatric urologists is to assure prosecution of care until adulthood. The organization and management of the transition clinic program are challenging and time-consuming and require personal commitment. The vast majority of our patients were happy with the transitional process, as demonstrated by the low rate of drop out and occurrence of chronic renal failure was negligible.

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25 - Aquablation in patients with benign prostatic hyperplasia: Functional and endoscopic results

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Introduction and aim of the study: We report our clinical experience with Aquablation in terms of perioperative and 1-year functional outcomes, along with 3-months and 1-year endoscopic evaluation after the procedure.

Materials and methods: From 10/2018 to 10/2020, patients referred to our center with BPH-related LUTS, International Prostate Symptom Score (IPSS) ≥10, maximum urinary flow rate (Qmax) ≤ 12 mL/s, and prostate volume <80 mL were enrolled in this prospective study to undergo Aquablation. Exclusion criteria were prostate cancer diagnosis, previous prostate surgery, indwelling catheter, urethral stenosis, bladder stones, prostatic calcifications. Demographics, perioperative data and complications (according to the Clavien–Dindo system) were collected. Functional outcomes were assessed at 1, 3, 6, and 12 months with IPSS, Sexual Health Inventory for Men (SHIM), Male Sexual Health Questionnaire for ejaculatory dysfunction (MSHQ-EjD), uroflowmetry and evaluation of post void residue (PVR). In addition, the patients underwent cystoscopy at 3 and 12 months after the surgical procedure. During the cystoscopy the presence of residual fluffy tissue or mucous flaps, the preservation of the veru montanum and the ureteral orifices as well as the presence of scar tissue at the level of the bladder trigone were evaluated. Moreover, the quality of the ablation at cystoscopy was rated according to a Likert scale (1-poor; 5-excellent).
Results: 56 patients were enrolled in the study. The median ablation time was 5.16 (1.9) min. The median catherization time and hospital stay were 3 (3–4) and 4 (4–5) days, respectively. 10 postoperative complications were recorded (17.8%), of which 3 classified as Clavien–Dindo grade ≥ 2 (5.3%), namely 2 (3.5%) anemization requiring transfusions, 1 (1.7%) acute urinary retention after catheter removal. The mean (SD) Qmax at 1, 3, 6 and 12 months was 19.7 (9.3), 18.1 (3.1), 18.2 (6.2) and 17.5 (6.1) ml/s, respectively. The median IPSS urinary symptom score was 4 (2–6) after 1 month and further improved to 2 (1–4) one year after surgery.
Interpretation of results: The median IPSS QoL score and mean PVR reached 1 (0–1) and 24 ml (5,7) at 12th month. No patients developed postoperative erectile dysfunction, while 2 (3.5%) reported loss of antegrade ejaculation. At 3-month follow-up cystoscopy, no residual fluffy tissue, as well as no damage to the verumontanum, ureteral orifices or bladder trigone were recorded. In 15/56 (26.7%) patients non-obstruent mucosal flap was shown. The median quality of the ablation was 3 (3–4). All these findings were confirmed at 12-months cystoscopy.
Conclusions: Aquablation for the treatment of BPH-related LUTS is feasible, safe and effective procedure. Endoscopic results seem to be as good as functional results up to 1-year follow up.

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26 - PFMT in postpartum incontinence

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Introduction and aim of the study: Pregnancy can contribute to the onset of pelvic floor dysfunction (PFD), including urinary (UI) and anal incontinence (AI). These mostly resolve within 3 months from delivery, but sometime symptoms may persist. That urges us to focus on early recognition of women at risk for IU and AI. The aim of the study is to investigate how accurate are the screenings and to evaluate the effectiveness of the pelvic floor muscle training (PFMT).
Materials and methods: We analyzed women referred to our center between august 2017 and September 2018 after resulting at medium or high risk for UI or AI at the post-partum screening. The specific risk was determined using the Cleveland Clinic QHS Calculator. A medium perineal risk was defined by a UI risk of 20%–40% and/or an AI risk of 15%–25% and a high perineal risk was the result of a UI risk > 40% and/or an AI risk > 25%. Women were evaluated at 4 months from delivery. A specific rehabilitation therapy was proposed. 2 years after delivery the patients were surveyed to investigate symptoms and adherence to the treatment.
Results: 358 women with medium or high perineal risk were evaluated. All women were offered PFMT: group rehabilitation was addressed to 67% of symptomatic women and 63% of asymptomatic, individual rehabilitation to 7% and 5%, home training to 23% and 30%. 245 women answered the survey. 55% had underwent the proposed treatment: 32% reported regression of symptoms, while 40% complaint UI and/or AI. 111 women had not performed the treatment: 26% reported regression of symptoms, while 46% reported UI and/or AI. A total of 105 women had symptoms, 8 of new onset and 97 complaining persistence. 87 women reported persistence of UI: 51% of these had adhered to treatment, women with regression showing a compliance of 64%. 8 women reported persistence of AI: 55% of them had adhered to treatment, in contrast with 92% among women reporting regression of symptoms.
Interpretation of results: 54% of women was symptomatic 3 months after delivery, mostly from the high-risk group (76%); 60% of women at high-risk was confirmed symptomatic. Just over half of women surveyed adhered to treatment, with the greatest compliance for individual home training. Though, regression of symptoms was greater and onset of new ones was lower among women performing the treatment. At the follow up interview we observed that 60% of women with persistence of AI symptoms had a high perineal risk, compared to 33% of women with regression.
Conclusions: Our postpartum screening for PFD allowed us to identify women who developed UI and/or AI symptoms in 2 years after delivery. Feedback from adherence to treatment induces us to investigate factors affecting the poor compliance. We can assume that performing a PFMT treatment contributed to a better outcome and on preventing onset of symptoms.

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27 - Thumb up for big toe down! Relationship between motor response to percutaneous tibial nerve stimulation and success rate in patients with detrusor underactivity

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Introduction and aim of the study: Detrusor underactivity (DU) is defined by low detrusor pressure or short detrusor contraction in combination with a low urine flow rate resulting in prolonged bladder emptying and/or a failure to achieve complete bladder emptying within a normal time span. Percutaneous tibial nerve stimulation (PTNS) has been proposed for the treatment of non-obstructive urinary retention. Unfortunately, no predictive factors can help to foresee patient response to the treatment. Aim of this study was to investigate possible parameters able to predict the success of PTNS in patient with DU.
Materials and methods: This is a prospective non controlled study in consecutive patients treated with PTNS in our center for DU in 2021. Exclusion criteria were neurologic pathologies, diabetes and infection of urinary tract. All patients had been evaluated by IPSS questionnaire, bladder diaries and invasive urodynamic

evaluation before the treatment. The definition the success of the treatment used in this study was a PGI-I from 1 to 2 (in a 7-grade score). Data of patients who responded/did not respond to treatment were compared: in particular, age, sex, IPSS score, bladder diaries, intensity of stimulation used and the rate of patients showing flexion of big toe were analyzed in both groups.

Results: A total of 17 patient (age range 26–76 years; average age 45,6 years, M=11, F=6) with a previous diagnosis of DU were evaluated. 11 patients were considered responders to the treatment according to previous definition, while 6 patients were considered non responders. All parameters considered were not significantly different among responders/non responder to PTNS. Only flexion of big toe was found more frequently in responders: in fact, it was present in 10 out of 11 responders (90,9%) and in 1 out of 6 non responders (16,6%) (P-value 0.005, Fisher's exact test).

Interpretation of results: At present, no predictive parameters for success of PTNS in detrusor underactivity have been found. Our study confirms that the considered parameters do not predict the success of the treatment. We found that also the intensity of stimulation used was not correlated to the success of the treatment. On the other hand, presence of flexion of the big toe seems to correlate with the success of PTNS. Further studies are needed to confirm this finding and to investigate whether the patients who show/do not show the flexion of the big toe present a different anatomy or functional of the tibial nerve or of other districts of the nervous system.

Conclusions: The presence of flexion of the big toe correlates with the success of PTNS. Further studies are needed to confirm this finding, thus suggesting that it is advisable to repeat the needle positioning in patients who do not show the flexion of the big toe.

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28 - PUL placement under pure local anesthesia

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Introduction and aim of the study: Among the new minimally invasive surgical therapies (MISTs) for benign prostatic hyperplasia (BPH), prostatic urethral lift (PUL) is one of the most widespread and well-studied procedures in the world. In this work, we present the first Italian experiences performing PUL under local anesthesia (LA). Our primary objective was to evaluate the tolerability of this procedure under LA.

Materials and methods: A prospective study was conducted with patients (pts) treated with PUL under LA between November 2017 and September 2021 in two Italian centers. The only exclusion criteria for PUL was an obstructive median lobe or prostate larger than 90 ml. The anesthesia protocol consisted in the bladder injection of 20mg of cold lidocaine followed by 1 lubricant with cold lidocaine 20 min before the intervention, both kept in the bladder with a penis clamp; another cold lidocaine lubricant was added just before starting the procedure. Visula Analogue Scale (VAS) was used at the end of the procedure to measure pain intensity during PUL placement. Follow-up visits were scheduled at 1, 6, 12, and 24, 36, 48 months postoperatively. Maximum urinary flow (Qmax), post void residual urine volume, and International Prostate Symptoms Score were assessed at baseline and at each follow-up visit to evaluate PUL effectiveness. During these visits, all patients were questioned on changes in sexual function from their baseline reports.

Results: A total of 55 pts were treated. Among them 16 (29%) had a catheter at the time of intervention, 20 (36%) pts had severe lower urinary tract symptoms (LUTS). A mean of 3.6 (2–13) PUL were implanted in pts of 67 (50–84) years with a prostate size of 67 (24–90) ml over 16 (8–60) min under pure LA. Medium hospital stay was 1 day (1–3) including the procedural day. No Clavien–Dindo Grade > 2 was reported postoperatively (17 pts grade 1 and 1 pt grade 2). All pts were catheter free at last follow-up. The average VAS scores was 3.8 for the procedure. When asked whether the pain sensations had been higher, lower or same during the procedure or at the preoperative cystoscopy, only 15% of the patients responded it was higher. Changes to the anesthesia protocols were required in 2 (3.6%) pts (i.e. intravenous mild sedation). The median follow up was 24 (1–47) months. At the latest follow-up, 52% of pts were satisfied and referred a complete symptoms relief. Sexual function including ejaculation was unchanged.

Interpretation of results: PUL placement under LA is a well-tolerated, safe and effective method for the treatment of LUTS due to BPH.

Conclusions: The feasibility with only local anesthesia is an important element that reinforces the minimally invasive aspect of the procedure and improves the speed of recovery for patients. PUL is an attractive option for selected pts who seek rapid relief of LUTS with complete preservation of sexual function.

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29 - Setting up of robotic surgery team for pelvic floor procedures

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Introduction and aim of the study: Since 2005 when the Da Vinci System was approved by FDA for gynaecological surgery, this device has increasingly been used to treat benign and oncological diseases. Pelvic organ prolapse (POP) represents one of the former.

This novel approach fulfilled the gap between the benefits of vaginal and open abdominal surgery with the chance to perform mesh augmented procedures. Moreover, thanks to a faster learning curve, this surgery is accessible, feasible and reproducible even for a beginner surgical team.

Materials and methods: We collected data from our first-time experience with the Da Vinci system in our University Hospital to evaluate our staff setting and improvement. We considered all women referring to the Gynaecological Department and undergoing robotic surgery in the period between August and December 2021. We focused on pelvic floor surgery. Peri operative data were collected and analysed.

Results: During 5 months of observation, 46 robotic procedures were performed by a new-born robotic team which included one experienced robotic surgeon. After a running-in period (15 hysterectomies and 13 myomectomies accomplished from August to October), we successfully realized 8 pelvic floor surgeries in the following two months: 4 sacrocolpopexy procedures with subtotal hysterectomy for multicompartment POP and 4 cases of Dubuisson suspension for vaginal cuff or anterior-central compartment prolapse with uterine preservation.

Patients were all pluriparous, with an average age of 56 y.o. and median BMI of 27 kg/m^2. None of them had intraoperative or short-term complications. The hospitalization time was 2 days for all, except for one patient who was dismissed in 3 days.
Mean operative times were 195 min for sacrocolpopexy with subtotal hysterectomy plus bilateral oophorectomy, 75 min for lateral suspension with uterine preservation and 110 min for lateral suspension of vaginal cuff prolapse. Mean estimated blood loss was 45 ml. Conversion to laparotomy was never required.
Interpretation of results: Our results are consistent with the robotic learning curve reported by literature. In 5 months, we settled-up a brand-new robotic team which managed to perform complex POP surgery in a safe environment with no complications nor conversions.
Conclusions: As suggested by our preliminary results, the introduction of the Da Vinci System in pelvic floor surgery represents an important innovation. The use of robotic technique, despite pelvic floor disorders complexity, is safe and easily accessible, even for a beginner surgical team.

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30 - 5 years follow-up outcomes of pelvic floor rehabilitation protocol in subjects with lifelong premature ejaculation: The definitive long-term evaluation

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Introduction and aim of the study: The aim of the study is to evaluate the 5 years follow-up long-term outcomes of pelvic floor muscle (PFM) rehabilitation in males suffering from lifelong premature ejaculation (LPE). The diagnostic tools to investigate LPE patients were intravaginal ejaculatory latency time (IELT) and the self-report Premature Ejaculation Diagnostic Tool (PEDT), as primary outcome endpoints.
Materials and methods: This retrospective study evaluated 173 participants with LPE, and a total of 134 pts out of 173 (77%) completed the training protocol and all the 5 years follow-up. At baseline, all participants reported an IELT ≤60 s and PEDT score >11. Participants completed a 12-week program of PFM rehabilitation, including physio-kinesiotherapy treatment, electrostimulation, and biofeedback, with three sessions per week, with 20 min for each component completed at each session. The effectiveness of intervention was evaluated by comparing the geometric means of IELT times and PEDT scores observed from baseline, to 6, and 12 months during the intervention, and at 24, 36, 48 and 60 months postintervention, using a paired sample 2-tailed t-test, including the associated 95% confidence intervals.
Results: One hundred thirty-four participants completed the PFM rehabilitation protocol with 36 sessions of PFM. A total of 121 subjects achieved a better control of ejaculation reflex, reporting a mean IELT of 176.9 s and PEDT score of 2.6 at the 12-week endpoint of the intervention, representing an increase from baseline of 55.7 s and 16.4 scores, respectively, for IELT and PEDT ($p < 0.0001$). Of the 121 participants who completed the 60-month follow-up, 74%, 71%, 68 and 66% reported a satisfactory ejaculation control maintenance through the follow-up evaluations at 24, 36, 48 and 60 months after completing PFM rehabilitation, respectively.
Conclusions: This is the first study on LPE treatment with 5 years follow-up. The results reported are statistically significant and might support PFM as an effective and safe treatment option for subjects with LPE. A randomized study is definitively requested to assess the role of PFM in PE.

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31 - Different ablative techniques for MRI/real-time ultrasound image fusion guided High Intensity Focused Ultrasound (HIFU): A prospective comparative and functional analysis

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Introduction and aim of the study: Recently real time magnetic resonance imaging (MRI)/trans rectal ultrasound (TRUS) fusion-guided focal High intensity focused ultrasound (HIFU) therapy has been developed by the Focal One device to perform targeted prostate cancer (PCa) ablation. Our aim was to compare safety and functional outcomes of total, hemi and focal ablation by the latest focal HIFU device.
Materials and methods: This is a prospective study including patients with low to intermediate-risk PCa treated with HIFU by Focal One® device from 11/2018 to 3/2020. Before the treatment all patients underwent mpMRI and subsequent MRI/TRUS fusion (FB) and standard biopsy (SB). Patients were stratified according to the type of ablation: total, hemi- or focal ablation. Functional data (IPSS, Quality of Life [QoL], IIEF-5, maximum flow [Qmax] and post void residual [PVR] at flowmetry) were assessed preoperatively and at 1, 3, 6 and 12 months after treatment. Moreover, the urinary symptoms reported by patients at IPSS questionnaire were divided in "irritative" and "obstructive" and compared. ANOVA test was used to compare the 3 groups.
Results: 100 patients were enrolled. Median prostate volume and lesion diameter were 46 (IQR 25-75) ml and 10 (IQR 6-13) mm. 15, 50 and 35 patients underwent total, hemi- and focal ablation, respectively. No differences were found between them except for operative time (lower in the focal group, $p<0.01$).
Interpretation of results: Significant lower incidence of irritative symptoms was identified in the focal group compared to the others ($p<0.05$ at 1, 3, 36 months of follow-up). No differences were found among the baseline status and the postoperative assessment in terms of obstructive IPSS items, IIEF-5, QoL, Qmax and PVR (all p-value > 0.05).
Conclusions: Our study suggests that patients' specific HIFU tailoring with the MRI/real-time TRUS Guidance by Focal One® device is able to minimize the side effects of treatment. In particular lower rate of irritative symptoms was registered in case of focal ablation.

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32 - Impact of self-clean intermittent catheterization in orthotopic ileal neobladder: Prospective randomized study to evaluate functional outcomes, continence status and urinary tract infections

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Introduction and aim of the study: Orthotopic neobladder (ONB) is the preferred urinary diversion after radical cystectomy (RC) with the main advantage of body image preservation, although its quality-of-life improvements are still under discussion. The principal factors associated with decrease in quality of life are continence status (both incontinence as well as urinary retention) and urinary tract infections (UTIs). The aim of this study is to investigate whether early clean intermittent catheterization (CIC) might improve functional outcomes, continence status, and reduce the incidence of UTIs.

Materials and methods: In this prospective randomized study patients were divided in two groups: group A with standard postoperative approach, and group B consisting of patients who started CIC within the first post-operative month. The CIC was introduced at the time of indwelling catheter and stents removal after ONB reconfiguration.

All patients were studied postoperatively at 1, 3, 6, and 9 months after ONB. Inclusion criteria were the ability to both perform self-catheterization and empty the neobladder using abdominal straining. The CIC was executed 4 times/daily after each voluntary micturition. Exclusion criteria were diabetes mellitus, neurological conditions, cognitive impairment, and urethral strictures. The postoperative evaluation included: post-void residual volume (PVR), urine analysis and culture, number of pads/days and the self-administrated questionnaire International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF).

Results: From September 2017 to March 2021, 39 male and 8 female patients underwent laparoscopic or robot assisted RC with totally intracorporeal ONB (37 U shaped and 10 Padua reconstructions). All patients completed the nine months follow-up (mean 9.2 months; range 6–13 months). At the first follow up all patients were able to do self CIC. At this time mean PVR was 116.5 mL, ICIQ-UI SF mean score was 16, mean no. of pads/day was 3, 14 patients reported 3 episodes of symptomatic UTIs (Escherichia coli was the most common pathogen). At 3, 6 and 9 months follow up after surgery the PVR and the ICIQ-UI SF scores were significantly improved. The number of pads decreased to 2 pads/day at 3 months, and only one safety pad at 6 and 9 months. The episodes of UTIs significantly decreased over the time with only 8 patients at 3 months (reporting 4 symptomatic episodes), and 4 and two patients at 6 and 9 months, respectively.

Conclusions: This study confirmed that PVR is one of the most important parameters related with episodes of symptomatic UTIs, pads use and continence status. The data reported supports the early introduction of self CICs in patients with OIN after RC. Self CIC in these patients was significantly associated with quality-of-life improvement related to the continence status and the reduction of UTIs episodes.

