Appendix 1: The methods of electrode placement

Electrode location	Electrodeposition met	hod/ Number of studies
Point A: 3-5 cm above the med malleolus	Method 1 _AC 14 studies	TINS
Point B: less than 3 cm above the medial		
malleolus	Method 2 BC	
Point C: Around the medial malleolus	6 studies	
Point D: More than or equal to 5 cm above		
the med malleolus		
Point E: On the arch of the foot in the	Method 3 _AE	
middle part of the sole in the heel bone	To studies	12
Point N: Related to unknown points etc. in		
the path of the tibial nerve in the leg		
	Method 4 _BE	(the set
	Method 5 _DC	
	10 studies	1535
	Method 6	R. William Martin
	AN, BN, CE,BD, EE	
	17 studies	A LEBRS
		THE HARD

Row	Author, year and reference	Result
1	Mathieu 2017(58)	The visual analog scale (VAS) score above 50% showed no significant difference between the diabetic group (70% vs. 44.1%, p=0.17) and the two groups (4.10 vs. 4.10, p=0.98). After two months of treatment, the score on the urinary symptoms profile (USP) questionnaire reduced significantly in both groups (-3 scores in the diabetic group, -1.9 scores in the non-diabetic group, p=0.030 and p<0.001, respectively). Except for the patients whose treatment was stopped after 6 months, there was no significant difference between groups. This difference was greater among diabetic patients (100% vs. 63.5%, p=0.04). The functional results of the TTNS in the OAB treatment seem to be similar between the diabetic and non-diabetic patients.
2	Ragab 2015 (68)	At the end of the treatment, the VAS score and daily voiding frequency rate reduced and the mean urine volume increased. There was no statistically significant difference in the ICPI scores (p=0.927) between weeks 0, 6, and 12 (p=0.937). As regards the GRA score, 85% of patients reported having no effect, 5% reported having worse symptoms, and 10% reported having a mild good response. Intermittent PTNS is not a satisfactory treatment for refractory IC/BPS.
3	Van balken 2003 (46)	A subjective response was observed in 42% of patients. The mean VAS score was less than 3 in 21% of patients. The 36- item Short Form Health Survey questionnaire (SF-36) showed the overall pain intensity to have a significant improvement. Despite the very low overall success rate and the need for controlled studies with placebo, PTNS may have a place in the treatment of patients with chronic refractory pelvic pain.
4	Rio-Gonzalez 2017 (51)	The data confirmed the high effectiveness of PTNS in improving the OAB symptoms by 24 months. Moreover, frequent urination during the day and the first sensation of bladder filling are considered important factors in the PTNS success.
5	AMARENCO 2003 (47)	The PTNS has an objective effect on urodynamic parameters. Improvement of OAB caused the PTNS to be suggested as a non-invasive therapeutic method at the bedside.
6	Klingler 2000 (55)	Pain (VAS) is reduced in patients. The urodynamic evidence of bladder instability faded in 76.9% of patients. The average total bladder capacity (TBC) and bladder volume during voiding increased in all patients. No side effects were observed in treatment. Peripheral neuromodulation of the S3 region can treat patients with urgency-frequency in OAB syndrome.
7	De Gennaro 2004 (50)	The pain VAS score decreased. Most cases of urinary incontinence were cured. The symptoms improved in 71% of the children with urinary retention. In 65% of patients who regained bladder control, the cystometric capacity of the bladder was normal and there were no more unstable contractions. No significant change was observed in the urodynamic and symptoms in the neuropathic bladder group. The PTNS is safe, minimally painful and feasible in children. PTNS seems to be helpful in the treatment of refractory nonneurogenic LUTS.
8	MacDiarmid 2010 (56)	Patients showed improvement in overall subjective response, frequency of daily voiding and urge incontinence. A significant improvement was observed in the OAB questionnaire symptoms severity from 3 months to 12 months (p <0.01), as well as from 6 months to 12 months (p<0.01). The mean voiding volume improvement was 39 cc (p<0.05). No significant side effect was observed. The OAB symptoms improved significantly with 12 weeks of PTNS treatment sessions and this improvement lasted for up to 12 months. The results of this study indicate the effectiveness of PTNS as a stable and long-term treatment in OAB.