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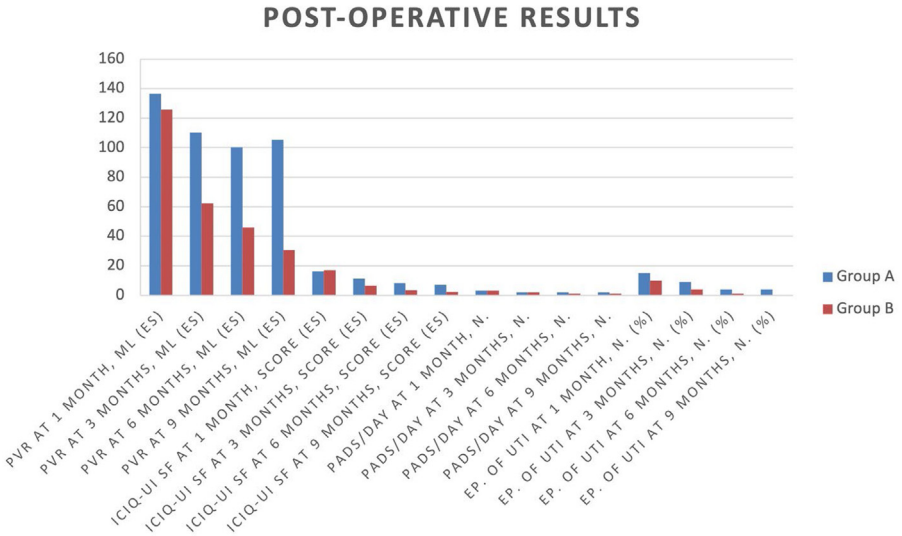

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33 - Bulbospongiosus muscle-sparing AdVanceXP Male Sling placement: Potential benefits of a different surgical technique

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Introduction and aim of the study: Perineal implantation of AdVanceXP® Male Sling System (Boston Scientific, formerly AMS, Marlborough) is an effective treatment of postprotatectomy stress incontinence (PPI), however, bothersome complications are possible. Particularly, urinary retention and dysuria are the most frequent complications, reported in about 1.7%–15% of patients.
We assessed a different, bulbospongiosus muscle-sparing surgical technique for the insertion of the AdVanceXP sling, with the aim to decrease postoperative complications and facilitate artificial urinary sphincter (AUS) placement in failed patients.
Materials and methods: A retrospective study was performed using prospectively collected clinical data. From October 1, 2011 to April 30, 2021, consecutive patients with PPI, implanted with AdVanceXP, were evaluated for this study. Patients with post-TURP incontinence or previous incontinence surgery were excluded. Based on surgical technique, patients were categorized in two groups: in group A (patients operated on until April 30, 2018), sling insertion was performed following the classical technique which involves opening the bulbospongiosus muscle and place the sling on the underlying corpus spongiosum; in group B (patients operated on since May 1, 2018), the muscle-sparing approach was used which consists of placing the sling directly on the bulbospongiosus muscle. The central tendon of the perineum was always cut. The primary outcome was the rate of urinary retention requiring catheterization. Efficacy and complications were also evaluated.
Results: Fifty-six patients were included, 20 in group A and 36 in group B; no statistically significant differences were found based on most meaningful baseline patients' characteristics
The rate of overall success for group A and B, respectively, were 75% (15/20) and 82.4% (28/34) at 6-mos, 75% (15/20) and 80.7% (21/26) at 12-mos, 70% (14/20) and 77.3% (17/22) at 24-mos, without statistically significant difference at all assessed time points. At 12-mos assessment, a mean PGI-I of 1.7 and 1.5 was observed in group A and B, respectively, and the ICIQ-UI SF scores improved significantly in both groups (5 and 4.6).
Seven patients (35%) in group A and three patients (8.3%) in group B experienced postoperative urinary retention requiring catheterization (p=0.042). All urinary retentions were transient, and no patient required a surgical revision. Length of hospital stay was not statistically different (3 vs. 2.6 days, p=0.1).
No patient reported Clavien–Dindo grade≥2 perioperative complications. Four failed patients (two in each group) underwent subsequent AUS implantation without major difficulties, but in group B a completely normal bulbar urethra was found after bulbospongiosus muscle opening.
Interpretation of results: The alternative muscle-sparing approach seems to provide some protection against postoperative urinary retention. We hypothesized that bulbospongiosus muscle left in place, by avoiding a direct compression of the bulbar urethra and preserving urethral compliance, may help reduce voiding complications. The preservation of an intact and healthy proximal bulbar urethra is particularly desirable in failed patients requiring the subsequent AUS implantation.
Conclusions: Efficacy being equal, the bulbospongiosus muscle-sparing implantation of AdVanceXP may offer a less invasive and straightforward technical alternative to the classical Advance technique.

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34 - Transrectal ultrasound guided hydro dissection of the rectum-vesicular layer before robot assisted radical prostatectomy: Proposal of a new technique to improve early recovery of continence

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Introduction and aim of the study: Most of efforts related to surgical management of localized prostate cancer are focused on functional recovery after radical prostatectomy. Several studies highlighted how robotic assisted radical prostatectomy (RARP) might be safer in terms of functional results when compared to open approach. Moreover, different study showed as lower use of energy, near to neuro vascular bundles (NVB), might impact on early recovery of functional outcomes. This study aims to evaluate a new preoperative ultrasound guided approach that might reduce the surgical traumatism and the use of energy especially during the step of seminal vesicles isolation, in patients undergoing RARP according to Montsouris' technique. This approach consists of a pre-RARP hydro-dissection of the rectum-vesicular layer through trans-perineal injection of saline solution under trans-rectal ultrasound guidance.
Materials and methods: Patients eligible for NVB sparing RARP, according to EAU guidelines, were enrolled and randomly divided in two groups: Group A undergoing Montsouris' technique RARP with preoperative TRUS guided hydro-dissection of the rectum-vesicular layer; Group B undergoing standard Montsouris' technique RARP. The following data were collected and compared between the two groups: operative time, total blood loss, hospitalization time, days of catheterization, prostate volume, pathological stage, complications according to the Clavien–Dindo classification. Statistical analysis was performed and p value less than 0.05 was considered significant. 1, 3, 6 and 12 months after surgery follow up was scheduled for all the patients including: total PSA serum level, DRE, erectile function according to IIEF-5 score, and postoperative continence, defined as using equal or less than 1 pad for day (≤1 pad/day).
Results: A total of 42 patients were enrolled in the study. The baseline characteristics of the two groups (21 pts for each group) resulted homogeneous. Group A showed a statistically significant reduction of operative time when compared to Group B (p value < .0012). Furthermore the blood loss resulted lower in group A vs. B (p value < .015). Even not statistically significant, Group A showed less decrease of IIEF-5 score at 1, 3 and 6 months after surgery when compared to Group B. Regarding urinary continence, Group A showed higher percentage of continent patients 1 and 3 months after surgery (p value < .023). This result disappeared through the time at 6 months of follow-up.
Conclusions: This study showed how TRUS guided hydro-dissection of rectum-vesicular layer before RARP might reduce the traumatism and use of energy during dissection of seminal vesicles (as por standard Montsouris technique). In our preliminary experience, the TRUS hydro-dissections technique when compared to standard Montsouris RARP resulted in earlier and better post-operative functional outcomes. These encouraging data need to be confirmed by further investigations. Patients eligible for NVB sparing RARP, according to EAU guidelines, were enrolled and randomly divided in two groups: Group A undergoing Montsouris' technique RARP with preoperative TRUS guided hydro-dissection of the rectum-vesicular layer; Group B undergoing standard Montsouris' technique RARP. The following data were collected and compared between the two groups: operative time, total blood loss, hospitalization time, days of catheterization, prostate volume, pathological stage, complications according to the Clavien-Dindo classification. Statistical analysis was performed and p value less than 0.05 was considered significant. 1, 3,

6 and 12 months after surgery follow up was scheduled for all the patients including: total PSA serum level, DRE, erectile function according to IIEF-5 score, and postoperative continence, defined as using equal or less than 1 pad for day (≤1 pad/day).

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35 - Post-voided residual urine ratio is a predictor of bladder outlet obstruction in men with lower urinary tract symptoms: Development of a clinical nomogram

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Introduction and aim of the study: Recently some authors have suggested a possible role of post-void residual ratio to predict bladder outlet obstruction (BOO). Aim of our study is to confirm the correlation between post-void residual urine ratio (PVR-R) and BOO diagnosed by pressure-flow studies (PFS) in males with lower urinary tract symptoms (LUTS) and to develop a clinical nomogram.

Materials and methods: A consecutive series of patients aged 45 years or older with non-neurogenic LUTS were prospectively enrolled. Patients underwent standard diagnostic assessment for BOO including International Prostatic Symptoms Score, uroflowmetry, urodynamic studies (cystometry and pressure-flow studies), suprapubic ultrasound of the prostate and ultrasound measurements of the bladder wall thickness (BTW). PVR urine and the percentage of PVR to bladder volume (voided volume+PVR) (PVR-R) were evaluated. Logistic regression analysis was used to investigate predictors of pathological bladder emptying (BOO) defined as Shaefer >II. Correlations were evaluated with Pearson test. A nomogram to predict BOO based on the multivariable logistic regression model was then developed. Discrimination and net benefit of the model was evaluated.

Results: Overall 335 patients with a mean age of 66 ± 11 years were enrolled. Overall, 131/335 (40%) presented BOO on PFS. Shaefer class was correlated with PVR-ratio with a Pearson coefficient of 0,297 (Fig. 1). In a multivariable logistic age-adjusted regression model BWT (odds ratio [OR]: 2,21 per mm; 95% confidence interval [CI], 1,57-3,11; p = .001), PVR-R (OR: 1,01 per mL/s; 95% CI, 1,00-1,03; p = .046) and prostate volume (OR: 1,03 per mL/s; 95% CI, 1,03-1,06; p = .001) were significant predictors for BOO. The model presented an accuracy of 0,82 and a clinical net benefit in the range of 10%–90%.

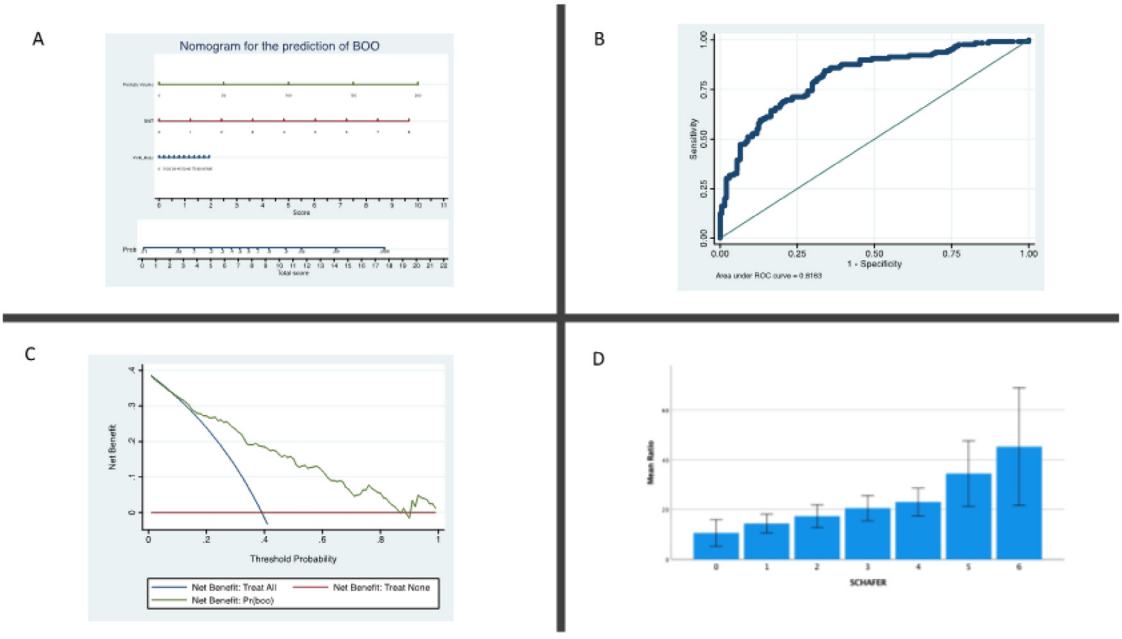

Fig. 1. A: Nomogram, B: ROC curve, C: Decision Curve Analysis, D: Median PV_ratios in different Shaffer classes.

Interpretation of results: The present study confirms the important role of PVR-ratio in the prediction of BOO.

Conclusions: For the first time we present a clinical nomogram including PVR-ratio for the prediction of BOO. External validation is needed before clinical implementation.

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36 - Sexual and functional outcomes after trans-urethral incision of the prostate: A long term follow up analysis

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Introduction and aim of the study: Long term data on functional and sexual outcomes after transurethral unilateral incision of the prostate are poor. Aim of our study is to evaluate long term functional and sexual outcomes in patients undergoing transurethral incision of the prostate (TUIP).
Materials and methods: A retrospective analysis of patients with LUTS and undergoing TUIP in our center between 2011 and 2016 was performed. All patients underwent unilateral incision of the prostate. Demographic and clinical data were recorded. All patients were reassessed in September 2021 with medical history, IPSS, PSA, maximal urinary flow rate (Qmax), post void residual urine (PVR). Erectile function was evaluated with the SHIM score and ejaculatory function with sfMSHQ score. Reoperated patients were excluded from the analysis.
Results: Overall 92 patients were enrolled with a median age of 53 years and a median prostate volume of 27 cc. Median follow up was 75 months. At the end of follow up median IPSS was 9 (6/13), median PSA was 0,6 (0,51/0,89) and median Qmax was 15 (12/17). Moderate/severe symptoms (IPSS > 8) were recorded in 59/92 (64%) patients and poor flow in 40/92 (44%). Moreover 6 (7%) patients required reintervention and 25/92 (25%) were on medications. Regarding sexual function median SHIM score was 22 (16/25) and median sfMSHQ was 14 (12/15). Moreover only 6/92 (7%) patients presented anejaculation. None of the preoperative variable was found to be a predictor of poor outcome.
Interpretation of results: According to our single center study, patients after unilateral TUIP have a good sexual function even in the long term. However, half of the patients present moderate symptoms and poor flow.
Conclusions: Unilateral transurethral incision of the prostate for bladder neck obstruction is effective in relieving LUTS and improving urinary flow and ensures patients' sexual function.

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37 - Assessment of Bladder Wall Thickness (DWT) on multiparametric MRI depends on bladder volume

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Introduction and aim of the study: MRI has gained popularity in the field of prostate cancer (PCA) management. Ultrasound Bladder Wall Thickness (DWT) measurement has been standardized over the years showing to be related to bladder volume (BV). No data have been published regarding DWT on MR images. We evaluated DWT on MRI at several bladder volumes (BV) to establish the right one.
Materials and methods: MRI images of patients evaluated for clinical suspicion of PCA were reviewed by one urology-dedicated radiologist. A 3-tesla MRI was used, BWT was computed as mean of three measurements performed at anterior, posterior and dome of bladder wall. Bladder was physiologically filled. Prostate and bladder volume were measured by using the conventional prostate ellipsoid formula. Univariate Analysis and Pearson coefficient were computed to establish the association between e BV and DWT. Patients' stratification in accordance with BV was used to assess the most stable BV value to measure BWT.
Results: MRI features from thirty-eight patients aged 61.9 ± 25.2 years were analysed. Overall, mean DWT was 3.83 ± 3.43 mm, mean BV was 228.31 ± 126.12 ml and mean prostate volume was 64.16 ± 31.6 ml. Due to normal distribution of BV, patients were categorized as less than 120 ml (6 pts), between 121–272 ml (21 pts) and ≥273 ml (11 pts) with a mean BWT of 6.05 ± 3, 3.75 ± 2.4 and 2.77 ± 2 mm, respectively. DWT showed an inverse correlation with BV ($R^2 = 0.22$ p=0.003, ρ= - 483 p=0.002) and a direct correlation with prostate volume ($R^2 = 0.29$ p=0.30 $\rho = 17$ p=0.30).
Interpretation of results: Like ultrasound exam, measurement of DWT depends on bladder volume.
Conclusions: To compute BWT on MRI, a 121–270 ml urine inside the bladder showed to be the proper volume. That finding is in accordance with previous knowledge based on ultrasound exam.

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38 - Prostate shape and intravesical prostatic protrusion assessed by magnetic resonance imaging are related to urinary symptoms

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Introduction and aim of the study: Magnetic Resonance Imaging (MRI) of the prostate has gained popularity in the field of prostate cancer management. Little is known about the use of MRI in the management of lower urinary tract symptoms (LUTS). Aim of the study was to assess whether prostate features on MRI can be related to LUTS.
Materials and methods: Patients who underwent MRI for clinical suspicion of PCA were evaluated for LUTS through International Prostatic Symptoms Score (IPSS) and uroflowmetry. Prostate Volume (PV), Detrusor Wall Thickness (DWT) and Intravesical Prostatic Protrusion (IPP) were measured respectively by using conventional prolate ellipsoid formula, as the mean of thickness of the anterior–posterior and dome bladder walls, as the vertical distance from the tip of the protruding prostate to the base of the bladder. Prostate shape was classified in accordance to previously reported classification of Randal as follows: type 0, an

equal to or less than 25 cm^3 prostate showing little or no zonal enlargement; type 1, bilateral TZ enlargement; type 2, retrourethral enlargement; type 3, bilateral TZ and retrourethral enlargement; type 4, solitary or multiple pedunculated enlargement; type 5, pedunculated with bilateral TZ and/or retrourethral enlargement; type 6, subtrigonal or ectopic enlargement; and type 7, other combinations of enlargements Pearson correlation coefficient was computed to text the association between MRI features and IPSS and Qmax (pearson 0.65 p = 0.001).

Results: 38 mpMRI were reviewed by urology-dedicated radiologist. Mean age of patients was 61.9 ± 25.2 years. Mean DWT, prostate volume, IPP, IPSS, and Qmax were respectively 3.8 ± 2.05 mm, 64.16 ± 31.6 mm3, 4.5 ± 0.5 mm, 20.13 ± 7.08 points, 15.09 ± 5.35 ml/s. Regarding prostate shape, Randall type 0, type 1, type 2, type 3, type 4, type 5 were found respectively in 3(7.9%), 6(15.8%), 5(13.2%), 12(31.6%),4 (10.5%),8 (21.1%) patients. Interesting, prostate volume, IPP, and prostate shape were significantly correlated to IPSS while only IPP and prostate shape were correlated to Qmax (Table 1).

Interpretation of results and conclusions: Our preliminary data suggest that MRI prostate features may be used as tool to assess the main outcomes related to LUTS, i.e. IPSS and Qmax. Of course, further studies are still required to introduce MRI in the field of LUTS-BPH.

Table 1

	LUTS_IPSS	Qmax
	ρ	ρ
Prostate Volume	0.70*	-0.23
DWT	0.22	0.26
IPP	0.56*	-0.35*
Randal shape type	0.65*	-0.54*
*p<0.05		

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39 - Medications mostly associated with urinary tract infections (UTIs): Assessment of the EudraVigilance (EV) and Food and Drug Administration (FDA) pharmacovigilance databases entries

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Introduction and aim of the study: Medications may have a direct causative role in triggering UTIs. We aimed at identifying 1) which drugs are associated with most UTIs reports; 2) within the high-risk list of drugs, comparing their potential to cause UTIs through a disproportionality analysis.

Materials and methods: The FDA Adverse Event Reporting System (FAERS) database was queried to identify drugs associated the most with UTIs individual reports till June 2021 (Table 1). Only drugs with a minimum of 200 UTIs reports were considered for disproportionality analysis. We recorded the number of UTIs reports for these drugs. Proportional Reported Ratios (PRRs) were used for all the drugs.

Results: Overall, 6152 UTIs reports were identified, 1798 of which (30%) associated with 6 medications which had a minimum of 200 reports each (Table 1). 3178 were E. Coli infections of which 3038 (96%) were serious. 842 were Enterococcal infections (824 (98%) of which were serious). 441 were Pseudomonal infections of which 427 (97%) were serious. 332 were Staphylococcal of which 311 (94%) were serious. Tacrolimus was mainly associated with enterococcal infection (70 events (8%), E.Coli infections (224 events (7%)). Natalizumab was mainly associated with pseudomonal infections (46 events (10%)). Interferon beta1a was mainly associated with Staphylococcal infections (30 events (10%)). Within this group of high-risk medications, Tacrolimus presented higher risk of UTIs as than prednisone (PRR 1,48 (95%CI 1,29–1,71) p<0,01) as than adalimumab (PRR 1,71 (95%CI 1,48–1,99), p<0,01). Serious cases including death were 5902 (96%). On EV database analysis most UTIs reports were for Natalizumab (1433 events). Most reports for Escherichia UTIs were for Tacrolimus and Mycophenolate Mofetil, both with 78 events. Most reports for Enterococcal UTIs were for Natalizumab with 18 events. Most reports for Pseudomonal, Enterococcal and Staphylococcal UTIs were for Natalizumab respectively with 22, 18 and 11 events.

Interpretation of results: 6 drugs were associated with significant reporting levels for infections. Tacrolimus and Natalizumab were responsible for the most reports and generated the strongest signal of disproportionate reporting.

Conclusions: Prescribers should inform those treated with these immunosuppressors about the risk of infections and its sequelae. These results require to be further integrated with clinical evidence.

Table 1
Data are reported as PRR (95%CI), *Statistically significant PRR.

	Tacrolimus	Prednisone	Adalimumab	Mycophenolate mofetil	Natalizumab	Dalfampridine
Tacrolimus		1,48 *	1,71*	1,77 *	2,05*	2,09*
Prednisone	0,67*		1,15 *	1,19 *	1,37 *	1,40*
Adalimumab	0,58 *	0,86 *		1,03*	1,19 *	1,21*
Mycophenolate mofetil	0,56*	0,83*	0,97		2,04 *	2,08 *
Natalizumab	0,49 *	0,72 *	0,84 *	0,86		1,02
Dalfampridine	0,48 *	0,71 *	0,82 *	0,85 *	0,98	

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40 - Should irradiated patients with postprostatectomy incontinence be excluded from fixed sling implantation? A case series and meta-analytic study

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Introduction and aim of the study: Not clear consensus exists on whether previous pelvic radiotherapy is a contraindication for male sling placement in patients with postprostatectomy urinary incontinence (PPI), because of poor functional outcomes. We aimed to perform a retrospective assessment of the prognostic value of the radiotherapy on multiple functional outcomes in our male sling series and estimate the overall effect size of this risk factor based on the best available literature on the topic.
Materials and methods: Consecutive patients with PPI that from Jan. 2013 to Dec. 2020 underwent a fixed, repositioning transobturator sling placement with 12-months minimum follow-up were included. Multiple 12-months continence outcomes were regressed on the index risk factor (radiotherapy) and potential confounders, by univariable and multivariable logistic regression analyses. A systematic literature search and a random-effect meta-analysis were undertaken, including studies reporting adjusted effect measures, to obtain the best pooled estimate of the effect of radiotherapy on sling outcome.
Results: The study included 80 patients (mean age 68.5 ± 5.6 years), of which 19 (23.8%) had previous radiotherapy. Overall 12-months subjective (much-very much improved at PGI-I) and objective (24 h pad test ≤5 g) success, and social continence (≥50% improvement in pad count and ≤2 pads per day) were 76.3%, 61.3% and 80%, respectively. The same figures in irradiated versus nonirradiated cases were 57.9%, 47.4% and 57.9% versus 81.9%, 65.6% and 86.8%, respectively ($p<0.05$ for all comparisons). In our multivariate model, adjusting for age, BMI, comorbidity, incontinence severity and surgical experience, radiotherapy resulted to be an independent predictor of all continence outcomes. The result for social continence (beta 1.3; SE 0.43) was pooled with those extracted from the other six eligible observational studies (overall, 952 patients of which 154 irradiated), yielding an overall odds ratio of 2.69 (95%CI: 1.69–4.28; I2 *=49%; Cochrane Q p=0.07; Z test p<0.001*).
Interpretation of results: Our findings add more evidence on the prognostic value of previous pelvic irradiation in the setting of PPI patients treated with fixed sling implantation. Although the finding must be considered with caution due to methodological heterogeneity among included studies, the likelihood of postoperative failure among irradiated patients is more than double compared to nonirradiated ones.
Conclusions: During the informed consent process, irradiated patients must be made aware about their higher risk of failure after sling surgery, weighing benefits and harms of this treatment in comparison with other options.

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41 - Short-term outcomes of water vapor therapy (Rezum®) for patients with large prostates: An Italian single center study

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Introduction and aim of the study: Current guidelines recommend Rezum® water vapor thermal ablation for prostates <80 cc and little data exist describing outcomes in patients with prostates ≥80 cc. The aim of this study was to evaluate functional outcomes after Rezūm in patients with large prostate glands
Materials and methods: This was a single-center prospective study. Thirty-three patients affected by moderate to severe lower urinary tract symptoms due to BPH undergoing Rezum® were recruited from our urology unit. The preoperative evaluation incuded history, clinical examination, uroflowmetry and post-void residual volume (PVR). Three months after surgery, all patients performed uroflowmety with PVR, completed the International Prostate Symptom Score (IPSS), the International Inventory of Erectile Function (IIEF) and questions 9 and 10 to assess ejaculatory dysfunction. Rates of retreatment and complications were also reported.
Results: The median operative time was 10.5 (IQR 8.7–15) min. All patients were dismissed few hours after surgery with indwelling urinary catheter that was removed after a median of 7 (IQR 7–10) days. The preoperative prostate volume was 137 (84—190) mL and 45.4% of patients were catheter dependent. At 3 months postoperative, the IPSS had decreased significantly by 14 points ($P < 0.001$). The quality of life (QoL) score had decreased by 3.2 points ($P < 0.001$) and the Q max had improved by 7 mL/s ($P < 0.001$) (Table 1). No serious side effects (> Clavien II) were observed. No cases of de novo erectile dysfunction and an anejaculation rate of 10.1% was reported. In the subset of catheter dependent patients, the postoperative catheter free rate was 83%.
Interpretation of results: The short-term outcomes of the Rezum® system were encouraging, with a significant efficacy on urinary symptoms, the possibility of treating chronic urinary retention, respect of the erectile function, conservation of ejaculation as before in 90% of cases and may be an ideal option for men who were medically complex or unwilling to undergo anesthesia.
Conclusions: Rezūm treatment showed optimal early functional outcomes in patients with large prostates. Further studies were warranted to confirm long-term outcomes and explore the possibility of expanding Rezum's inclusion criteria.

Table 1
Pre and Postoperative characteristics of 33 patients treated with Rezum.

Age (years, mean ± SD)	64.3 ± 11.9
Prostate size (cc, mean ± SD)	126.77 ± 47.57

(*continued on next page*)

Table 1 (*continued*).

Psa T (ng/ml, mean ± SD)	2.9 ± 2.7
Preoperative medical treatment for BPH (n. %) Alpha-blocker Alpha-blocker, 5-ARI Alpha blocker, phytotherapic	33 26 (78.7%) 1 (3.03%) 7 (21.2%)
ASA PS score, median, range	2 (1–2)
Lateral lobe treatments median, range	10.3 (4–15)
Median lobe treatments median, range	1.9 (0–5)

	Preoperative	Postoperative	P
Q max (ml/s, mean ± SD)	8.7 ± 4.8	15.5 ± 5.5	<0.001
Post void residual volume, (ml, mean ± SD)	161.09 ± 140.98	63.8 ± 45.6	<0.001
Pre-operative IPSS score, (mean ± SD)	25.4 ± 5.9	11.5 ± 5.0	<0.001
QOL IPSS, (mean ± SD)	4.6 ± 0.9	1.1 ± 1.4	<0.001
Pre-operative IIEF score, (mean ± SD)	19.3 ± 5.8	19.8 ± 5.1	0.22

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42 - Three years outcomes of transperineal laser ablation of the prostate

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Introduction and aim of the study: Ultra-minimally Invasive Surgical Techniques (uMISTs) play an increasingly significant role in the treatment of benign prostatic obstruction (BPO) as an alternative to both medical therapy and more invasive surgical techniques. Transperineal laser ablation of the prostate (TPLA) is a recently developed uMIST that has showed its efficacy in terms of symptoms relief and improvement of urodynamic parameters. It also allows the preservation of the ejaculation and has a low risk of complication.

As for other uMISTs, also for TPLA there is a lack of evidence on a follow-up longer than 12 months. The current series aims to present the results of TPLA within 3 years from the procedure.

The primary endpoints were the International Prostate Symptom Score (IPSS) and maximum flow rate (Qmax).

Materials and methods: TPLA was performed using the Soracte Lite system (EchoLaser X4, Elesta, Calenzano, FI, Italy). It consists in ablating prostate tissue by means of a diode laser energy, eventually causing prostate volume reduction. The procedure was is carried on under local anesthesia. Transperineal needles are placed under US guidance and allow the laser fiber to be accommodate in a safe position.

We recorded IPSS, uroflowmetry parameters, the first three item of the Male Sexual Health Questionnaire (MSHQ-EjD), and prostate volume at baseline and after 3 years.

We used Wilcoxon test to compare continuous variables between two times.

Results: From September 2018 to March 2019, 21 men underwent TPLA. Among these, 20 completed the follow-up until 3 years. The median prostate volume was 41.5 ml (IQR: 40.0–54.3). Preoperative median IPSS, Qmax and MSHQ EjD were 18.0 (IQR: 15.8–21.3), 8.8 ml/s (IQR: 7.8–10.8), and 4 (IQR: 3–8).

After three years all patients showed significant improvement in IPSS (−37.2%; $p < 0.01$) and Qmax (+45.8%; $p < 0.01$). Moreover, prostate volume decreased by −20.4% ($p < 0.01$). Complete data are shown in Table 1.

Interpretation of results: This first mid-term analysis shows that TPLA maintains satisfactory and stable results after 3 years. Therefore, TPLA confirms its role in the treatment of BPO patients unsatisfied or intolerant to oral therapies but not eligible for surgery to avoid severe impact on sexual function or due to anesthetic contraindications.

Conclusions: TPLA is an ultra-minimally invasive treatment for BPO showing stable good functional outcomes.

Table 1
TPLA functional outcomes.

median ± 95% IC (IQR)	Preoperative	3 years	*p*
Qmax (ml/s)	9.0 ± 1.5 (8.0;11.0)	11.0 ± 1.7 (9.0;13.0)	<0.01
RPM	70.0 ± 25.4 (33.0;120.0)	15.0 ± 6.6 (0.0;25.0)	<0.01
IPSS	18.0 ± 1.6 (16.0;21.0)	12.0 ± 1.3 (10.0; 15.0)	<0.01

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Table 1 (*continued*).

QOL	4.0 ± 0.4 (4.0;5.0)	2.0 ± 0.3 (1.0;2.0)	<0.01
MSHQ-EjD (3 items)	4.0 ± 2.0 (3.0;8.0)	11.0 ± 1.4 (6.0;12.0)	<0.01
Volume (ml)	42.0 ± 5.0 (40.0;54.0)	35.0 ± 3.9 (32.0;39.0)	<0.01

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43 - Anticoagulants impact on greenlight treatment of bladder outlet obstruction (BOO) due to benign prostate enlargement (BPE)

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Introduction and aim of the study: Greenlight laser is a valid and safe treatment for BOO due to BPE. Nevertheless, type of treatment, Photoselective Vaporization of the Prostate (PVP) vs Greenlight Laser Enucleation Prostate (GreenLEP) and outcomes may differ due to anticoagulants use. Study aim is to evaluate their impact on Greenlight laser techniques and outcomes.

Materials and methods: A multicentric prospective observational study of patients undergoing GreenLEP and PVP was conducted. Patients' preoperative characteristics, including, age, type of treatment, prostate volume, PSA, preoperative haemoglobin and preoperative flowmetry were registered. Minimum follow-up was 12 months. Post-operative patients' characteristics, including objective and subjective outcomes such as PGI-I and IPSS were recorded. Complications were classified according to Clavien Dildo scale. Patients were then divided according to anticoagulants use and then compared for statistical analysis.

Results: A total of 366 patients were enrolled and had a complete data-set. Median follow-up was 15 (12–18) months with no drop-out. Group 1, (241 pts) used none anticoagulants, while Group 2, (125 pts) maintained them. Groups were comparable except for age (p<0.001) and IPSS (p=0.006), which were higher in Group 2. Interestingly, there were no differences in type of treatment choice between groups (PVP 43.2% vs 53.6, in Group 1 and 2 respectively, p=0.057).

Regarding post-operative results, reassumed in Table 1, there were no outcomes differences according to anticoagulants use, including subjective and objective outcomes or complication rate. Moreover, no Clavien Dindo complication greater than 2 was recorded. In addition, no blood transfusion or urinary incontinence case was reported.

Interpretation of results: In our case series, anticoagulants do not affect GreenLight outcomes and the choice between GreenLEP or PVP. Indeed, patients which have no interruption of these drugs intake, would be preferred by surgeons to undergo PVP, due to the lower risk of bleeding. Nevertheless, complications rate and haemoglobin drop are comparable. Nevertheless, study design does not allow definitive conclusions.

Conclusions: According to our experience, anticoagulants use has no impact on GreenLight techniques and outcomes. Further randomized studies are mandatory to assess these findings.

Table 1
Pre- and Post-operatory patients' characteristics according to anticoagulants use.

		No anticoagulants (n=241)	Anticoagulants (n=125)	p
Age, years		**67 (62–72)**	**70 (65–75)**	**<0.001**
Type of Surgery	PVP	104 (43.2%)	67(53.6%)	0.057
	GreenLEP	137 (56.8%)	58 (46.4%)	
Surgical Time, minutes		50 (40–70)	50 (40–67)	0.565
Time of Laser Use, minutes		25 (18–33)	24 (15–35)	0.400
Delivered Energy, KJ		230.0 (166.0–315.0)	212.5 (142.0–330.0)	0.481
Pre-operatory PSA, ng/ml		2.54 (1.31–4.00)	2.40 (1.38–3.55)	0.612
PSA at 12 months, ng/ml		1.10 (0.75–2.00)	1.00 (0.60–2.10)	0.803
Prostate Volume, ml		60 (45–74)	60 (50–80)	0.464
Pre-operatory Haemoglobin		14.8 (14.0–15.5)	14.6 (13.3–15.4)	0.459
Post-operatory Haemoglobin		14.1 (13.2–15.0)	14.0 (13.0–15.0)	0.520

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Table 1 (*continued*).

Pre-operatory flowmetry,ml/s	9.0(7.5–11.0)	9.0 (8.0–11.0)	0.437
Flowmetry at 12 months,ml/s	21.0 (17.0–25.0)	21.3 (18.0–25.0)	0.972
Pre-operatory IPSS	**22 (18–26)**	**24 (22–27)**	**0.006**
IPSS at 12-months	6 (5–8)	6 (5–7)	0.611
PGI-I	1 (1–2)	1 (1–2)	0.478
Complications	41 (17.0%)	25 (20%)	0.598
Acute Urinary Retention	21 (8.7%)	4 (3.2%)	0.083

Legend: PVP = Photoselective Vaporization of the Prostate; GreenLEP = Greenlight Laser Enucleation Prostate; PSA = Prostate Specific Antigen; IPSS = international prostate symptom score; PGI-I = patient global impression of improvement; categorical variables are reported as n (%), continuous variables as median (interquartile range).

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44 - Bladder catheter indwelling and greenlight prostate surgery outcomes

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Introduction and aim of the study: Bladder catheter indwelling due to Acute Urinary Retention (AUR) is one of the most fearsome complications of untreated male LUTS for Bladder Outlet Obstruction (BOO). Indeed, surgical treatment for these patients is indicated and Greenlight Laser may be applied. Study objective is to compare Greenlight outcomes according to preoperative bladder catheter indwelling.

Materials and methods: A prospective study of patients undergoing Greenlight surgery in different Italian centres was defined. All patients' pre-, intra- and post-operative characteristics were recorded and minimum follow-up was 12 months. In particular, we retrieved day of bladder catheter removal and complications, which were classified according to Clavien Dildo scale. According to preoperative bladder catheter presence, patients were divided in 2 groups (Group 1 no catheter, Group 2 catheter) and statistical comparisons were conducted.

Results: From all centres, a total of 366 patients were enrolled and had a complete data-set. Median follow-up was 15 (12–18) months and none was lost. Group 1 had 318 pts, while Group 2 48. Group 2 differed for higher PSA (p=0.018) and age (p=0.018), while type of surgery was comparable.

When compared according to indwelling bladder catheter presence post-operative flowmetry at 6 (p<0.001) and 12 months (p=0.008) and pre- and post-operative haemoglobin (p=0.013 and 0.050 respectively) values were higher in Group 1. All results are reassumed in Table 1.

Interpretation of results: According to our study results, patients with an indwelling catheter are more likely to be older and with higher PSA values. Indeed, the possible effect of indwelling catheter is not limited to that, but also on the inflammation that can cause, which is then reflected to lower post-operative haemoglobin values. Moreover, bladder which severely suffered due to BOO and went to AUR were less likely to recover, as it emerges from long term flowmetry, beside patients' satisfaction was similes. However, study design and small sample size do not allow definitive conclusions.

Conclusions: In our experience, indwelling catheter presence has an impact on intra and post-operative outcomes of Greenlight prostate surgery. Further studies are mandatory to assess these results.

Table 1
Pre- and Post-operatory patients' characteristics according to indwelling bladder catheter presence.

		No anticoagulants (n = 318)	Anticoagulants (n = 48)	p
Age, years		**68 (62–74)**	**70 (66–78)**	**0.018**
Type of Surgery	PVP	143 (45.0%)	28 (58.3%)	0.061
	GreenLEP	175 (55.0%)	20 (41.7%)	
Surgical Time, minutes		50 (40–65)	60 (45–70)	0.068
Time of Laser Use, minutes		24 (17–33)	27 (19–37)	0.718
Delivered Energy, KJ		220.0 (150.0–319.0)	250.0 (170.0–336.0)	0.418
Pre-operatory PSA, ng/ml		**2.42 (1.26–3.60)**	**3.83 (2.25–6.00)**	**0.018**
PSA at 12 months, ng/ml		1.10 (0.70–2.00)	1.09 (0.47–2.30)	0.803
Prostate Volume, ml		60 (45–75)	60 (50–85)	0.882
Pre-operatory Haemoglobin		**14.8 (14.0–15.5)**	**14.2 (13.0–15.2)**	**0.013**
Post-operatory Haemoglobin		**14.1 (13.2–15.0)**	**13.6 (13.0–14.7)**	**0.050**
Pre-operatory available flowmetry, ml/s		9.0 (8.0–11.0)	9.0 (6.5–11.0)	0.895

(*continued on next page*)

Table 1 (*continued*).

Flowmetry at 6 months, ml/s	**19.0 (17.0–22.0)**	**17.0 (16.0–18.0)**	**<0.001**
Flowmetry at 12 months, ml/s	**22.0 (18.0–25.0)**	**20.0 (15.0–21.0)**	**0.008**
Pre-operatory IPSS	23 (19–26)	24 (20–27)	0.209
IPSS at 12-months	7 (5–8)	7 (6–8)	0.970
PGI-I	1 (1–2)	1 (1–2)	0.673
Early Complications	58 (18.2%)	8 (16.7%)	0.577
Acute Urinary Retention	21 (8.7%)	4 (3.2%)	0.937

Legend: PVP = Photoselective Vaporization of the Prostate; GreenLEP = Greenlight Laser Enucleation Prostate; PSA = Prostate Specific Antigen; IPSS = international prostate symptom score; PGI-I = patient global impression of improvement; categorical variables are reported as n (%), continuous variables as median (interquartile range).

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45 - Post-voided residual urine ratio is a predictor of detrusor underactivity in men with lower urinary tract symptoms: Development of a clinical nomogram

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Introduction and aim of the study: Recently some authors have suggested a possible role of post-void residual ratio to predict detrusor underactivity (DU). Aim of our study is to confirm the correlation between post-void residual urine ratio (PVR-R) and DU diagnosed by pressure-flow studies (PFS) in males with lower urinary tract symptoms (LUTS) and to develop a clinical nomogram.

Materials and methods: A consecutive series of patients aged 45 years or older **with non-neurogenic LUTS were prospectively enrolled. Patients underwent standard diagnostic assessment for DU including** International Prostatic Symptoms Score, uroflowmetry, urodynamic studies (cystometry and pressure-flow studies), suprapubic ultrasound of the prostate and ultrasound measurements of the bladder wall thickness (BTW). PVR urine and the percentage of PVR to bladder volume (voided volume+PVR) (PVR-R) were evaluated. Logistic regression analysis was used to investigate predictors of DU defined as bladder contractility index (BCI)<100. A nomogram to predict DU based on the multivariable logistic regression model was then developed. Discrimination and net benefit of the model was evaluated.

Results: Overall 335 patients with a mean age of 66 ± 11 years were enrolled. Overall, 195/335 (58%) presented DU on PFS. In a multivariable logistic age-adjusted regression model BWT (odds ratio [OR]: 1,33 per mm; 95% confidence interval [CI], 1,01–1,75; p=0.043), PVR-R (OR: 0,98 per mL/s; 95% CI, 0,97–0,99; p=0.004) and prostate volume (OR: 1,01 per mL/s; 95% CI, 1,00–1,02; p=0.008) were significant predictors for DU (Fig. 1). The model presented an accuracy of 0,63 and a clinical net benefit in the range of 25–80%.

Interpretation of results: The present study confirms the important role of PVR-ratio in the prediction of DU.

Conclusions: For the first time we present a clinical nomogram including PVR-ratio for the prediction of DU. External validation is needed before clinical implementation.