9	Onal 2012 (59)	There was a significant reduction in urinary frequency, urgency, urge incontinence, and the pad test score, and an increase in the patient's fluid intake. Despite its positive effects on bladder diary, pad test, and QOL in OAB syndrome, PTNS has no effects on bladder circulation.
10	Vanbalken 2001(46)	There was a statistically significant reduction in the frequency of urine leakage, number of pads, and frequency of urine voiding. The QOL of patients, especially patients with OAB improved. The mean volume of urine voided showed a statistically significant increase. Only mid-side effects were observed. The PTNS is a successful therapeutic non-invasive method for patients with certain types of lower urinary tract dysfunction.
11	Peters 2012 (28)	There was a significant improvement in urinary frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health-related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long-term safe, durable and valuable therapeutic method to significantly maintain the clinical control of the OAB symptoms.
12	Van Balken,et al 2006 (62)	Sexual dysfunction is observed in most of the patients with lower urinary tract dysfunction, which may be improved in the recent successful treatment.
13	Zhao 2004 (70)	No significant change was observed in the pain scores, urine voiding frequency, urine volume, and the scores of ICPI, ICSI, and SF-36. However, an improvement was observed in some patients. The treatment had no side effects. Intermittent PTNS has no significant clinical effect on patients with refractory IC during 10 weeks.
14	van der Pal 2006 (63)	After stopping treatment for 6 weeks, the frequency and severity of incontinence worsened significantly ($p<0.05$). After retreatment, the number of incontinence episodes, incontinence severity, as well as the QOL improved significantly ($p<0.05$). The mean voided volume was significantly worsened and it was significantly improved during the retreatment period ($p<0.05$). Continued treatment is considered necessary in OAB patients who have been successfully treated with PTNS. The PTNS can be made effective again in patients who have already been successfully treated.
15	Yoong 2013	Daily incontinence frequency and daily urge incontinence frequency during 2 years were statistically similar to the recorded cases within 6 weeks and remained less than the baseline level. No side effects other than hypoesthesia were

	(65)	reported. Women who received PTNS for refractory OAB syndrome during 2 years, reported significant symptom relief. PTNS is an excellent safe durable therapeutic method in the second line of treatment.
16	Zhao 2008 (69)	No statistically significant improvement was observed in VAS. The scores of ICPI, ICSI, and SF-36 were improved significantly. No significant difference was observed in the diary index and SF-36 scores between the two groups and before and after treatment. Out of 18 patients, the bladder volume had a statistically significant improvement in 8 patients who evaluated the trial to be effective. All patients completed the 10 therapy sessions without any side effects. Intermittent PTNS may be an alternative therapy for patients with IC symptoms.
17	Baykal 2005 (66)	A significant improvement was observed in the maximum bladder capacity and pain symptoms. The intravesical heparin and peripheral neuromodulation combination seems to be an alternative for patients with refractory IC.
18	Govier 2001 (53)	The mean daily urine voiding and urge incontinence were reduced by 25% and 35%, respectively (p<0.05). Statically significant improvements were observed in the pain and QOL indices. No significant side effects were observed in patients. Percutaneous peripheral afferent nerve stimulation is a safe, minimally invasive and effective therapy for treating refractory OAB and/or pelvic floor dysfunction.
19	van Balken 2006 (61)	Subjective success was seen in 51.5% of patients. The SF-36 total score was low. The patients also scored worse on the disease-specific QOL questionnaire, though the disease severity was not different. PTNS may be used as a tool for neuromodulation therapy in patients.
20	Capitanucci 2009 (49)	Twelve and all 14 patients with dysfunctional voiding were improved (p not significant). During 1 year of follow-up, the dysfunctional voiding was improved greater in OAB patients (71% vs 41%) and the improvement remained the same at the 2-year evaluation. The voided volume and post-void residual urine became normal in most of the patients with dysfunctional voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones.
21	Vandoninck 2003 (64)	The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved significantly ($P < 0.01$). Cystometric bladder capacity ($p=0.043$) and bladder volume ($p=0.012$) increased significantly. PTNS cannot abolish Detrusor instability but it increases cystometric capacity and delays the onset of Detrusor instability. PTNS can be useful in the cystometry of patients without Detrusor instability or with late Detrusor instability onset.