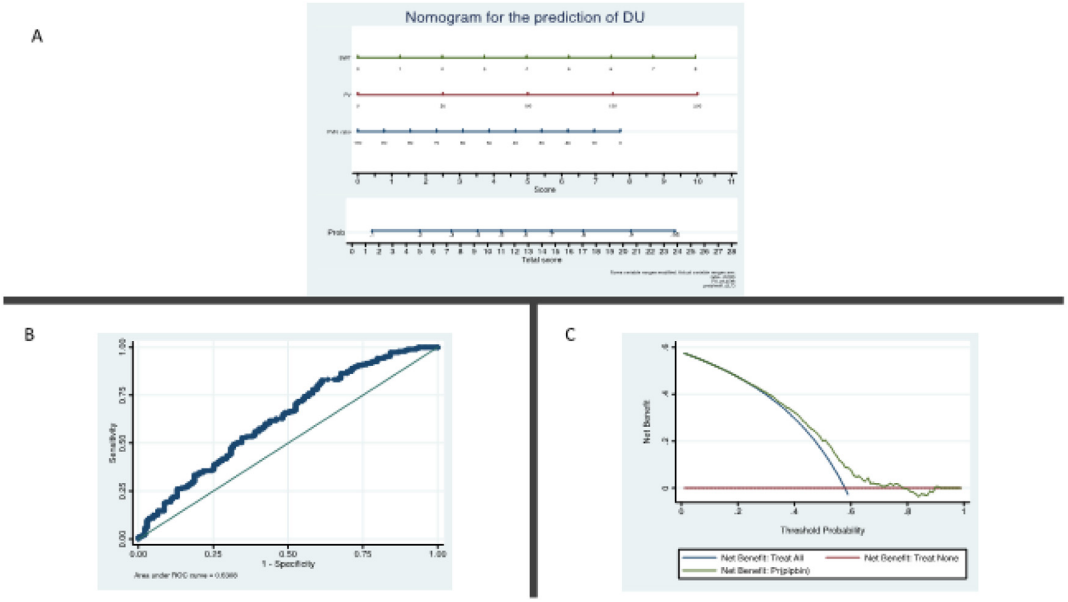

Fig. 1. A Nomogram, B: ROC curve, C: Decision Curve Analysis.

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46 - Medications mostly associated with urinary retention: Assessment of the EudraVigilance (EV) and the Food and Drug Administration (FDA) pharmacovigilance database entries

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Introduction and aim of the study: Drugs may have a direct causative role in triggering urinary retention (UR). The range of medications which may be responsible for urinary retention is wide but little is known on those which are most frequently involved. We aimed at identifying 1) which medications are associated with most urinary retention reports; 2) within the high-risk list of medications comparing their potential to cause urinary retention through a disproportionality analysis.
Materials and methods: The Food and Drug Administration (FDA) Adverse Event Reporting System (FAERS) database was queried to identify the drugs which were associated the most with urinary retention individual reports till 30 June 2021 (Table 1). Only those drugs with a minimum of 350 urinary retention reports were here considered for disproportionality analysis. Sixteen drugs were identified. We recorded the number of urinary reports for these sixteen drugs in EudraVigilance (EV) database. EV database is the system for managing and analyzing information on suspected adverse reactions to medicines which have been authorized or being studied in clinical trials in the European Economic Area (EEA). Proportional Reported Ratios (PRRs) were computed for all the drugs individuated in this way.
Results: Overall, in the FDA database 28637 reports were identified, 6814 of which (24%) were associated with those sixteen medications which had a minimum of 350 reports each (Table 1). The risk of UR is low for all the medications reported (<3%). Within this group of high-risk medications, Mirabegron presented highest risk of urinary retention 594 events however it was a very low rate of 2,07 (Table 1). Mirabegron presented higher risk of urinary retention when compared to fesoterodine (PRR 1,39 (95%CI 1,22–1,57), p<0,01) and solifenacin (PRR 1,65 (95%CI 1,45–1,88), p<0,01). Most of the reported urinary retention for drugs were present in the 18–64 range of age: a total of 10277 (36%) events.
Interpretation of results: Sixteen drugs were here identified as being associated with significant reporting levels for urinary retention.
Conclusions: Lack of data on the clinical setting as well as on the dosage limits our findings. However, clinicians should carefully consider this list of drugs in patients at increased risk of UR.

Table 1
Urinary retention adverse events.

AEs	EV	FDA-FAERS
Total		28637
Mirabegron	925	594 (2,07%)
Tiotroprium Bromide Monohydrate	259	546 (1,91%)
Interferon Beta-1a	118	511 (1,78%)
Pregabalin	594	463 (1,62%)
Fesoterodine fumarate	1534	438 (1,53%)
Risperidone	338	418 (1,46%)
Adalimumab	48	416 (1,45%)
Tamsulosin hydrochloride	321	411 (1,44%)
Fentanyl	281	398 (1,39%)
Sertraline hydrochloride	218	398 (1,39%)
Duloxetin hydrochloride	490	396 (1,38%)
Olanzapine	286	381 (1,33%)
Venlafaxine hydrochloride	392	370 (1,29%)
Fluoxetine	79	362 (1,26%)
Solifenacin	543	360 (1,26%)
Natalizumab	86	352 (1,23%)

Data are presented as n (%) or PRR (95%CI), p

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47 - Factors predicting successful sacral neuromodulation: The experience of an Italian tertiary referral centre

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Introduction and aim of the study: Sacral neuromodulation (SNM) is a treatment for several pelvic dysfunctions. Since SNM is expensive, the definitive system is implanted after some evaluative steps. Many studies tried to identify factors predicting SNM success, but none have proposed a specific tool yet.
This study aimed to analyse the cases addressed to SNM pathway by a tertiary referral centre and identify factors predicting SNM outcomes.
Materials and methods: After approval by our Institutional Review Board, we performed a retrospective analysis of data of patients undergoing SNM pathway by our centre from Jan 2010 to Dec 2020. We evaluated factors predicting treatment success (Table 1). A nomogram was constructed considering factors which were independently associated with the outcomes. The nomogram predictive ability was tested using concordance index and compared with several advanced models obtained through machine learning algorithms. Based on this nomogram, an application software was developed to estimate rapidly the predicted success rate.
Results: The study considered 536 cases undergoing PNE for different indications: overactive bladder (OAB), urinary retention (UR), and chronic pelvic pain (CPP). Univariate analysis highlighted female gender, younger age, and SNM indication (OAB > UR and CPP) were significantly correlated with the treatment success. Considering these variables, we built a nomogram (Fig. 1) with a valid predictive ability (concordance index = 0.744). The logistic regression model showed comparable accuracy, sensitivity, and specificity to sophisticated statistical models. Based on the nomogram an application software was successfully built.
Interpretation of results: Our nomogram with the associated application software could guide clinicians to refer patients straightforward to definitive SNM implant in favourable cases (e.g., young women suffering from OAB) and to perform patient counselling furnishing realistic expectations about this procedure, especially in subjects with low success rates (e.g., old men with UR or CPP). This is in line with the ethical rules of an appropriate informed consent and with a patient-centred care to avoid unrealistic expectations and reduce the risks of medico-legal issues.
Conclusions: This study suggested gender, age and pelvic dysfunction type were factors predicting SNM success. We validated a nomogram which could be used easily in routine clinical practice, also thanks to the application software.

Table 1
Univariate analysis of pre- and intraprocedural variables considered to highlight factors predicting successful treatment. The multivariate analysis included variables that proved to be statistically significant ($p < 0.05$) with the univariate analysis.

Variables	Univariate analysis		Multivariate analysis	
	OR (95% CI)	P value	OR (95% CI)	P value
Sex		<0.001		<0.001
- Female	Reference		Reference	
- Male	2.553 (1.792–3.638)		2.641 (1.798–3.881)	
Age (years)	0.961 (0.950–0.973)	<0.001	0.962 (0.950–0.974)	<0.001
BMI (kg/m^2)	0.966 (0.917–1.017)	0.182	–	–
Current smoker	0.761 (0.536–1.082)	0.129	–	–
Indication				
- OAB	Reference		Reference	
- UR	3.741 (2.159–6.481)	<0.001	4.863 (2.651–8.918)	<0.001
- CPP	1.873 (1.145–3.065)	0.012	1.951 (1.149–3.312)	0.013
Neurological disorder	1.345 (0.918–1.970)	0.128	–	–
Diabetes mellitus	1.257 (0.297–5.314)	0.756		
Hypertension	1.223 (0.860–1.740)	0.263		
CAD	3.033 (0.337–27.320)	0.322		
OAB			–	–
- UF pre test	0.877 (0.716–1.074)	0.205		
- UIEs pre test	1.080 (0.835–1.397)	0.558		
UR cases			–	–
- CICs/die pre test	0.881 (0.710–1.093)	0.248		
CPP cases			–	–
- VAS pre test	1.406 (0.818–2.415)	0.218		
PNE test, OT	0.994 (0.967–1.021)	0.653	–	–
PNE test, side			–	–
- Right	Reference	0.615		
- Left	1.092 (0.775–1.539)			

Acronyms: BMI = body mass index; CAD = coronary artery disease; CI = confidence interval; CIC = clean intermittent catheterization; CPP = chronic pelvic pain; OAB = overactive bladder; OR = odds ratio; OT = operative time; PNE = peripheral nerve evaluation; UF = urinary frequency; UIE = urinary incontinence episodes; UR = urinary retention; VAS = visual analogue scale.

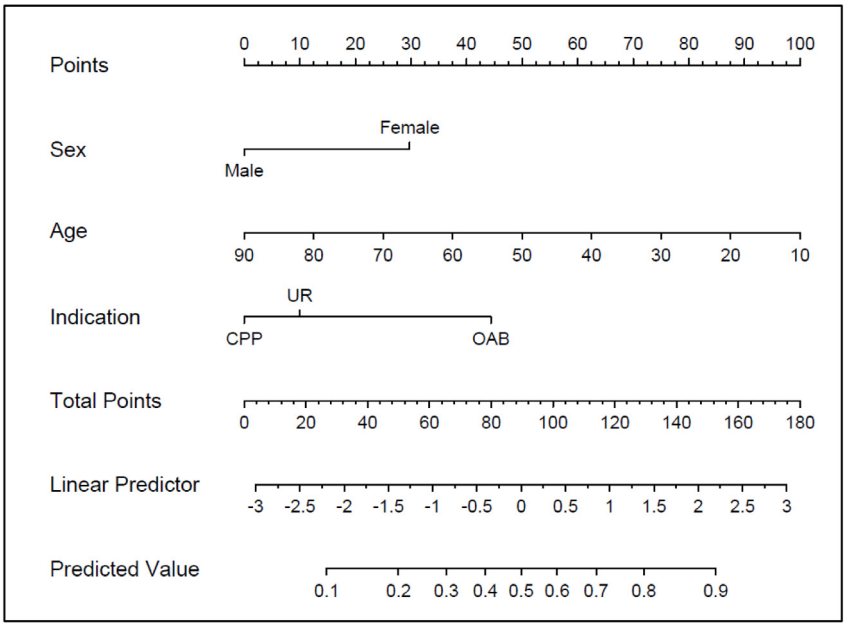

Fig. 1. Nomogram to predict the success of sacral neuromodulation, based on sex, age, and primary indication for treatment.
Acronyms: CPP = chronic pelvic; OAB = overactive bladder; UR = urinary retention.

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48 - Multiple sclerosis related LUTS and sexual dysfunctions negatively impact on marital relationship

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Introduction and aim of the study: Multiple sclerosis (MS) is an autoimmune progressive neurological disease with a diverse range of urological symptomatology, since most MS patients experience one or more moderate to severe urinary symptoms, as well as bladder and/or sexual disorders. The severity of LUTS and their presentation may show considerable variation among MS patients as a result of the multifocal and diffuse involvement of the CNS. Roughly 70% of MS patients indicated that they experienced a moderate or severe impact on their quality of life as a result of LUTS [1]. Aim of the study is to evaluate the impact of LUTS and sexual dysfunctions in MS male patients in their marital relationship.

Materials and methods: After local IRB approval, all MS male patients arrived to our attention were prospectively enrolled in the study. All Patients were evaluated with Expanded Disability Status Scale (EDSS) (Kurtzke JF, 1983), IIEF-5 for sexual function, ICIQ-MLUTS for urinary function, Dyadic Adjustment Scale (DAS) for marital relationship. The data were analyzed using descriptive and inferential statistical tests in STATA/MP14.

Results: Forty consecutive male patients with a diagnosis of MS were included in this study. All patients had some grade of lower urinary tract symptoms (LUTS). 55% (n=22) of the patients had urinary incontinence (UI). 52.5% (n=21) of patients with MS reported urge urinary incontinence (UUI). 20% (n=7) of patients with MS reported mixed urinary incontinence (MUI). Neurological deficit measured by EDSS was found to positively correlate with LUTS ($r=0.38$, $p<0.01$) and negatively correlate with DAS ($r=-0.43$, $p<0.01$) and IIEF-5 ($r=-0.29$, $p<0.01$). The grade of LUTS negatively correlate with the IIEF-5 ($r= -0.39$, $p<0.01$). Moreover, multiple logistic regression analysis confirmed that there was a higher probability of relationships problems (DAS) among patients with MS and a high EDSS score [−5.9 (95% C.I. −10.92969 −0.908043), $P < 0.05$].

Interpretation of results and conclusions: This initial study in a small number of patients demonstrated the large negative impact that LUT and sexual dysfunctions due to multiple sclerosis have on patients' marital relationship, as measured by the DAS. This approach is new in the literature and demonstrates the need for a multidisciplinary patient approach in the management and follow-up of a MS patient. A more extensive study on a greater number of patients is certainly necessary in order to have even more corroborating data.

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49 - Reporting the outcome of the abstracts presented at the National Congress of the Italian Society of UroDynamics: All that glitters is not gold

Cosimo De Nunzio [1], Antonio Nacchia [2], Riccardo Lombardo [1], Carmen Gravina [1], Beatrice Turchi [1], Olivia Alessandra Voglino [1], Antonio Franco [1], Andrea Tubaro [1]. [1] *Sapienza Università di Roma, Azienda Ospedaliero-Universitaria Sant'Andrea, U.O.C. Urologia, Roma, Italia;* [2] *IRCCS - CROB, U.O. Urologia, Rionero in Vulture, Italia*

Introduction and aim of the study: Aim of our study was to explore how many abstracts submitted and presented at the Italian Society of UroDynamics (SIUD) Congresses were then published.
Materials and methods: We retrospectively analysed all abstracts submitted and presented at the Italian Society of Urodynamics (SIUD) Congresses from 2017 to 2021. Then we searched for them as articles on PUBMED, MEDLINE and GOOGLE SCHOLAR. We collected data about authors, time to publication, type of journal and its impact factor at time of publication.
Results: 384 abstracts were collected. 282 (73%) of them were written by Urologists, 86 (22%) of them by Gynaecologists and 16 (5%) by Physiatrists or other specialists. 12 (3%) works were already published as articles before being presented at the Congress. 43 (11%) abstracts were then published as articles in a median time of 11 months. 31 (72%) of them were published on urological journals, 10 (23%) of them on gynaecological journals and 2 (5%) of them on other journals. Median impact factor of Journals was 2,36.
Interpretation of results: Only a low percentage of abstracts accepted at the National Congress of Urodynamics is then submitted as a full manuscript.
Conclusions: Several mechanisms should be considered and the discussion is still open on how to improve the quality of these abstracts and the subsequent preparation of a full manuscript.

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50 - Functional outcomes of total intracorporeal Y neobladder robot-assisted-radical-cystectomy in tertiary center: Urodynamics findings

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Introduction and aim of the study: Multiple approaches for total intracorporeal neobladder (ICNB) reconstruction have been reported during robot-assisted-radical-cystectomy (RARC), emulating the steps of open surgery or attempting to simplify them. The aim of this study was to describe urodynamics (UD) findings of our robotic Y-ICNB technique.
Materials and methods: We enrolled, in this prospective study, patients affected by MIBC (T1-T4N0-N1M0) from 01/2017 to 06/2021 at our tertiary center. All the patients underwent robotic radical cystectomy (RARC) with Y-ICNB reconfiguration. Continence at 1, 3, 6 and 12 months were evaluated. At the 3rd month of follow-up patients underwent UD. Finally, in a retrospective match paired analysis the functional outcomes of Y RARC patients were compared with a cohort of open Y radical cystectomy.
Results: 45 patients were enrolled. UDs revealed median neobladder capacity of 268 ml, with a median compliance of 13 ml/cm H20; the voiding phase showed a voiding volume and a post void residual (PVR) of 154 cc and 105 cc respectively. At 12 months of follow-up 4.4%, 15.5% and 4.4% of the patients experienced urge, stress and mix urinary incontinence respectively.
Interpretation of results: The comparison between Y RARC and Y open RC revealed a higher neobladder capacity with open approach (268 ml vs 299 ml; p=0.049) with subsequent better findings during the voiding phase in terms of maximum flow (9,2 ml/s vs 13,7 ml/s; p=0.002), voiding volume (154 ml vs 236 ml; p= 0.001) and PVR (105 ml vs 54,7 ml; p=0.01). Focusing on continence recovery, a slight trend in favor of RARC was shown without reaching the statistical significance (Table 1).
Conclusions: Our findings reveal that this kind of total intracorporeal Y neobladder is characterized by satisfying urodynamics functional outcomes as proven by the adequate neobladder capacity, low-pressure storage and high compliance during the filling phase and low post void residual after the voiding phase.

Table 1

	Y RARC	Y open RC	p-value
Filling phase			
Compliance (ml/cm H20), median (IQR)	13 (9–23)	19,9 (8–25)	0.08
Maximum neobladder capacity (ml), median (IQR)	268 (244 –321)	299,7 (250–315)	0.049
Neobladder pressure at maximum filling (ml/cm H20), median (IQR)	25 (15–34)	19,3 (17–33)	0.02
Urinary incontinence provocative maneuvers, number (%)	2 (4.4)	6 (14)	0.2
Voiding phase			
Maximum flow (ml/s), median (IQR)	9,2 (5–11)	13,7 (3-17)	0.002
Voiding volume (ml), median (IQR)	154 (90–230)	236,1 (123–246)	0.001
Post voiding residual (ml), median (IQR)	105 (33–160)	54,7 (50,7)	0.01
Qmax neobladder pressure (ml/cm H20), median (IQR)	13 (10–24)	19,5 (10–32)	0.35

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51 - Relationship between symptoms of underactive bladder syndrome and detrusor underactivity in women with lower urinary tract dysfunction

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Introduction and aim of the study: To assess the relationship between the leading symptoms of underactive bladder syndrome (UAB) and detrusor underactivity (DUA) in women with lower urinary tract dysfunction (LUTD) underwent urodynamics (UD).
Materials and methods: Data on women underwent UD for LUTD between January 2018 and January 2022 were collected.
The recorded leading symptoms of UAB, according to its definition, were: hesitancy, slow stream, straining. Association between the coexistence of these symptoms and DUA was evaluated. Women were identified as DUA when met at least one of the following UD criteria: i) Jeong; ii) Abarbanel and Marcus; iii) BVE criteria; iiii) PIP1 Griffiths. Control group (CG) comprised women with no-DUA. Analysis was performed also in subgroups of DUA women divided according to UD criteria. Statistical analysis included: Chi-square test, T-test.
Results: Data were collected on 686 women: 393 (57.3%) in DUA group, while 293 (42.7%) in CG. Data on the prevalence and relationship between leading symptoms of UAB and all DUA subgroups and CG, and the comparison between DUA subgroups and CG, are reported in table 1. In table 2, data are stratified according to the DUA criteria (see Fig. 1).
Interpretation of results: Less than a half of the DUA women reported concomitant leading symptoms of UAB (40%); this rate was higher, but not significantly, than in the CG (25%). Consequently, coexistent leading UAB symptoms were not associated to DUA diagnosis. Among DUA criteria, these concurrent symptoms were mostly reported by women of the PIP-1 subgroup (76%). Concomitant symptoms were significantly associated to PIP-1, BVE, Arbabanel subgroups, but not to Jeong subgroup. Rate of coexistent symptoms was significantly different among the DUA subgroups, and this finding was likely due to the different characteristics of these parameters. The higher concordance was found between Arbabanel vs BVE and Arbabanel vs PIP-1, due to the lack of significant differences in the rate of concomitant leading symptoms of UAB.
Conclusions: Overall, concomitant leading symptoms of UAB were not associated to DUA diagnosis, but were more common in women with this disorder. A significant association between the occurrence of these concomitant symptoms and DUA diagnosis was found only stratifying patients in subgroups according to specific DUA criteria. This study highlighted how challenging is to diagnose DUA based only on urinary symptoms.

Table 1. Data on the prevalence and relationship between leading symptoms of UAB and DUA groups *vs* control group.

	DUA patients, (mean age: 65.2 ± 13.3)		Control group, (mean age: 56.9 ± 14.3)	p
Hesitancy, slow stream, straining 193/686 (28.1%)	Overall	118/393 (40.3%)	75/293 (25.6%)	<0.3
	Arbabanel	63/118 (53.4%)	75/293 (25.6%)	<0.000
	BVE	55/118 (46.6%)	75/293 (25.6%)	<0.005
	PIP1	90/118 (76.3%)	75/293 (25.6%)	<0.000
	Jeong	34/118 (28.8%)	75/293 (25.6%)	<0.6

Table 2. Comparison among DUA subgroups and multivariate analysis.

		Abarbanel	*BVE*	*PIP1*	*Jeong*
Abarbanel	*vs*	-	*p 0.6*	*p 0.1*	*p 0.01*
BVE	*vs*	*p 0.6*	-	*p 0.02*	*p 0.07*
PIP1	*vs*	*p 0.1*	*p 0.02*	-	*p 0.00*
Jeong	*vs*	*p 0.01*	*p 0.07*	*p 0.00*	-
Multivariate analysis P 0.000					

Fig. 1. Table 1, table 2.

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52 - Complicated and uncomplicated stress urinary incontinence: Which is the influence of detrusor underactivity on functional and surgical outcomes?

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Introduction and aim of the study: To assess the influence of detrusor underactivity (DUA) on functional and surgical outcomes in women undergoing middle urethral sling (MUS) for clinical complicated stress urinary incontinence (C-SUI) or uncomplicated SUI (U-SUI).
Materials and methods: We prospectively enrolled candidates to MUS for SUI from January 2015 to January 2019. C-SUI diagnosis was based on ICS definition of C-SUI. DUA women were females who met at least one of the following criteria: (1) Jeong; (2) Abarbanel and Marcus; (3) BVE criteria; (4) PIP1 Griffiths). Patients were divided in 4 groups: (1) C-SUI with DUA; (2) C-SUI no-DUA; (3) U-SUI with DUA; (4) U-SUI no-DUA. Preoperatively, all women performed urodynamics,

uroflowmetry (UF), post void residual urine (PVR), PVR-ratio (PVR-R=ratio between bladder volume and PVR), ICIQ-FLUTS Questionnaire. Post-operative urinary retention (POUR=occurrence of PVR ≥ 200 ml in ≥ 2 evaluations) was treated with a transient clear intermittent catheterization (CIC) or indwelling catheter (IC) or tape incision after counselling. The follow-up was scheduled each year, and included: physical examination, UF, PVR and PVR-R, ICIQ-FLUTS. All women reached 2-years follow-up. Statistical tests were: *T* student, Q-square.

Results: The 2-years follow-up was completed by 97 women. Table 1 reports population characteristics, table 2 functional and surgical data of C-SUI groups with and without DUA. In table 3 are reported functional and surgical outcomes of U-SUI groups with and without DUA (see Fig. 1).

Interpretation of results: C-SUI was the most common type of SUI. DUA women were mostly in the C-SUI groups. In C-SUI groups, DUA did not affect any functional and surgical outcomes. Only Qmax was significantly higher in C-SUI with no DUA; symptoms and PVR were slightly lower in this latter group. Between U-SUI groups, POUR rate was 4 times higher in DUA group, and consequently also the duration of postoperative catheterization. In these latter two groups, Qmax was the only parameter significantly different (lower in DUA); however, symptoms and voiding emptying were comparable, as also cure rate for SUI.

Conclusions: DUA did not have a significant impact on the findings of C-SUI women, likely because they may also have other disorders affecting functional and surgical outcomes. DUA had a significant impact on postoperative results in the U-SUI group; it is likely that impaired detrusor was the major risk factor for voiding disorders in these females.

Table 1. Studied 4 groups: Complicated stress urinary incontinence (C-SUI) detrusor underactivity (DUA) and no detrusor underactivity (No-DUA); uncomplicated stress urinary incontinence (U-SUI) DUA and No-DUA.

	Complicated SUI, n 64 (66%)		Uncomplicated SUI, n 33 (34%)	
	DUA	No-DUA	DUA	No-DUA
n.	38 (59.4%)	26 (40.6%)	15 (45.4%)	18 (54.5%)
Mean age	63.6 ± 9.4	61 ± 10.7	63.8 ± 9.9	60 ± 11.3
	DUA, 53 (54.6%), mean age 63.6 ± 9.6		**No-DUA, 44 (45.4%), mean age** 59.5 ± 11.1	
	Complicated	**Uncomplicated**	**Complicated**	**Uncomplicated**
n.	38 (71.7%)	15 (28.3%)	26 (59.1%)	18 (40.9%)
Mean age	63.6 ± 9.4	63.8 ± 9.9	61 ± 10.7	60 ± 11.3

Table 2. Functional and surgical data of complicated SUI (C-SUI) patients with detrusor underactivity (DUA) and without DUA (No-DUA).

	Preoperative			Postoperative		
	DUA	No-DUA	p	DUA	No-DUA	p
ICIQ FLUTS	84.9 ± 24.2	79 ± 24.7	0.3	26.3 ± 25.4	16 ± 24.3	0.1
	84.9 ± 24.2			26.3 ± 25.4		0.000
		79 ± 24.7			16 ± 24.3	0.000
Q Max	12.2 ± 4.9	21.2 ± 8.2	0.000	16.7 ± 4.7	23.4 ± 5.9	0.000
	12.2 ± 4.9			16.7 ± 4.7		0.000
		21.2 ± 8.2			23.4 ± 5.9	0.2
PVR	92.3 ± 134.2	56.9 ± 119.9	0.2	27.1 ± 55.9	30.9 ± 47.5	0.7
	92.3 ± 134.2			27.1 ± 55.9		0.007
		56.9 ± 119.9			30.9 ± 47.5	0.2
PVR ratio	0.08 ± 0.1	0.09 ± 0.1	0.7	0.08 ± 0.1	0.09 ± 0.1	0.7
	0.08 ± 0.1			0.08 ± 0.1		1
		0.09 ± 0.1			0.09 ± 0.1	0.4
POUR				6/38 (15.8%)	4/26 (15.4%)	0.7
CIC				3/38 (7.9%)	1/26 (3.8%)	0.9
duration (days)				8.8 ± 49.3	0.2 ± 1.4	0.3
Indwelling catheter				4/38 (10.5%)	4/26 (15.4%)	0.9
duration (days)				0.8 ± 2.3	2.1 ± 6.3	0.2
Tape incision				1/38 (2.6%)	1/26 (3.8%)	0.6
OAB de novo				4/38 (10.5%)	4/26 (15.4%)	0.9
Recurrence IUS				2/38 (5.2%)	1/26 (3.8%)	0.7

Table 3. Functional and surgical outcomes of uncomplicated SUI (U-SUI) patients with detrusor underactivity (DUA) and without DUA (No-DUA).

	Preoperative			Postoperative		
	DUA	No-DUA	p	DUA	No-DUA	p
ICIQ FLUTS	77.5 ± 27.9	78 ± 23.8	0.9	20.2 ± 14.8	11.4 ± 26.8	0.2
	77.5 ± 27.9			20.2 ± 14.8		0.000
		78 ± 23.8			11.4 ± 26.8	0.000
Q Max	12.7 ± 4.6	22.4 ± 5.3	0.000	14.4 ± 7.2	21.1 ± 6.3	0.000
	12.7 ± 4.6			14.4 ± 7.2		0.4
		22.4 ± 5.3			21.1 ± 6.3	0.5
PVR	18.6 ± 38.9	13.3 ± 29.5	0.6	24.1 ± 39.2	23.8 ± 32.5	0.9
	18.6 ± 38.9			24.1 ± 39.2		0.7
		13.3 ± 29.5			23.8 ± 32.5	0.3
PVR ratio	0.07 ± 0.1	0.04 ± 0.1	0.4	0.03 ± 0.08	0.09 ± 0.1	0.07
	0.07 ± 0.1			0.03 ± 0.08		0.2
		0.04 ± 0.1			0.09 ± 0.1	0.1
POUR				4/15 (26.6%)	0/18 (0%)	0.1
CIC				2/15 (13.3%)	0/18 (0%)	0.4
duration (days)				4 ± 10.5	0/18 (0%)	0.1
Indwelling catheter				2/15 (13.3%)	0/18 (0%)	0.4
duration (days)				0.8 ± 2.6	0/18 (0%)	0.2
Tape incision				0/15 (0%)	1/18 (5.5%)	0.9
OAB de novo				0/15 (0%)	1/18 (5.5%)	0.9
Recurrence IUS				0/15 (0%)	1/18 (5.5%)	0.9

Fig. 1. Table 1, Table 2, Table 3.

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53 - Does the female detrusor underactivity cause clinically relevant symptomatic functional impairment?

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Introduction and aim of the study: To assess the symptomatic functional impairment of women with detrusor underactivity (DUA) and lower urinary tract dysfunction (LUTD) underwent urodynamics (UD).

Materials and methods: Data on women undergoing UD between January 2018–January 2022 for LUTD were prospectively collected. Patients were included in DUA group when met at least one of the following UD criteria: (i) Jeong; (ii) Abarbanel and Marcus; (iii) BVE criteria; (iiii) PIP1 Griffiths. Parameters of functional impairment were: voiding symptoms (slow stream — SS, abdominal straining AS), recurrent urinary tract infection as EAU definition (rUTIs), relevant post-void residual urine (PVR > 100 ml). Control group (CG) included women with no-DUA. Patients with concomitant occurrence of voiding symptoms (at least SS, or both SS and AS), rUTIs, and PVR were considered as symptomatic functional impaired women (SFIW). Statistical test were: Chi-square, T-test.

Results: Data were available on 686 women: 393 (57.3%) with DUA, 293 (42.7%) with detrusor normocontractility. Prevalence of SFIW in DUA group and CG, the main characteristics and comparison between these two groups are reported in Table 1.

Interpretation of results: Leading voiding symptoms were not statistically associated to DUA group; however, SS was most common in DUA women, and AS as only voiding symptoms was significantly higher in DUA group. Rate of SFIW (SS, rUTIs, relevant PVR) was significantly higher in DUA group; while a statistical difference between the two groups was not found adding *AS* as further parameter of functional impairment. DUA patients showed a greater rate of relevant PVR, but not of rUTIs. The coexistent occurrence of SS and AS was more commonly reported in CG, likely because DUA women may be less likely to refer AS as a discomfort symptom, using AS as a habitual pattern of micturition. Rates of concomitant SS and rUTIs, SS and PVR, rUTIs and PVR were significantly higher in DUA group, which included the more symptomatic women.

Conclusions: This study showed that DUA was a symptomatic functional disorder characterized by the association of SS, rUTI and relevant PVR. Finding a concomitance of two of the latter conditions can also help identify women at higher risk for an underlying DUA. DUA diagnosis based on only major voiding symptoms was poorly reliable. DUA can cause relevant symptoms due to functional impairment and should be investigated in women who complain of these symptoms and disorders.

Table 1
Characteristics and comparison between women with detrusor underactivity (DUA) and control group.

	DUA	*Control group*	*p*
Mean age yrs (sd)	65.2 ± 13.3	56.9 ± 14.3	–
Overall patients	393/686 (57.3%)	293/686 (42.7%)	0.002
At least one symptom	353/393 (89.8%)	233/293 (79.5%)	0.3
Asymptomatic	38/393 (10.2%)	60/293 (20.6%)	0.000
Slow stream	264/393 (67.2%)	168/293 (57.3%)	0.2
Only slow stream (no other conditions)	96/393 (24.4%)	80/293 (27.3%)	0.5
PVR > 100 ml	140/393 (35.6%)	56/293 (19.1%)	0.000
Only PVR > 100 ml (no other conditions)	18/393 (4.6%)	5/293 (1.7%)	0.07
rUTIs	142/393 (36.1%)	94/293 (32.1%)	0.4
Only rUTIs (no other conditions)	31/348 (7.9%)	23/293 (7.8%)	0.9
Straining	182/393 (46.3%)	144/293 (49.1%)	0.7
Only straining (no other conditions)	33/393 (8.4%)	18/293 (6.1%)	0.03
PVR > 100 ml, rUTIs, slow stream	47/393 (12.0%)	17/293 (5.8%)	0.01
PVR > 100 ml, rUTIs, slow stream, straining	32/393 (8.1%)	14/293 (4.8%)	0.1
Slow stream, straining	58/393 (14.8%)	112/293 (38.2%)	0.000
Slow stream, rUTIs	98/393 (24.9%)	38/293 (13.0%)	0.002
PVR >100 ml, rUTIs	60/393 (15.3%)	23/293 (7.8%)	0.01
Slow stream, PVR >100 ml	109/393 (27.7%)	43/293 (14.7%)	0.001

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54 - Detrusor hyperactivity with impaired contractility: Prevalence and impact on middle urethral sling outcomes

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Introduction and aim of the study: To assess prevalence and outcomes influence of detrusor hyperactivity with impaired detrusor contractility (DHIC) in women undergoing middle urethral sling (MUS) for stress urinary incontinence (SUI).

Materials and methods: Women undergoing MUS for SUI were enrolled in a prospective study from January 2015 to January 2019. Women were divided in a DHIC group and a control group (CG): no DHIC and no DUA, with or without detrusor overactivity. DHIC was defined as detrusor underactivity (DUA) and concomitant detrusor overactivity. DUA was found when woman met at least one of the following criteria: (i) Jeong; (ii) Abarbanel and Marcus; (iii) BVE criteria; (iiii) (PIP1 Griffiths). Preoperatively, all women performed urodynamics (UD), uroflowmetry (UF), post void residual urine (PVR), PVR-ratio (PVR-R) defined as the ratio between bladder volume and PVR, ICIQ-FLUTS questionnaire. Post-operative urinary retention (POUR) was defined as the presence of PVR ≥200 ml in ≥2 evaluations and treated by a transient drainage of the bladder by clear intermittent catheterization (CIC) or indwelling catheter (IC), or tape incision based on counselling. Follow-up was scheduled each year, and included: physical examination and vaginal inspection, UF, PVR and PVR-R, ICIQ-FLUTS. All women included in the analysis reached 2-years follow-up. Statistical tests were: *T* student, Q-square.

Results: Data for assessing DHIC prevalence were available on 97 women: 21.6% (21/97) DHIC, 54.6% (53/97) DUA, 45.4% (44/97) CG. At 2-yrs f-up 65 patients completed the study: 21/65 DHCI (32.3%), 44/65 CG (67.7%). Table 1 reports pre- and post-operative data on two groups.

Interpretation of results: DHIC was found in a non-negligible rate of women. DHIC patients showed a worse bladder emptying; however, these women had no higher rate of POUR. Symptoms were similar in the two groups, likely due to the relevance of SUI symptom for the patients. SUI cure rate was comparable. Interestingly, a significantly higher rate of patients did not report overactive bladder at 2-yrs follow-up in the DHIC group; while in CG the proportion of pre- and postoperative OAB was substantially unchanged.

Conclusions: DHIC is not an uncommon diagnosis in women undergoing MUS for SUI. This condition did not affect functional and surgical outcomes. The rate of OAB is relevantly reduced in women with DHC after MUS.

Table 1
Data on pre- and post-operative women with DHIC and control group.

	Preoperative			Postoperative		
	DHIC Mean age (66.3 ± 11.6)	Control group Mean age: (58.7 ± 12.1)	p	DHIC	Control group	p
ICIQ FLUTS	81.4 ± 29.5	78.6 ± 24.1	0.6	24.1 ± 21.8		0.1
	81.4 ± 29.5			24.1 ± 21.8		0.000
		78.6 ± 24.1			14.2 ± 25.1	0.000
Q Max	10.7 ± 4.2	21.7 ± 7.1	0.000	15.5 ± 5.5	22.5 ± 6.1	0.000
	10.7 ± 4.2			15.5 ± 5.5		0.003
		21.7 ± 7.1			22.5 ± 6.1	0.5
PVR	76.9 ± 127.8	39.1 ± 95.8	0.1	40.1 ± 75.1	28.1 ± 41.8	0.4
	76.9 ± 127.8			40.1 ± 75.1		0.2
		39.1 ± 95.8			28.1 ± 41.8	0.4
PVR ratio	0.2 ± 0.4	0.05 ± 0.1	0.02	0.1 ± 0.1	0.09 ± 0.1	0.7
	0.2 ± 0.4			0.1 ± 0.1		0.2
		0.05 ± 0.1			0.09 ± 0.1	0.006
POUR				5/21 (23.8%)	4/44 (9.1%)	0.3
CIC				3/21 (14.3%)	1/44 (2.3%)	0.2
duration (days)				18 ± 67	0.1 ± 1	0.07
Indwelling catheter				2/21 (9.5%)	4/44 (9.1%)	0.6
duration (days)				0.5 ± 1.8	1.2 ± 4.9	0.5
Tape incision				0/21 (0%)	2/44 (4.5%)	0.8
OAB	21/21 (100%)	19/44 (43.2%)		14/21 (66.7%)	20/44 (45.5%)	0.4
	21/21 (100%)			14/21 (66.7%)		0.06
		19/44 (43.2%)			20/44 (45.5%)	0.9
Recurrence IUS				1/21 (4.7%)	2/44 (4.5%)	0.5

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55 - Coexistent overactive-underactive bladder (COUB) syndrome: A multicentre Italian study

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Introduction: Coexistent overactive-underactive bladder syndrome (COUB) was described as a unique real clinical syndrome by the International Consultation on Incontinence research society for the first time in 2019 and it differs from the simple combination of overactive bladder (OAB) and underactive bladder (UAB) syndromes. No data are available about characteristics of affected population.

Primary aim of the study was the creation of a database including all personal and pathological data of COUB. Secondary aims were the identification of predictive clinical factors for early detection and the role of urodynamic test.

Materials and methods: A multicenter retrospective observational study was performed from January to December 2020. Inclusion criteria were based on clinical evidence of coexistence of OAB symptoms (urgency/frequency and/or urgency urinary incontinence), and symptoms/signs of UAB (sensation of incomplete bladder emptying and/or postvoid residual [PVR] >100 ml and/or Qmax ≤12 ml/s on uroflowmetry in both men and women).

Data included: time of diagnosis, age and sex of patients, aetiology, personal history, BMI, parity in women, previous gynecological surgery, urinary tract infection rate, sexual activity, stage of pelvic organ prolapse, stress/urgency urinary incontinence, urodynamic test, medical therapy, intermittent catheterization, advanced treatments.

Results: A total of 201 patients were included in the study. Demographic analysis was performed by splitting patients into 2 groups by aetiology: 34 neurogenic and 167 non-neurogenic. Neurogenic group presented a lower mean age of diagnosis than other group (p 0.0004), higher PVR (p 0.0002), lower QmaxmaxMQSDsv (p 0.0001), higher rate of constipation (p 0.006) and urgency urinary incontinence (p 0.008). The non-neurogenic group (including predominantly women, p 0.001) showed a higher mean Body Mass Index (p 0.006).

Medical therapy (alpha-blockers, antimuscarinics, mirabegron and their combinations) was successful in 68% of patients (no statistically significant difference between the 2 groups). Comparing groups of treated versus not treated (31.8%) patients, those treated gained more advantages than the others regardless of aetiology (p 0.002). Response to treatment is reported in Table 1.

Table 1

	No treated patients	No improvement (%)	OAB improvement (%)	UAB improvement (%)	OAB + UAB improvement (%)
Medical therapy					
Alpha-blockers	12	8.3 (1)	0	75 (9)	16.7 (2)
Antimuscarinics	64	21.9 (14)	59.3 (38)	0	18.8 (12)
Mirabegron	27	14.8 (4)	18.5 (5)	0	**66.7 (18)**
Alpha-blockers + Antimuscarinics	10	50 (5)	0	0	50 (5)
Alpha-blockers + Mirabegron	5	40 (2)	0	20 (1)	40 (2)
Intravescical Botulinum toxin	12	0	**58.3 (7)**	0	**41.7 (5)**
Sacral neuromodulation	11	9.1 (1)	0	18.2 (2)	**72.7 (8)**
Tibial nerve stimulation	2	0	0	0	100 (2)
OAB treatment	116	23.3 (27)	38.8 (45)	0	37.9 (44)
UAB treatment	78	16.7 (13)	0	26.9 (21)	56.4 (44)
Overall treatment					
OAB	59	23.7 (14)	**76.3 (45)**	–	–
UAB	21	0	–	**100 (21)**	–
OAB + UAB	57	22.8 (13)	–	–	**77.2 (44)**

Intermittent self-catheterization was performed predominantly in neurogenic group (p 0.002). 143 patients underwent urodynamic test: 50.3% showed detrusorial overactivity (DO), 38.5% detrusor underactivity (DU), 15.4% coexistence of DO+DU, 46.1% obstruction.
Multivariate analysis stated lower Qmax, lower rate of POP in women and higher PVR as predictive factors (p 0,0002; p 0,04; p 0,05 respectively).
Interpretation of results: Patients with COUB do not have specific predictive characteristics for this condition, which always requires treatment, often combined. Drug therapy with mirabegron offers better results either alone or in combination and it is the first option for treatment. Intradetrusorial injection of botulinum toxin works excellently on OAB, but surprisingly also in mixed cases; sacral neuromodulation has better results in non-neurogenic patients.
Urodynamic test confirms the coexistence of DO + DU in 15.4% of cases only, losing its pivotal role with more relevance of the clinical diagnosis.
Conclusions: COUB (with or without urodynamic evidence of DO and DU) is not the simple combination of both syndromes and it deserves tailored treatment of the pre-dominant symptoms. Invasive urodynamic test may be necessary in unclear cases or in cases not responding to initial treatment of the most troublesome symptoms.