22	Fischer-Sgrott 2009 (52)	The scores of the health-related questionnaire and ICIQ-SF were improved significantly. PTNS can be considered as a good alternative to OAB therapy because it is safe and inexpensive as compared to other therapeutic methods and improves the QOL in women with refractory OAB.
23	Marchal 2011 (71)	At 6, 12, and 24 months of follow-up, 92.4%, 91.69%, and 62.5% of patients improved, respectively. Night-time urination frequency ($P \le .05$) and QOL ($P \le .01$) were significantly worsened. By the end of therapy, the first sensation of bladder filling increased. The mean post-therapy bladder capacity increased by 72.7 mL ($P \le .001$). PTNS is a good option for OAB therapy.
24	Pytel 2018(60)	According to the urinary dairy, incontinence frequency, frequent urination, and tendency to urinate improved. Urodynamic examination showed no significant change in the target parameters. No side effects were observed. PTNS is an effective, minimally invasive, tolerable and safe therapy for OAB syndrome.
25	Kabay 2021 (67)	Daily urine voiding and daily emergency frequency decreased by 3.8 and 4.7 times, respectively, and pain intensity, symptoms, and problem index showed a statistically significant improvement. The changes in the mean volume of urine voided were not statistically significant. The voiding volume improved by 8.4 mL on average. In patients with painful bladder syndrome, the urine voiding diary, and scores of the ICSI, ICPI, and VAS improved after 12 weeks of PTNS treatment. The PTNS treatment is a useful therapeutic option in the first line of the treatment to improve the symptoms of the painful bladder syndrome.
26	Kizilyel 2015 (24)	All parameters of the urinary bladder improved significantly in all groups ($p<0.05$). The use of PTNS compared to the drug group had a statistically significant improvement in symptoms. PTNS is a safe, simple and minimally invasive treatment method in patients with OAB and may be suggested alone or in combination with ACD if conventional treatments fail.
27	Preyer 2015 (30)	There was no significant difference between the two treatment groups in quality of life ($p = 0.07$) and frequency of incontinence ($p = 0.89$). Side effects of PTNS were less than tolterodine ($p=0.04$). Both PTNS and tolterodine were effective in reducing the frequency of incontinence and improving the quality of life in patients with OAB, but not in the frequency of urination. PTNS had fewer side effects.
28	Ayala-Quispe 2020 (39)	Average voiding volume, daily and nightly voiding frequency decreased, urgency and urgency incontinence frequency decreased, there was no significant difference between the two treatments. The quality of life and recovery due to treatment with both techniques increased positively (p=0.05). There were no complications. This was the first randomized clinical trial in Mexico that evaluated the efficacy of both posterior tibial stimulation techniques.
29	Sherif 2017 (34)	Botulinum toxin group had significant improvement in all parameters. Intrathecal injection of botulinum toxin and PTNS are both effective in the treatment of refractory idiopathic OAB. Botulinum toxin A is more effective than PTNS and is durable, less invasive, reversible and safe, but has more side effects.
30	Mallmann 2020 (25)	The overactive bladder questionnaire showed a significant improvement in the PTNS group compared to the parasacral stimulation group ($p=0.019$). After the intervention, there was no difference between the groups in terms of the KHQ domain, the average symptom scale of this questionnaire, and the proportion of the incontinence severity index. Both parasacral cutaneous electrical stimulation and PTNS appear to be effective and safe for home treatment of women with OAB.
31	Elshora 2020 (18)	Urodynamic parameters and OAB symptoms had a statistically significant improvement, there was no significant difference between the two groups. Side effects were mainly observed in the trospium chloride group, which were not observed in the PTNS group. Trospium chloride and PTNS stimulation have the same effect in treating OAB symptoms and these two lines of treatment are effective. PTNS is safe and associated with significant improvement in OAB

symptoms.

32	Lashin 2021 (40)	Bladder symptoms, frequency and frequency of emergency urinary incontinence had statistically significant improvement. No serious device-related adverse events or malfunctions were reported. PTNS is safe and effective in treating OAB symptoms after 6 weeks. This is more acceptable and affordable for patients.
33	Vecchioli- Scaldazza 2018(37)	PTNS showed more effectiveness than solifenacin succinate, but together with PTNS, it was more effective than its individual application and showed more effectiveness in the long term.