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56 - Comparison between urethral sphincterotomy and intra-sphincteric botulinum toxin A in the treatment of sphincteric dyssynergia in spinal cord injured patients

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Introduction and aim of the study: Low evidence is available on the efficacy of sphincterotomy and intra-sphincteric botulinum toxin injection in the treatment of detrusor-sphincteric dyssynergia (DSD) in spinal cord inured (SCI) patients. The aim of the present study is to compare the outcomes of sphincterotomy and sphincteric botulinum toxin A (Botox) injection in the treatment of DSD in SCI patients.
Materials and methods: It is a retrospective observational study conducted on consecutive patients affected by neurogenic bladder after SCI subjected to sphincterotomy or intra-sphincteric Botox injection for the treatment of DSD between 2001 and 2019 in a tertiary referral Centre. Included patients underwent previous and subsequent radio-urodynamic studies, demonstrating DSD associated to voiding dysfunction. Residual vesical volume after reflex micturition and maximum detrusor pressure were assessed before and after the surgical procedure. Patients were considered suitable for exclusive reflexed bladder emptying whenever residual volume was <150 ml (clinical success). Chi-squared tests and Mann–Whitney's U tests were used for subgroup analysis.
Results: 18 patients subjected to intra-sphincteric Botox injection and 15 subjected to endoscopic sphincterotomy were included. Median age at surgery was 54 (IQR47-63). Median follow up was and was 180 months in the sphincterotomy group and 40 months in the Botox group, p=0.001. No statistically-significant differences were found between groups in baseline characteristics. Clinical success was achieved in 15 patients subjected to Botox (79%) and 13 subjected to sphincterotomy (93%), p=0.35. Any significant difference was found between median decrease of residual bladder volume after voiding (130 ml vs 150 ml respectively, p=0.72) and of median decrease in voiding detrusor pressure (12.5 cmH20 vs 20 cmH20 respectively, p=0.60). 2 early complications were observed in the Botox group (urinary tract infection) and in 1 in the sphincterotomy group (persistent hematuria). Median duration of clinical effectiveness was 12 months in the Botox injection group and 80 months in the sphincterotomy group (p<0.001).
Interpretation of results: Any statistically significant difference between the main outcomes between the two techniques was found. Complication rate was low in both groups, despite sphincterotomy is a more invasive procedure and requires more operative time and postoperative bladder irrigation. The duration of efficacy of the Botox procedure is lower than sphincterotomy and patients usually requires periodic reintervention. According to our study, the duration of Botox injection is higher than usually reported.
Conclusions: Both sphincterotomy and intra-sphincteric botulinum toxin injection are reliable techniques to address DSD in SCI patients. Given the limited duration of intra-sphincteric botulinum toxin injection, it could be proposed as a test of efficacy before sphincterotomy.

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57 - Infection rate of a prolonged sacral neuromodulation test (8 weeks). A single center experience

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Introduction and aim of the study: Since the introduction of the staged implantation approach [1], it is estimated that 3.8–12.5% of patients develop a device infection during the 2–4 weeks of the Sacral Neuromodulation (SNM) test, leading to removal of the entire system [2,3]. It is possible to prolong the test-phase up to clinician's decision, particularly when benefits are unclear. Aim of our study is to assess the device infection rate in a prolonged SNM test.
Materials and methods: We retrospectively enrolled patients who performed a SNM test in the last 5 years (2017–2021) at our institution, keeping the external temporary stimulator for at least 8 weeks (prolonged SNM test). All procedures were performed by three expert urologists using a standardized technique [4] and the same prophylactic antibiotic protocol: pre-operative single dose of cephazolin 2 grams, iv cephazolin 1 gram per day for the subsequent two days and then oral cefixime 400 mg once/day for 5 days. Levofloxacin was used as an alternative in penicillin-allergic patients. In case of a clinical suspicion of infection, patients started an oral antibiotic therapy, wounds were opened as soon as possible, cultures were obtained and all components were explanted. Patients information (age at implantation, medical history of diabetes, metabolic syndrome, immunological diseases or chronic immunosuppressive therapy), surgical data (operative time, intra-operative complications) and, if present, infection data (timing of onset, symptoms reported, wound culture results) were recorded.
Results: We enrolled 245 patients who underwent a prolonged SNM test. Mean time from lead placement to stage-two was 61.9 days. 6 out of these patients (2.5%) developed a local infection during the test-phase, which led to removal of the entire system. Erythema, pain and pus were the most common signs and symptoms, and time of onset from lead placement was >4 weeks, between 3 and 4 weeks and <2 weeks in 2, 3 and 1 cases, respectively. The gluteal pocket was involved by infection in all cases, and in 2 of these it was also extended to the exit point of the external connection wire. Wound culture was positive for *Staphylococcus Aureus* in all cases, except for one patient whose culture was negative. No significant correlations with clinical or surgical data were found.
Interpretations of results: As far as we know, this is the first series on infection rate of a prolonged test-phase. The majority of infections have occurred after 3 weeks, always involving the gluteal pocket, site of temporary connection. Antibiotic therapy started after clinical signs of infection may explain the negative culture results that could be found on wound swab.
Conclusions: Infection rate of a prolonged 8 weeks-SNM test is low (2.5% of cases), and does not significantly differ from what is reported in literature for a 2–4 weeks SNM test. Staphylococcus Aureus remains the most frequent bacterium involved.

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58 - Urodynamic pattern and neuroanatomical correlates in stroke patients

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Introduction and aim of the study: Lower urinary tract symptoms (LUTS) are common in stroke patients and have a considerable impact on their lives. On admission in the acute state, almost half of an unselected stroke population have urinary incontinence (UI). At 1 year after stroke approximately one third of patients remain incontinent.
Detrusor overactivity (DO) seems to be the most common mechanism in UI after stroke but underactive detrusor and normal urodynamic pattern occur, too [1].
Some studies showed that most of the patients with urodynamic pattern alterations had dominant hemisphere injury [1] but others not observed significant differences in bladder dysfunction produced by stroke in the dominant or the non-dominant hemisphere [2,3].
Aim of this study was to retrospectively investigate urodynamic alterations and their neuroanatomical correlates among patients with stroke.
Materials and methods: Urodynamic studies, brain images, and LUTS were reviewed from consecutive 61 patients (32 males and 29 females) with acute stroke admitted to our Centre.
For statistical analysis were used chi-square and Fisher test.
Results: The patient's average age was 68 years; 54 patients had a ischemic lesion and 7 had a hemorrhagic lesion.
DO was found in 15 of the 20 patients who had parietal lesion, in 23 of the 25 patients who had temporal lesions and in all patients with basal ganglia and frontal lesion.
The only patient with cerebellar lesion had an DO associated with detrusor sphincter dyssynergia (DSD).
No significant differences were found between urodynamics pattern and side of lesion ($P > 0.05$).

Table 1

Side of hemisphere	Men		Women	
	Dominant (18) number of patients	Non Dominant (14) number of patients	Dominant (18) number of patients	Non Dominant (11) number of patients
No symptoms	2	5	0	1
Storage symptoms	13	4	15	5
Emptying symptoms	2	0	2	1
Urinary retention	5	1	4	1
Normal urodynamic pattern	2	1	1	0
Detrusor underactivity or a contractility (DU or DA)	0	0	3	2
Detrusor overactivity (DO)	15	10	13	8
Detrusor overactivity with detrusor sphyncter dyssynergia (DO + DSD)	2	0	1	1
Detrusor overactivity with impaired contractility (DHIC)	1	1	0	0

Results are reported in Table 1.

Interpretation of results and conclusions: LUTS in stroke patients may be associated with different urodynamic patterns, each of which may necessitate different treatment strategies.

In agreement with previous authors we found that DO is the most frequent urodynamic pattern in stroke patients (75,41%). In our study DO was predominant in men, DU was present exclusively in women while DHIC only in men. Furthermore we found that most patients with urodynamic pattern alteration, especially DO, had a dominant hemisphere injury although this difference was not statistically significant.

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59 - Intrinsic sphincter deficiency and urethral hypermobility: Are they independent factors in the causation of stress urinary incontinence?

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Introduction and aim of the study: In according to the Petros and Ulmsten's integral theory the stress urinary incontinence (SUI) is caused by either a combination of intrinsic sphincter deficiency (ISD) and urethral hypermobility. However, it caused by ISD alone is rare whereas urethral hypermobility occurs frequently without SUI. The aim of this study was to correlate the ISD assessed by urodynamic test (UDS) with the urethral hypermobility evaluated by trans labial ultrasound (TLU) in women with SUI.

Materials and methods: This was a prospective study on women with SUI. They were evaluated by TLU e and UDS. Ultrasound was performed by a 3.5–5 MHz curved array probe with the patient at rest and during a maximum Valsalva manoeuvre in the dorsal lithotomy position. The symphysis pubis, was used as a landmark to evaluate bladder neck position and mobility. To assess bladder neck mobility, we measured the distance between the bladder neck and the longitudinal axis of the symphysis. We recorded distances above and below the longitudinal axis of the symphysis as negative and positive respectively. The UDS was done according to the ICS protocol. The VLPP ≤60 cm H2O was used as cut off for the diagnosis of ISD. We divided the patients into three groups: 1) VLPP≤60 cm H2O, 2) 60<VLPP≤90 cm H2O, 3) VLPP>90 cm H2O. All continuous variables were normally distributed. Associations between VLPP data and each of the continuous explanatory variables were summarized as Pearson's correlation coefficients.

Results: From December 2015 to March 2021, a total of 87 consecutive patients with SUI underwent UDS and trans labial ultrasound during preoperative evaluation. Table 1 showed the demographic and clinical data of population. There was no baseline difference between groups in terms of clinical characteristics except for storage symptoms and urgency incontinence. The VLPP was compared to ultrasound data. There was no correlation between indices of hypermobility such as bladder neck descent on Valsalva and VLPP (VLPP ≤ 60, $p = 0.06$; 60<VLPP ≤ 90, $p = 0.7$; VLPP > 90, $p = 0.7$). Funneling of the bladder neck on Valsalva manoeuvre was associated with a lower VLPP (VLPP<60) ($p = 0.026$).

Interpretation of results: The lack of correlation between urodynamic parameters and ultrasound-assessed hypermobility could be explained by the pathophysiology of stress incontinence. Stress incontinence is caused by ISD which can be associated with urethral hypermobility, but not necessarily.
Conclusions: It confirmed that hypermobility and the ISD are largely independent factors in the causation of genuine stress incontinence, even if damage may occur concomitantly.

Table 1
Clinical and demographic characteristics in stress urinary incontinence groups.

Characteristics	VLPP ≤ 60 N=70	60>VLPP ≤ 90 N=10	VLPP > 90 N=7	P value
Age (mean±SD) years	53±12.3	52±10.3	53±15.6	0.09
Body mass index, kg/m2	22.6±1.7	23.8±1.2	25.1±1.9	0.07
Parity median (range)	3 (1–5)	4 (1–5)	3 (1–5)	0.09
Menopause, n (%)	70 (100)	10 (100)	7 (100)	0.9
Smoking, n (%)	25 (35)	9 (90)	2 (28.5)	0.04
Concomitant surgery for POP, n (%)	0	0	0	
Previous anti incontinence surgery, n (%)	0	0	0	
Voiding symptoms, n (%)	0	0	0	
Storage symptoms, n (%)	27 (38)	7 (70)	3 (43)	0.02
Urgency urinary incontinence, n (%)	49 (70)	8 (80)	6 (85)	0.03
Urethrocele at rest	−6.2±14.2	−6.1±13.1	−6.5±15.2	0.9
Urethrocele during maximum Valsalva manoeuvre	−7.1±2.9	−7.3±1.9	−7.5±1.7	0.9
Bladder neck funneling	70 (100)	2 (20)	1 (14)	0.0001
VLPP	55.9±34.2	75.2±21.5	93.2±2.3	0.0001

VLPP: Valsalva Leak point pressure

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60 - Which technique for female urethroplasty to the best available evidence: A single centre experience

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Introduction and aim of the study: Female urethroplasty is still a rarely performed surgery. The objective of urethroplasty is to restore urinary flow, to maintain the urethral axial integrity and to reduce the ischemic damage, in order to avoid complications. The aim of our study was to evaluate the results of 3 different techniques for female urethroplasty in terms of functional results and associated complications.
Materials & methods: From 2017 to 2021, 67 female pts underwent urethroplasty by a single operator (EB). Indications for surgery was urethral stricture in 52 and urethral diverticula in 15. Patients were treated as follows: 13 pts underwent dorsal buccal mucosa graft (BMG) urethroplasty for distal stricture, 39 pts underwent ventral BMG urethroplasty for medium-proximal stricture, 15 pts underwent lateral urethrotomy approach to include the urethral opening of the diverticula, diverticulectomy and lateral urethroplasty with or without fat graft obtained by abdominal liposuction. All patients were investigated with clinical history, physical examination, uroflowmetry, post-voiding residual urine, urethroscopy, magnetic resonance imaging in case of urethral diverticula. All patients referred significant urinary symptoms and dyspareunia.
Results: Mean patients age was 47 yrs (14 to 68 yrs). Mean stricture length was 1,5 cm (1 to 2,5 cm).
48 pts underwent previous urethral dilatations and 8 previous urethral surgery in other places. Mean operative times resulted 70 min (45 to 90 min). Mean BMG lenght was 2 cm (1,5 to 3 cm). Catheter was left in place for 4 weeks after surgery. No perioperative and postoperative complications occurred. All patients recovered a normal urinary flow and sexual function. At a mean follow-up of 27 months (6 to 46), no pts developed any urinary fistula or any grade of definitive incontinence. One patient of dorsal BMG urethroplasty develop restricture after 18 mo and underwent a redo urethroplasty with good result.
Interpretation of results: The latest literature reported a three-dimensional reconstructions of the female urethral sphincter and described it as a superior, horseshoe or omega-shaped part that covers the urethra and an inferior part that covers the anterolateral aspect of the urethra and the lateral aspect of the vagina. With these 3 approach for urethroplasties we avoid the sphincter damage and incontinence.
Conclusions: Our data demonstrate that female urethroplasty is a safe and effective procedure, with optimal functional results and a very low rate of complications, even if further follow-up is needed. There is an urgent need of standardized approaches that may carefully select female patients eligible for this complex surgery.

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61 - New approach with fat grafting in the management of urethro-genital lichen sclerosus disease

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Introduction and aim of the study: Lichen sclerosus (LS) is a chronic inflammatory disease of the skin that often involves the genital area. Patients report significant symptoms: itching, bleeding, pain during sex, skin bruising and tearing. Moreover, patients may refer for obstructive urinary symptoms in case of urethral involvement.

Often patients are subjected to several treatments and surgery still represents a debatable option.

Autologous nanofat grafting (ANG) is a widespread treatment to several pathologies with scars, inflammation, pain. It has been proposed because of its regenerative property due to neovascularization and regeneration of tissues. We report our preliminary results with ANG in the treatment of recurrent LS with genital and/or urethral involvement.

Materials and methods: From 2019 to 2020, 20 pts with recurrent histologically diagnosed LS were treated with ANG injection. All pts underwent previous topic treatments.

By means of lipoaspiration, emulsification and filtering we obtain the fat mixing for injection described by Tonnard in 2013. In our study, 6 female pts underwent ANG for severe genital LS while 5 male pts underwent extended circumcision and ANG for the same disease. Moreover, 6 male pts with urethral strictures underwent first stage with or without buccal mucosa graft urethroplasty and ANG, while 3 male pts underwent dorso-lateral urethral reconstruction with buccal mucosa graft by Kulkarni's technique, first stage penile urethroplasty by Johanson's technique and ANG. All pts were followed with medical assessments and uroflowmetry at 3, 6, 12, 18 months.

Results: Mean age was 65 yrs (25 to 79) Mean stricture length was 9 cm (2 to 18 cm). Mean operative time for ANG was 30 min. After urethroplasty, a 14 Ch Foley catheter was left in place for 5 weeks in long reconstructions while catheter was removed after 2 to 8 days in the short. No peri- or postoperative complications occurred. Mean follow-up was 14 months (6 to 24 mo). After 3 months follow-up, we observed a significant improvement in tissue quality. Patients reported a complete recovery of urinary flow and sexual function, with 17 patients that reported complete resolution of symptoms. In 3 patients initially treated with 5cc ANG, we demonstrated a recurrent stricture after three months. These 3 pts were treated successfully with a second treatment with 20cc of ANG, with good results.

Conclusions: The ANG represents a new promising treatment in the management of LS, opening the opportunity to regenerate tissues instead of substituting them with a graft. It is mandatory to follow the right steps to prepare ANG and adapt the fat grafting to the clinic case. Long-term follow-up with larger series of pts are mandatory in order to better evaluate ANG results.

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62 - Intravescical instillations of hyaluronic acid for the treatment of BPS/IC, results of a large cohort of patients

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Introduction and aim of the study: To evaluate the efficacy of bladder instillations of hyaluronic acid for the treatment of BPS/IC when associated to the standard oral therapy.

Materials and methods: We included all patients with BPS/IC treated with bladder instillations of hyaluronic acid between 01/2018 and 08/2020. The treatment schedule provided 4 weekly instillations, then instillations every 15 days for 5 months and then monthly for a year. All patients completed a 3-days frequency/volume chart before treatment and at last follow-up. Pain symptom was evaluated with the VAS score. The subjective perception of improvement was evaluated with the PGI-I questionnaire, a positive score was defined by a PGI-I score from 1 to 3 (very much better, much better, slightly better).

Results: We treated 104 patients with a median follow-up of 29 months (IQR 14-40); 101 were females, mean age was 59,98 $\pm$ 16 years. Median baseline VAS score was 8 (IQR 8-9), median day-time frequency was 10 (IQR 7-11) and median night-time frequency was 3 (IQR 3-4). At last follow-up we had a median VAS score of 7 (7–8), with a median reduction of the VAS score of 1 point and with only 20% of patients achieving a VAS reduction equal to or greater than 2 points; day-time frequency reduced to a median value of 7 (IQR 6-8) and night-time frequency to 3 (IQR 2-3) (all $p<0.001$). The results of the PGI-I score demonstrated 5.3% of patients reporting a very much better result, 46.8% much better and 36.2% lightly better; globally, 88.3% of patients reported a subjective positive result. No patient discontinued the treatment. During treatment we did not report any adverse event.

Interpretation of results: An intravesical treatment with hyaluronic acid instillations results in a statistically significant reduction in pain and in the diurnal and nocturnal voiding frequency. Pain and voiding frequency reduction seems modest at a first glance; a relatively small difference in VAS score before and after treatment may be statistically but probably not clinically significant. However, the subjective perception of the results evidenced that the benefit is highly appreciated by patients: 88.3% of patients expressed a positive subjective appreciation of the results at PGI-I questionnaire. It should be noted that none of the patients discontinued treatment and all continued with monthly instillations of hyaluronic acid, even in the case of patients who reported slightly better results. A minority of patients did not report a significant benefit from the treatment.

A relevant aspect of our population is the high intensity of pain (baseline VAS score $\geq$ 8), higher than in other studies (mean values 5.86–8).

Conclusions: This study demonstrates that an intravesical treatment with hyaluronic acid results in a statistically significant reduction in pain and in day-time and night-time voiding frequency. The results seem to be highly appreciated by patients, who continue the treatment without interruption.

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63 - Intravescical installations of hyaluronic acid for the treatment of BPS/IC: Predictors of efficacy in a large cohort of patients

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Introduction and aim of the study: To identify predictive factors of clinical response to hyaluronic acid bladder instillations in patients with BPS/IC.
Materials and methods: We included all patients with diagnosis of BPS/IC and treated with bladder instillations of hyaluronic acid between 01/2018 and 08/2020. The treatment schedule provided 4 weekly instillations, then every 15 days for 5 months and then monthly for a year. We collected VAS score and 3-days frequency volume chart at baseline and at last follow-up, PGI-I questionnaire, age, previous episodes of UTI, endoscopic findings on cystoscopy with hydrodistension. Mann Whitney's non-parametric U-test for independent samples and chi-square test were used with an I.C. 95% ($p \leq 0.05$) to identify predictive factor of success (reduction in VAS score, day-time and nigh-time frequency, PGI-I success).
Results: We treated 104 patients with a median follow-up of 29 months (IQR 14–40), 101 were females, 36.5% had a history of recurrent UTI. Mean age was 59,98 ± 16 years. 50% of patients had diffuse glomerulations, 16.6% had Hunner lesions and 51.8% had macrohematuria after rapid bladder emptying. Median anatomical bladder capacity was 700 ml (IQR 550–800 ml); 11.3% of patients had a reduced bladder capacity <400 ml. We found a statistical correlation between PGI-I success and age (p=0.050) and between ΔVAS score and recurrent UTI (p=0.044); the probability of a ≥2 points reduction in VAS score was higher in patients without a history of recurrent UTI (15,8% vs 4,2%) (Table 1).

Table 1
Statistical analysis of predictive factors of clinical success, level of significance p values less than or equal to 0.05.

Clinical success	Predictive factor	p-value
PGI-I success	VS age	**0,050**
	VS anatomical bladder capacity	>0,05
	VS glomerulations	>0,05
	VS Hunner lesions	>0,05
	VS bleeding at bladder emptying	>0,05
	VS recurrent UTI	>0,05
ΔVAS	VS age	>0,05
	VS anatomical bladder capacity	>0,05
	VS glomerulations	>0,05
	VS Hunner lesions	>0,05
	VS bleeding at bladder emptying	>0,05
	VS recurrent UTI	**0,044**
Δ day-time frequency	VS age	>0,05
	VS anatomical bladder capacity	>0,05
	VS glomerulations	>0,05
	VS Hunner lesions	>0,05
	VS bleeding at bladder emptying	>0,05
	VS recurrent UTI	>0,05
Δ night-time frequency	VS age	>0,05
	VS anatomical bladder capacity	>0,05
	VS glomerulations	>0,05
	VS Hunner lesions	>0,05
	VS bleeding at bladder emptying	>0,05
	VS recurrent UTI	>0,05

Legend: PGI-I success = much better, better, lightly better.
Δ = difference between baseline value and value at last follow-up.

Interpretation of results: This work shows that a younger age and the presence of recurrent UTIs are related to a lower response to intravesical instillations of hyaluronic acid. None of the endoscopic aspects of hydrodistension cystoscopy appear to correlate with a different response to therapy. The evaluation of age can be affected by some bias (younger patients may have higher expectations, a lower acceptance of a chronic disease, a lower compliance with long-term therapy). UTI cause a local inflammation, which can contribute to damage to the integrity of the urothelial mucosa and provoke higher pain. Given the apparent lower analgesic effect of the treatment in patients with recurrent UTI, it may be appropriate to optimize analgesic therapy in cases with these characteristics.
Conclusions: Age and the presence of recurrent UTI seem to influence the response to intravescical therapy with hyaluronic acid in terms of PGI-I and VAS score reduction.

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64 - Intravesical sodium hyaluronate (Cystistat®) in patients with recurrent urinary tract infections: A safe strategy of treatment management

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Introduction and aim of the study: To evaluate the outcomes of patients with recurrent lower urinary tract infections (r-UTIs) underwent intravesical sodium hyaluronate (SH, Cystistat®) who have completed treatment.
Materials and methods: This was a prospective study enrolling women with age >18 y.o. with r-UTIs, defined as European Association of Urology guidelines on urological infections, with a diagnosis of r-UTI confirmed by positive urine culture. Women underwent medical and urological history, physical examination and urinalysis and culture. Patients received intravesical SH (i-SH) and retained the drug for a minimum of 30 min. The intravesical instillation was performed using a catheter, under sterile conditions, after the removal of residual urine. i-SH was administered to all patients once weekly for 4 weeks and then once monthly for 6 months. Follow-up was at 1, 3 and 6 months with the 3- day voiding diary, urinalysis and culture and VAS to assess patient's satisfaction to treatment.
Results: We enrolled 33 women patients. Mean ± SD age was 43.3 ± 22.8 yrs. The mean ± SD duration of UTIs before treatment was 2.5 ± 1.7 years. No patients were in antibiotics therapy at the start of SH therapy. The mean ± SD instillation's number was 23.8 ± 6.7. All storage symptoms significantly decreased and VAS score increased at the last follow-up (Table 1). The duration of treatment was 23.1 ± 6.6 weeks. 28/33 (84.8%) patients had no r-UTI at 6- month follow-up, 3 (9.1%) patients had a decrease in the frequency of UTI and 2 (6.1%) women did not response to the therapy. No side effects were reported during or after treatment. 4/33 (12.1%) patients reported a burning discomfort during and immediately after instillations.
Interpretation of results: This study showed that i-SH is a safe and effective treatment for r-UTI. After 6 months of treatment, the vast majority of the patients was cured or significantly improved. No drop-out related to side effect was documented, and the treatment was well tolerated. i-SH allowed to avoid further antibiotics treatments and related toxicity.
Conclusions: To date, there is a growing body of evidence indicating the benefit of i-SH in the treatment and prevention of r-UTI. Our data showed a cure or a relevant improvement in almost all the treated patients, without significant side effects. Also, QoL was relevantly improved. This study documented that i-SH was a reliable alternative management of patients complaining of r-UTI.

Table 1
Urinary symptoms and VAS score before and after SH treatment.

	Pre-Instillation	1 mos Follow-up	3 mos Follow-up	6 mos Follow-up	p
Day-time urinary frequency (mean ± SD)	9.4 ± 3.2	4.4 ± 2.6	3.3 ± 3.2	3.1 ± 2.2	0.000
Night-time urinary frequency (mean ± SD)	3.6 ± 1.6	1.3 ± 1.6	0.9 ± 1.9	0.9 ± 1.7	0.000
Urgency episodes/day (mean ± SD)	6.1 ± 2.3	3.1 ± 1.5	0.6 ± 0.9	0.5 ± 1.2	0.000
UI episodes/ day (mean ± SD)	2.1 ± 1.4	1.1 ± 1.4	0.5 ± 0.9	0.3 ± 0.8	0.000
IVU (No of pts with IVU; %)	33/33 (100%)	11/33 (33.3%)	5/33 (15.2%)	5/33 (15.2%)	0.000
VAS (mean ± SD)	4.7 ± 1.3	5.8 ± 3.1	7.8 ± 0.7	8.1 ± 1.1	0.000

p: Pre-Instillation/6 mos follow-up.

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65 - Transcutaneous tibial nerve stimulation and pelvic floor muscle training in female patients with overactive bladder syndrome: A single-center retrospective cohort study

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Introduction and aim of the study: Overactive bladder syndrome (OABs) is a chronic disabling condition defined as urinary urgency with or without urinary incontinence, increased frequency and nicturia. Conservative therapy through PFMT (pelvic floor muscle training), BT (bladder retraining), ES (electrical stimulation) and BFB (biofeedback) is considered the first-line treatment. PTNS (percutaneous tibial nerve stimulation) is an effective second-line treatment; TTNS (transcutaneous tibial nerve stimulation) seems to be as efficient as PTNS but less invasive, although there are no exhaustive evidences yet. Our aim is to evaluate if TTNS can provide an additional benefit to first-line therapy in patients with OABs.
Materials and methods: A single cohort of female patients affected by OABs belonging to our Incontinence Center between May 2016 and November 2020 was examined. Exclusion criteria were neurological bladder, bladder neoplasm, bladder prolapse > II-degree, urinary tract infections, having not carried out the treatments or interrupted them early. The rehabilitation protocol provided for everyone supervised PFMT with or without ES, BFB and BT. Patients undergone TTNS had 3-weekly sessions for 4 consecutive weeks. Functional outcomes were measured by a 3-day voiding diary and standardised self-reported QoL-questionnaires. The cohort was divided into 2 groups: A (PFMT + TTNS) and B (PFMT). Statistical analysis was carried out using SAS. A bilateral p value <0.05 was considered statistically significant.
Results: In total, 46 patients were enrolled. 24 in Group A, 22 in Group B, median age of 63.3 years (64.8 Group A, 61.7 Group B). In Group A 20 patients (83%) were incontinent, in Group B 19 (86%). Overall, 5 patients presented symptoms following urogynecological surgery. The average follow-up was 10.2 months

in group A and 11.4 in group B. The descriptive characteristics of the 2 groups resulted comparable, with the exception of age ($p < 0.0001$). No complications occurred. Regarding functional outcomes, both groups showed a statistically significant reduction in voiding frequency (Group A from 8.9 to 7, Group B from 8.4 to 7.3), nicturia (Group A from 2.4 to 1.3, Group B 1.7 to 1.2), OAB-screener score (Group A from 30.7 to 22.1, Group B 29.3 to 23.3) and ICIQ-UI SF score (Group A from 9.8 to 9.3, Group B 10.8 to 8.1). All post-treatment results were comparable between the two groups.

Interpretation of results: This study confirms the validity of conservative therapy as a treatment for OABs. On the other hand, additional TTNS does not seem to provide a statistically significant clinical improvement.

Conclusions: TTNS is more feasible and less invasive than PTNS but remains unclear if it may enhance the conventional rehabilitation program in OABs. Further studies on more numerous case series are needed to identify a therapeutic role of TTNS alone or in addition to usual rehabilitation protocol.

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66 - Vaginal delivery may affect genital hiatus? A pilot study

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Introduction and aim of the study: Literature data report that an enlargement of GH may represent a possible marker for pelvic dysfunction and prolapse development. The aim of this pilot study is a prospective analysis to evaluate the antero-posterior and transverse diameter and the area of genital hiatus (GH) among spontaneous vaginal delivery (SVD) and operative vaginal delivery (OVD) after six weeks postpartum.

Materials and methods: We enrolled a total of 40 women between March and December 2021: 20 patients in the group of SVD with a mean age (±sd) of 32 ± 4 and 20 women in the group of OVD (mean age of 34.2 ± 4.1), completed the study. We considered nulliparous women in their first pregnancy. We performed a trans-labial ultrasound examination in order to evaluate GH characteristics 6 weeks after the hospital discharge.

Results: There was no difference about demographic features of age, body mass index, and weight gain during pregnancy among the women of the two groups. Regarding the epidural analgesia during l or II stage of labor, a statistical difference was reported (75% for OVD vs 40% for SVD, $p<0.027$). We found a statically significance for first stage (330.3 ± 160.9 min for SVD vs 147.15 ± 145.89 min for OVD, $p=0.0005$)) and second stage of labor (74.1 ± 10.7 min for SVD vs 21.03 ± 7.37 min for OVD, $p=0.001$). A significant difference was reported for median or medio-lateral episiotomy (35% in SVD vs 70% in OVD, $p=0.028$), but not for vaginal lacerations between two groups. There was a statistical difference for weight (3077 ± 419.7 g for SVD vs 3394 ± 394.4 g for OVD, $p=0.018$) and length of newborns (51 ± 2.03 cm for SVD vs 53 ± 2.38 cm for OVD, $p=0.006$), but not for head circumference. All women underwent an evaluation of pelvic floor 6 weeks after delivery. An ultrasound examination reported a difference between two groups for transversal diameter of pelvis (38,61 ± 5.48 mm for SVD vs 45,1 ± 6.07 mm for OVD; $p=0.001$ and area of GH (17.54 mm^2 for SVD vs 19.99 ± 4.11 mm^2 for OVD; $p=0.003$), but nor for antero-posterior diameter (57.96 ± 9.38 mm for SVD vs 60.68 ± 8.33 mm for OVD; $p=0.55$).

Interpretation of results: Several clinical evaluations reported an association between the increase in the area of the GH and vaginal delivery due to the tissue injury developed during the first and second stage of labor. In our analysis the OVD is related to a larger GH than in SVD with more significant length in transverse diameter of pelvis. In accordance with literature results, OVD is not a significant independent risk factor for changes in GH area, caused by delivery.

Conclusions: The modifications of pelvic floor structure (muscle and connective tissue) and GH cause the possible development of pelvic floor dysfunction, Nevertheless the enlargement of hiatus induced by vaginal delivery, especially OVD is not sufficient, but the continue changes of pelvic structure over the time represents the most significant risk factor for this dysfunction.

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67 - International survey on urodynamic investigations in women undergoing stress urinary incontinence surgery

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Introduction and aim of the study: This worldwide survey had the aim to evaluate the role of invasive urodynamics (UD) in women candidates for stress urinary incontinence (SUI) surgery.

Materials and methods: This was an online worldwide survey on current trends in use of preoperative invasive UD in women undergoing SUI surgery (April–September 2021). Main social media and emails were used to collect data. Demographic respondent's data, whether routine invasive UD is performed before surgery and its diagnostic role were investigated. In some questions more than one answer was possible.

Results: Survey was completed by 504 respondents: urologists 83.1%, gynaecologists 16.8%. A fellowship in female urology/urogynaecology was completed by 49.8%. Age and geographical location of respondents is reported in table 1. Female urology/urogynaecology was practised<10 years by 64.3%. The routine use of UD before SUI surgery is reported in table 2. The components of UD testing are listed in table 3. Table 4 reports the relevance of UD findings for the respondents. UD findings were reported influencing the surgical decision in 84.3% of the cases. Table 5 and 6 report how often UD influences the surgical choice and the UD findings with the greatest impact on surgical management. UD findings may change planned surgery in 72.4%, may discourage it in 43.6%, may change surgical expectations in 55.5%, and are useful for preoperative counselling in 96.6% (see Fig. 1).

Interpretation of results: We found a very low rate (24%) of routine performance of UD for uncomplicated SUI. This data may be a consequence of the recent debate on this topic. The most impactful UD findings were related to the conditions of detrusor contractility, overactivity and underactivity. Among voiding

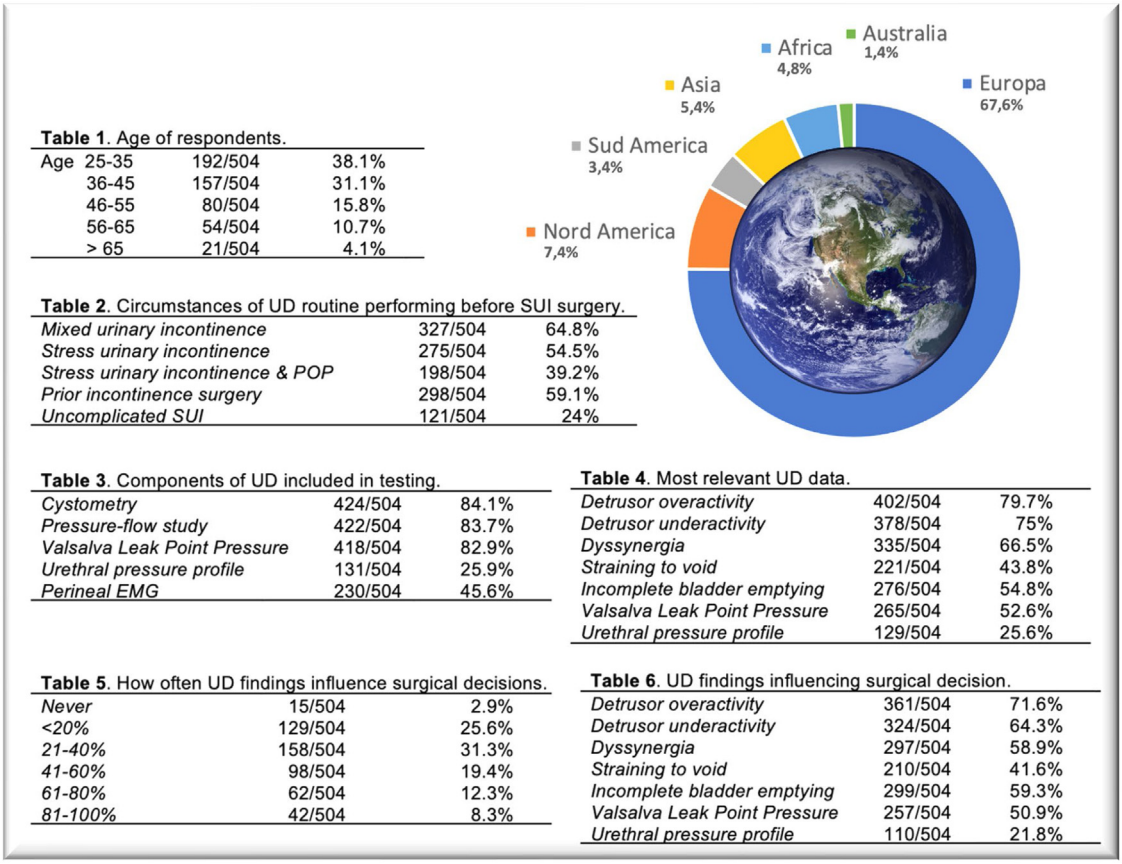

Table 1. Age of respondents.

Age	25-35	192/504	38.1%
	36-45	157/504	31.1%
	46-55	80/504	15.8%
	56-65	54/504	10.7%
	> 65	21/504	4.1%

Table 2. Circumstances of UD routine performing before SUI surgery.

Mixed urinary incontinence	327/504	64.8%
Stress urinary incontinence	275/504	54.5%
Stress urinary incontinence & POP	198/504	39.2%
Prior incontinence surgery	298/504	59.1%
Uncomplicated SUI	121/504	24%

Table 3. Components of UD included in testing.

Cystometry	424/504	84.1%
Pressure-flow study	422/504	83.7%
Valsalva Leak Point Pressure	418/504	82.9%
Urethral pressure profile	131/504	25.9%
Perineal EMG	230/504	45.6%

Table 4. Most relevant UD data.

Detrusor overactivity	402/504	79.7%
Detrusor underactivity	378/504	75%
Dyssynergia	335/504	66.5%
Straining to void	221/504	43.8%
Incomplete bladder emptying	276/504	54.8%
Valsalva Leak Point Pressure	265/504	52.6%
Urethral pressure profile	129/504	25.6%

Table 5. How often UD findings influence surgical decisions.

Never	15/504	2.9%
<20%	129/504	25.6%
21-40%	158/504	31.3%
41-60%	98/504	19.4%
61-80%	62/504	12.3%
81-100%	42/504	8.3%

Table 6. UD findings influencing surgical decision.

Detrusor overactivity	361/504	71.6%
Detrusor underactivity	324/504	64.3%
Dyssynergia	297/504	58.9%
Straining to void	210/504	41.6%
Incomplete bladder emptying	299/504	59.3%
Valsalva Leak Point Pressure	257/504	50.9%
Urethral pressure profile	110/504	21.8%

Fig. 1. Survey results, in some questions more than one answer was possible.

disorders, dyssynergia was considered the most relevant dysfunction. Valsalva Leak Point Pressure was the most reported tool to investigate urethral function. The surgical management was influenced by UD findings in the vast majority of the cases, although about 60% reported that a relevant impact of the UD occurred in less than 40% of the investigations. The crucial effect of UD on surgical management was high. This latter finding showed that for many respondents UD still has a pivotal role before SUI surgery.

Conclusions: This survey showed a worldwide picture on preoperative UD in SUI surgery highlighting the crucial role of UD. UD investigation influences surgical management, but whether it influences outcomes is unclear.

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68 - Large urethral erosion in women who underwent middle urethral sling: Outcomes of surgical repair

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Introduction and aim of the study: We report a consecutive patients series treated for large urethral erosion due to middle urethral sling (MUS) placement for stress urinary incontinence (SUI).

Materials and methods: Women underwent surgical treatment for large urethral erosion due to MUS implantation were prospectively evaluated in our Tertiary Hospital from January 2016 to January 2022. All women underwent preoperative urethrocystoscopy (UCS). Recorded data were: medical and surgical history, symptoms, type of tape. Symptomatic large erosion was defined as the finding of erosion >1 cm involving urethra with one or symptoms: urinary symptoms, urinary incontinence, vaginal discharge, dyspareunia. Surgical data were recorded. Follow-up was scheduled at 1-6-12 month and then yearly, and included vaginal inspection, stress test, post-void residual (PVR) urine by catheterization, uroflowmetry (UF), VAS of subjective satisfaction (VAS >6= satisfaction), urinary symptoms assessment.

Results: Eight women underwent tape removal and urethral reconstruction were recruited. Preoperative data are reported in table 1. Mean follow-up was 25.7 months (range 1–60). In all patients the erosion size was >1 cm (range 1,2–2,5 cm). Outcomes at last follow-up are reported in table 2.

Interpretation of results: Large erosion involving urethra represents a major complication, which may cause urethral fistula, as occurred in half of the patients. Urethral erosion may be present in females with no vaginal tape extrusion. UCS is mandatory to properly diagnose the urethra damage and its size and extension. In case of urethral tape erosion with concomitant continuous leakage, urethral fistula should be supposed. A skilled urethral reconstruction is needed to avoid further complications such as fistula, stricture, voiding LUTS. Only one woman developed de novo SUI treated by bulking agents. All women were subjectively satisfied and resolved urinary symptoms and discomfort.

Conclusions: Large erosion involving urethra represents a challenging condition that should not be underestimated. An early diagnosis may avoid fistula development. Surgical treatment is effective with low risk of de novo SUI occurrence (see Fig. 1).