34	Sonmez 2022 (42)	The severity of incontinence, voiding frequency, frequency of incontinence, number of pads used, severity of symptoms and quality of life of the groups receiving posterior tibial nerve stimulation were significantly improved compared to the group receiving bladder retraining (P<0.0167). Treatment success and treatment satisfaction were higher in both electrical stimulation groups than in the bladder retraining group (P<0.001 and P<0.0167, respectively). Posterior tibial nerve stimulation with bladder training was more effective than bladder training alone in women with idiopathic OAB .These two tibial nerve stimulation methods had similar clinical efficacy, but with minor differences, TTNS had shorter preparation time, lower discomfort level, and higher patient satisfaction than PTNS.
35	Svihra 2002 (36)	In the electrical stimulation group, the average of the incontinence questionnaire increased. There was a significant difference in the drug group. The untreated group saw no change in complaints. Noninvasive stimulation improved subjective symptoms related to overactive bladder, had no side effects, and was well tolerated.
36	Karademir 2005 (23)	In both groups, the average voiding frequency, urgency and urgency incontinence improved. There was no significant difference between the two groups. SANS is an easy treatment method with few complications in OAB. The combination with a low dose of anticholinergic, without causing side effects, significantly increases the success rate.
37	Zonić- Imamović 2021(44)	TTNS and PTNS led to reduction of all clinical symptoms of OAB and significant improvement of quality of life (P <0.05), without side effects, which was statistically more significant with PTNS (P <0.001). Better effects were obtained with weekly PTNS.
38	Geirsson1993 (45)	Urinary frequency, average and maximum voided volume, and visual analog scale scores of both groups had no difference compared to before treatment. Despite the small sample size, it seems that TTNS and acupuncture have a very limited effect in patients with interstitial cystitis.
39	Boudaoud 2015(15)	Objectively, the results support the effectiveness of TTNS. Evacuation volume (184 ml to 265 ml), maximum cystomanometric volume (215 ml to 274 ml) increased significantly. Clinical results remained the same between TTNS and placebo groups. Despite the small sample size, this pediatric population emphasizes the placebo effect with any treatment.
40	Macías-Vera 2016 (57)	Patients treated with darifenacin had a decrease in voiding frequency and incontinence, and compared to patients treated with stimulation, they had a lower score in the self-assessment questionnaire of quality of life. In the pad test, urine leakage in grams decreased in both groups and there was no statistically significant difference between the two groups $(p=0.753)$. At week 6, darifenasin was superior to transcutaneus stimulation in reducing symptoms, urinary leakage, and questionnaire scores.
41	Souto 2014 (35)	In the 24th week, in the multimodal treatment group, the score of the OAB Incontinence Questionnaire (ICIQ-OAB), $p = 0.0001$, and the score of the Short Form Incontinence Questionnaire (ICIQ-SF), $p = 0.0006$, increased. Multimodal treatment was more effective and TENS treatment (alone or combined) has more lasting results than oxybutynin alone.
42	Manriquez 2016 (26)	A significant decrease was observed in the voiding frequency, urgency and frequency of emergency incontinence. There was no significant difference between the intervention groups. OAB-q scores improved similarly in both groups. TTNS and oxybutynin showed similar improvements in subjects with OAB in a 12-week study.
43	Ramirez- Garcia 2021 (32)	Statistically significant improvements were observed in OAB-q-SF and incontinence questionnaire, as well as in the quality of life of both TTNS and PTNS groups ($p < 0.001$). There was no difference between the two groups. Therefore, these findings, along with the minimal invasiveness and ease of use of TTNS, may lead to an increase in the use of this technique in OAB.
44	Abulseoud 2018(10)	The average score of the OAB symptom questionnaire, the average voiding frequency, and the IIQ-7 score in both TTNS and TTNS plus drug groups had a significant decrease. Cystometric capacity increased in both groups. TTNS combined with low-dose trospium chloride was more effective than TTNS alone in treating OAB in women.
45	Hegazy 2014 (54)	The mental success rate was 67% in the PTNS group and 40% in the propriorin group. PTNS is more effective than proprin in the treatment of OAB.
46	Bacchi 2021 (14)	Significant reduction of 1.5 times urination in group 2, which was not clinically relevant. Adding vaginal stimulation to TTNS for treating OAB was not more effective than TTNS alone.