Table 1. Preoperative data

PREOPERATIVE DATA	Large urethral erosion	Associated fistula
Mean age, range	61.9 years, 43-85	58 years, 43-74
Surgery for SUI:	62.5% (5)	75% (3)
➢ Trans-obturator	25% (2)	25% (1)
➢ Retropubic	12.5% (1)	
➢ Single incision sling		
Tape elasticity	50% (4)	25% (1)
➢ High	50% (4)	75% (3)
➢ Low		
Clinical presentation:	100% (8)	100% (4)
➢ Painful urination	100% (8)	100% (4)
➢ Urgency	50% (4)	100% (4)
➢ Continuous urinary leakage	12.5% (1)	100% (3)
➢ Stress urinary incontinence	100% (8)	25% (1)
➢ Pain at urethra	100% (5)	
➢ Dyspareunia (only in sexually active women)	25% (2)	
➢ Vaginal discharge		
Patients management before urethral erosion diagnosis:	6	
➢ Anticholinergic drugs	1	
➢ Rehabilitation	1	
➢ TENS	1	
➢ Tape incision	1	
➢ Urethral dilatation		
Time elapsed from MUS implantation to erosion diagnosis:	12.5% (1)	25% (1)
➢ 6 months	87.5% (7)	75% (3)
➢ > 1 years		

Table 2. Outcomes data

Post-operative data	
Length of tape removed, min-max	1-7 cm
Erosion recurrence	0
Fistula recurrence	0
SUI de novo	12.5% (1)
Voiding symptoms:	0
➢ Painful urination	65.5% (5)
➢ Urgency	0
➢ Continuous urinary leakage	12.5% (1)
➢ Stress urinary incontinence	0
➢ Pain at urethra	0
➢ Dyspareunia (only in sexually active women)	0
Vaginal discharge	
VAS subjective satisfaction >6	100%
Additional SUI treatment	12.5% (1)

Fig. 1. Preoperative data (table 1) and outcomes (table 2).

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69 - Percutaneous Tibial Nerve Stimulation (PTNS) is female thing… isn't it? Retrospective study on male patients treated by PTNS for lower urinary tract dysfunctions

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Introduction and aim of the study: Available data on Percutaneous Tibial Nerve Stimulation (PTNS) for the treatment of lower urinary tract dysfunctions (LUTD) are mainly obtained from female patients, whilst data on male patients are lacking and focused mainly on the treatment of non-bacterial prostatitis or chronic pelvic pain, so that guidelines on lower urinary tract symptoms (LUTS) in males may not consider this treatment. We aimed to investigate the efficacy of PTNS on male patients affected by different LUTD, including overactive bladder, underactive bladder (UAB) and neurogenic LUTD.

Materials and methods: We included all male patients affected by LUTD treated with PTNS at our center between 2020 and 2021. Exclusion criteria were diabetes mellitus, active urogenital infections, urinary stones or malignancies, missing data or treatment dropout. All patients were investigated by uroflowmetry, invasive urodynamics (cystometry and pressure/flow study), questionnaires (IPSS, OAB-q SF, IIEF5, PEDT). PTNS was administered in weekly 30-min sessions over 12 consecutive weeks. Response to the treatment was defined as a score of 1 (very much better) or 2 (much better) in the 7-grade Patient Global Impression of Improvement (PGI-I) tool.

Results: Thirty male patients were analyzed but 11 were missing data or dropouts and were excluded. Nineteen were thus included in this study: 12 had neurogenic diseases (MS, stroke or spinal injury), 7 had idiopathic LUTS. Mean age was 55 years (range 25–73). Five patients performed clean intermittent catheterization (CIC) (mean 5/day). Four patients (21,0%) presented only bladder filling LUTS, 5 bladder voiding LUTS (26,3%) and 10 both types of LUTS (56,6%). Patients' response to treatment was: "very much better" or "much better" (11 cases, 57.9%), "better" (5 cases, 26.3%) and no change (3 cases, 15.8%). No patient reported a worsening of LUTS. After treatment, mean Qmax improved from 11,5 mL/s to 15,2 mL/s and mean post-void residual (PVR) decreased to a mean of 60 m. CIC/day were reduced in 3/5 patients.

Interpretation of results: We offered PTNS to a mixed population of males with LUTS refractory to medical therapy, comprising UAB and neurogenic LUTD, thus expanding the use of this minimally invasive, complication-free technique. We showed that also males with different LUTD can benefit from PTNS. Almost 60% of our patients were considered as successfully treated. This success rate is comparable to other series comprising a mixed or prevalently female population. Strengths of this study are: homogeneous data coming from one center and the accurate pre- and post-treatment evaluation including also invasive urodynamics. Limitations were the retrospective design, the different clinical conditions and the little number of the patients included.

Conclusions: This paper suggests that PTNS is a feasible and effective also in male patients with LUTS, with a success rate comparable to female or mixed populations. Data coming from this study can be used to design prospective and randomized confirmatory studies.

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70 - The impact of vaginal delivery on female sexual function: The role of Levator Ani trauma preliminary data of a prospective interventional study

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Introduction and aim of the study: Postpartum sexual health is a significant condition that is often not discussed in clinical practice. How pelvic floor injuries after vaginal delivery can influence sexual function is still a debate. Pelvic floor defects can be well identified with pelvic floor ultrasound. In particular, the urogenital hiatus area modifications after delivery have been identified as a risk factors for sexual distress. Primary aim of this study is to evaluate prevalence of sexual dysfunction after spontaneous delivery. Secondary outcome is to identify any correlation between sexual dysfunction and pelvic floor defects.

Materials and methods: This is a retrospective analysis of prospectively collected data. 81 primiparous women who delivered at term, were recruited notwithstanding receiving episiotomy, or having perineal laceration or intact perineum. All patients filled FSFI and FSDS-r questionnaire during the third trimester examination, in order to evaluate prior dysfunctions. All patients recruited received these same questionnaires one year after delivery, together with a complete urogynecological examination and 3D transvaginal ultrasound, to measure urogenital hiatus area (Fig. 1) and to assess Levator Ani Muscle (LAM) lesions. Statistical analysis was conducted in order to identify any correlation between LAM lesions and sexual distress. A multivariate analysis was also done to individuate specific risk factors for this condition.

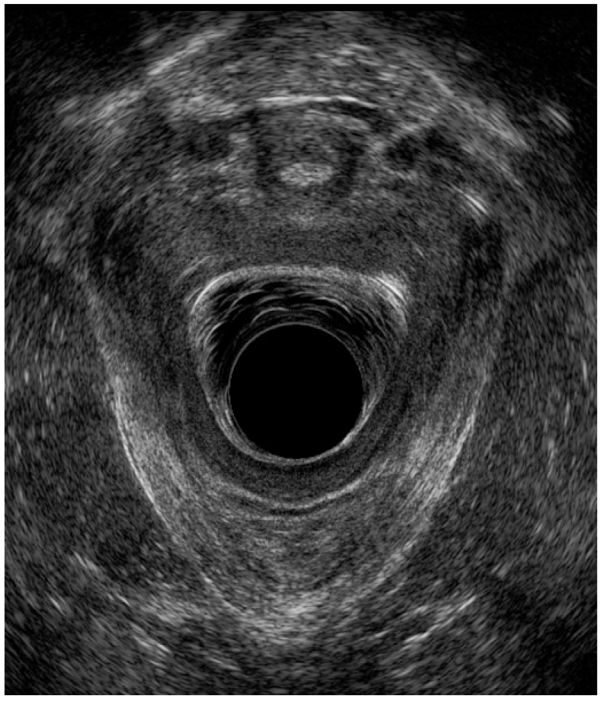

Fig. 1.

Results: One year after delivery, women sexual function shows a worsening trend, as demonstrated by poor scores of FSFI and FSDS-r, observed in patients with spontaneous delivery (p 0.000, p 0.004); pelvic floor injuries can have a role on developing of sexual distress; in particular, FSDS-r were worse in patients with greater urogenital areas at US scan (p value 0.003) and, at multivariate analysis, episiotomy seems to lead to worse scores than spontaneous lacerations do. (RR=1,250, CI:0,274–5,708, p>0.05; vs RR=0,457, CI:0,105–0,1980, p>0.05, respectively).
Interpretation of results: Pelvic floor defects can lead to sexual distress. Identify patients with LAM lesions allows urogynecologist to set a prevention plan (i.e pelvic floor rehabilitation) after spontaneous delivery.
Conclusions: Pelvic floor ultrasound is a good tool to detect LAM lesions. Further studies will allow to establish the right relationship between LAM injuries and sexual function after delivery.

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71 - Effects of intravaginal DHEA administration in women suffering from concomitant stress urinary incontinence and vulvo vaginal atrophy

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Introduction and aim of the study: The onset of stress urinary incontinence (SUI) is strongly linked to menopause. The effect of menopausal hormone therapy on SUI is still under debate. The action of androgen on pelvic floor may depend on a combination of different effects. The anabolic effects on the urethral sphincter and pelvic floor muscles (PFM) of androgen may provide a therapeutic option in SUI patients.
The use of vaginal dehydroepiandrosterone (DHEA) was recently approved from FDA for vulvovaginal atrophy (VVA) symptoms treatment in postmenopausal women (PMW).
This study aims to investigate the effect of vaginal administration of DHEA on PMW suffering concomitant VVA and SUI.
Materials and methods: This is a pilot monocentric prospective observational study. An interim analysis was performed when the first consecutive 15 patients have completed the follow-up. Inclusion criteria were pure urodynamic SUI and VVA symptoms. Patients received 6.5 mg/day vaginal DHEA for 3 months. Clinical examination and urodynamic analysis were performed at baseline and after treatment. International Consultation on Incontinence Questionnaire Short Form (ICIQ-UI SF) and 3 days bladder diary. PFM function was assessed with digital pelvic muscle strength evaluation using the Modified Oxford Scale (MOS) and Levator Ani Defect (LAD), with 3D sonographic evaluation.
Results: Demographic data and outcomes parameters are summarized in Table 1. SUI episodes were reduced from 3 to 2 (p=0.004). The median overall score of ICIQ-UI SF improved from 12 to 10 (p<0.001). PFM strength interquartile ranges improved from 2 (0–2) to 2 (1–3) (p=0.004). LAD score improved from 10 to 9. No differences were found in terms of pubovisceral thickness. No adverse events were recorded during the study period.
Interpretation of results: The overall improvement on quality of life (QoL) is consistent with the known effect of DHEA on VVA. PFM-MOS and LAD score values suggest a possible association between symptoms improvement and the anabolic effect of androgen. However, the sample size does not allow us to confirm these association.
Conclusions: Treatment with DHEA is associated with an overall QoL improvement in PMW with SUI. A better understanding of the therapeutic effect of androgens on SUI may lead to the possibility of improving existing therapeutic approaches.

Table 1
Demographic Data and Comparison of parameters related to Voiding Diary, ICIQ-SF, PFM (MOS) and LAD score Before and After treatment. Three-month follow-up (n = 15).

Age (years)	59.0 (55.0–65.0)		
BMI	25.0 (25.0–26.0)		
Parity	15 (100%)		
	Baseline	After treatment	*p*
Median number of voids (24 h)	5.0 (4.0–6.0)	5.0 (4.0–6.0)	ns
Median urgency urinary episodes	2.0 (0.0–2.0)	1.0 (0.0–2.0)	0.031 *
Median stress urinary incontinence (SUI)	3.0 (2.0–3.0)	2.0 (1.0–3.0)	0.004 **
Median number of nocturia events	0.0 (0.0–1.0)	0.0 (0.0–1.0)	ns
ICIQ-UI SF (score 0–21)	12.0 (10.0–14.0)	10.00 (8.0–12.0)	<0.001 ***
Pathologic (score>11 n, %)	9 (60%)	6 (40%)	ns
PFM MOS (score 0–5)	2.0 (0.0–2.0)	2.00 (1.0–3.0)	0.004 **
0	4 (26.7%)	0 (0%)	ns
1	2 (13.3%)	5 (33.3%)	ns
2	6 (40.0%)	4 (26.7%)	ns
3	3 (20%)	6 (40.0%)	ns
4	0	0	

(*continued on next page*)

Table 1 (*continued*).

5	0	0	
LAD (score 0–18)	10.0 (7.0–11.0)	9.00 (6.0–10.0)	<0.001 ***
0–6 mild	2 (13.3%)	5 (33.3%)	ns
7–12 moderate	13 (86.7%)	10 (66.7%)	ns
>13 severe	0	0	
Pubovisceral Thickness (mm)	9.0 (7.0–9.0)	9.00 (8.0–10.0)	ns

Statistical analysis was performed using GraphPad Prism 9 (GraphPad Software). Data are presented as median (interquartile range) and percentages. To analyse the outcomes after treatment, one-tailed matched-pairs Wilcoxon test was performed. To analyse the range of scores, Fisher's exact test or Chi-square test for trend was performed. The values of $p<0.05$ were considered significant.

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4 F - Effectiveness of physiotherapy in patients undergoing surgery for endometriosis: Evaluation of sexual and urinary functions

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Introduction and aim of the study: Endometriosis is a common and insidious disease of reproductive-aged women; the most important symptom is pain in relation to the severity and sites of implantation of endometriotic foci. Dyspareunia is one of the most common symptoms. The aim of the study is to evaluate the impact of the physiotherapeutic intervention on post-operative pain in terms of reduction of dyspareunia, vulvodynia, pain during urination/defecation, lower back pain and radiating pain to the lower limbs. A secondary objective is to compare the results of the experimental group with a control group in terms of improvement in symptoms.

Materials and methods: A cross-sectional study was conducted on 94 patients undergoing surgical treatment for endometriosis and persistence of dyspareunia. Patients were divided into 2 groups:

- experimental group (51): patients undergoing rehabilitation with 10 sessions of therapy including intravaginal electrostimulation, pudendal nerve stimulation, ultrasound therapy and pelvic stretching.
- control group (43 pts.): patients not undergoing rehabilitation with TENS or ultrasound therapy.

The results were evaluated by:

- Visual Analogue Scale (VAS) for dyspareunia, vulvodynia, pain during urination/defecation, lower back pain and radiating pain to the lower limbs.
- Patient Global Impression of Improvement (PGI-I) questionnaire to assess the improvement of overall well-being compared to before surgery.

The statistical analysis was performed with SPSS 26.0 using the following tests: Mann–Whitney test, Chi-Square, and Wilcoxon test.

Results: The evaluation of the questionnaire showed a significant improvement in dyspareunia, pain during urination/defecation, lower back pain and lower limb pain after physiotherapy only in experimental group (Table 1). The comparison of the results between the two groups before and after treatment does not show any significant difference. In both groups the patients reported an improvement in quality of life compared to the period before the surgery, without significant differences between the two groups (PGI-I questionnaire: *p 0.21*).

Table 1
Comparison of questionnaire results between pre- and post-physiotherapy.

Experimental Group			
Question	***Pre-treatment***	***Post-treatment***	***P value***
Dyspareunia	3,0 [2,0 – 8,0]	1,0 [0,0 – 6,0]	0,007*
Vulvodynia	2,0 [0,0 – 5,0]	1,0 [0,0 – 2,5]	0,085*
Pain during urination/defecation	2,0 [1,5 – 7,5]	1,0 [1,0 – 3,5]	0,010*
Lower back pain	3,0 [2,0 – 8,5]	2,0 [1,0 – 7,0]	0,032*
Lower limb pain	3,0 [2,0 – 8,0]	2,0 [1,0 – 6,0]	0,024*
Control Group			
Question	***Pre-treatment***	***Post-treatment***	***P value***
Dyspareunia	3,0 [0,5 – 6,0]	3,0 [0,0 – 7,0]	0,897*
Vulvodynia	0,0 [0,0 – 5,5]	1,0 [0,0 – 4,0]	0,976*
Pain during urination/defecation	4,0 [1,0 – 6,5]	2,0 [1,0 – 6,0]	0,389*
Lower back pain	4,0 [1,0 – 7,0]	4,0 [1,0 – 7,0]	0,719*
Lower limb pain	3,0 [0,0 – 7,0]	3,0 [0,0 – 7,0]	0,873*

* Mann-Whitney Test

Conclusions: Physiotherapeutic treatment has been shown to be effective in reducing dyspareunia and other types of pain examined compared to pre-treatment. It is not possible to establish whether physiotherapy treatment is better than other treatments in the management of dyspareunia. Comparative prospective studies with more homogeneous control groups are needed to better define the role of physiotherapy treatment.

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8 F - A combined approach for NLUTS and constipation in Parkinson patients in an outpatient setting

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Introduction and aim of the study: Parkinson's disease (PD) can cause motor and nonmotor symptoms. Among the nonmotor symptoms, NLUTS (neurogenic urinary tract symptoms) and NBD (neurogenic bowel dysfunction) with constipation are the most common, with an estimated incidence rate of 27–80% [1,2].
Overactive bladder (OAB) is the most common NLUTS in PD, but other common manifestations include urinary incontinence, nocturia, urgency, voiding difficulties and urinary retention [1].
There is a deep connection with NLUTS and NBD, both as regards the pathogenic mechanisms and for the fact that constipation worses urgency and OAB [2].
Neuromodulation is effective for neurogenic bladder and bowel dysfunction in patients with PD. Among the neuromodulation techniques, TTNS (transcutaneous tibial nerve stimulation) is effective for the treatment of NLUTS in patients with PD, reducing urgency and nocturia episodes and improving urodynamic parameters.
There is a lack in literature about the role of pelvic floor muscle training in the management of NLUTS in PD. The aim of this study is to identify a combined rehabilitation program: behavioral therapy and TTNS, and to assess its effectiveness in patients with PD.
Materials and methods: We enrolled in our study 4 patients affected by PD (2 men, age 75 and 71; 2 women, age 66 and 61). All 4 with constipation, urgency (3 with incontinence, 1 without) and nocturia. No one was taking any urgency drug. All patients received TTNS (3 times/week, 30 min) and behavioral therapy (3 times/week, 30 min) for 8 weeks.
Behavioral therapy included pelvic floor muscle training, bladder training and constipation management. All patients received probiotics for 60 days at the beginning of the program.
Assessments were performed at baseline and after 8-weeks, they included: 3-day bladder and bowel diary (compiled using Bristol stool chart), Overactive Bladder Questionnaire (OAB-V8) and the International Consultation on Incontinence Quality of Life Questionnaire Short Form (ICIQ-SF).
Results: Patients demonstrated significant reductions in urgency and nocturia.
Patients also showed better results after treatment in the OAB-V8 and ICIQ-SF scores. We detect a clinically important difference of 2.5 points on the ICIQ-SF and of 2 points in the OAB-V8.
The constipation also improved (4 to 5 defecation/week) and the consistence of stool at Bristol Chart too (from 1–2 to 3–4).
Interpretation of results: TTNS is an effective therapy for OAB in PD. The association between PFMT and TTNS can significantly reduce NLUTS and constipation in these patients.
The results of this study suggest that self-monitoring with a daily bladder and bowel diary may help patients awareness and lead to clinically significant improvement in the frequency of urinary incontinence, overactive bladder symptoms and constipation.
Conclusions: These results demonstrate that combined therapy (TTNS and behavioral therapy) is a reasonable initial treatment strategy in patients with PD.

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9F - A study of urinary symptoms during the third trimester of pregnancy

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Introduction and aim of the study: The aim of the study is to investigate the incidence of urinary dysfunctions during the third trimester of pregnancy.
Materials and methods: The population of the study is composed by women at the third trimester of pregnancy. Inclusion criteria are all pregnancies (physiological and not), adequate understanding of Italian language and the signature of informed consent. Exclusion criteria are inadequate understanding of Italian language and lack of informed consent. The questionnaire ICIQ-FLUTS (Female Low Urinary Tract Symptoms) Italian version was used to evaluate patients during outpatient visit.
Results: The population was composed by 100 women. Their age is between 20 and 45 years old (average 34). 71% of women are primiparous while 29% were pluriparous. ICIQ-FLUTS questionnaire includes 3 sections, and the respective results are: Filling Score average 5,6 (SD: 2,6; range 0–16), Voiding Score average 1,6 (SD 1,7; range 0–12) and Incontinence Score average 2,9 (SD: 3,4; range 0–20). The results of the Incontinence Score are reported in the next table.

QUESTIONS	**Never (%)**	**Once per week or less (%)**	**2/3 times per week (%)**	**Once per day (%)**	**Several times per day** (%)
How often do you leak urine?	52	22	14	6	6
	Never	**Occasionally**	**Sometimes**	**Most of the time**	**All of the time**
Does urine leak before you can get to the toilette?	53	30	13	3	1
Does urine leak when you are physically active, exert yourself, cough or sneeze?	47	22	23	7	1
Do you ever leak urine for no obvious reason?	78	18	4	0	0
Do you leak urine when you are asleep?	94	4	1	0	1

Interpretation of results: The questionnaire reveals that the more compromised urinary function is the filling one. On the other hand, voiding dysfunctions seem to be less frequent. Urinary incontinence is present in 48% of patients: urge incontinence affects 47% of patients, while stress incontinence is described by 53% of patients. Incontinence without an obvious reason and nocturnal enuresis have lower percentages (respectively 22% and 6%).
Conclusions: The data confirm that incontinence is frequent during pregnancy. It is known that this fact could increase the risk of post-partum urinary dysfunctions. Primary and secondary prevention programs should be expressly built.

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