47	Ebid 2009 (17)	In both groups, the parameters of daily urination, severity of urgency and VAS had statistically significant improvements. In the PTNS group along with pelvic floor exercise, the volume of the initial tendency to void was a continuous recovery. No difference was observed in the long-term electrical stimulation of the posterior tibial nerve with vetrospium hydrochloride in the treatment of patients with OAB. Discontinuation of both treatments resulted in further worsening of symptoms of OAB.
48	Finazzi-Agro 2010(19)	The improvement of incontinence frequency, number of voids, volume of voids, and incontinence quality of life score was significant in PTNS, but not in the placebo group. PTNS can be considered an effective treatment for detrusor overactivity incontinence, none of the placebo-treated patients responded to the treatment.
49	Barroso 2013 (48)	The visual analog scale was completely resolved in 70% of the parasacral stimulation group and in 9% of the PTNS group ($p=0.02$). There was no significant difference between the groups ($p=0.55$). Parasacral electrical stimulation is more effective in relieving symptoms of OAB, which is consistent with parents' opinion. However, there was no statistically significant difference in the assessment of symptoms of inefficient urination, or in the complete resolution of daily urinary urgency or incontinence.
50	Sancaktar 2010 (33)	Side effects were similar between the two groups. The combination of SANS and antimuscarinic therapy compared to antimuscarinic therapy alone in patients with overactive bladder led to better clinical results and Incontinence Impact Questionnaire (IIQ-7) scores.
51	Ramirez- Garcia2019	The number of daily urination and symptom improvement of the 3-day diary variables of urination in both stimulation methods did not decrease statistically significantly. In each method, more than 50% of the frequency of emergency

	(31)	incontinence was reduced and the quality of life improved to a great extent. TTNS complications are not more. According to the results, the use of neuromodulation in a superficial way may lead to more prescribing of this technique.
52	Martin-Gracia 2018 (27)	In both stimulation methods, the results of voiding frequency, frequency of urgency and urinary incontinence, severity of symptoms and quality of life did not change significantly. There was no statistically significant difference in outcomes between groups. TTNS is effective in maintaining symptom improvement in women with OAB who responded positively to a course of 12 weekly sessions of PTNS.
53	Pierre 2021 (41)	TTNS in one leg, once a week, reduced urgency frequency $(1.0\pm1.6 \text{ vs. } 1.4\pm1.9; \text{ p} = 0.046)$ and incontinence frequency compared to placebo $(1.4\pm0.7 \text{ vs. } 1.4\pm2.2, \text{p}<0.001)$. The protocol of one leg, twice a week, increased the frequency of urination compared to two legs, once a week (8.2±3.5 vs. 9.0±5.1; p=0.026) and placebo (3.5 ±8.2 versus 2.7±9; p = 0.02). Stimulation of one leg improved daily urination frequency, urgency and urinary incontinence.
54	Bykoviene 2018(16)	Urinary frequency of women improved in both groups, urinary incontinence decreased significantly in the second group. There were no between-group differences. All three treatments (TTNS plus pelvic floor muscle retraining and retraining alone and lifestyle advice) lead to effective short-term reduction of urgency in women with OAB, but evaluation of long-term efficacy is needed.
55	Alve 2020 (13)	No difference in the analyzed outcomes was observed between the TTNS groups with sensory and motor thresholds. TTNS is more effective in treating OAB in older women. And there is no difference between sensory and motor thresholds.
56	Jacomo 2020 (22)	By measuring OAB_ICIQ and SF_ICIQ, the symptoms of both groups improved. In the 3-day evaluations of the bladder diary in the TTNS group, the frequency of urgency and urinary incontinence decreased, no difference was observed between the groups. Both proposed treatments were effective in improving OAB symptoms, but TTNS showed a greater reduction in symptoms than the 3-day bladder diary.
57	Ahmed 2020 (11)	In TTNS and PTNS groups, maximum bladder capacity and health-related quality of life increased significantly (P=0.0001). There was a significant decrease in the severity of bladder symptoms in both groups. There was no significant difference between the two groups in all variables (P>0.05). TTNS is as effective as PTNS in reducing bladder severity symptoms and improving health-related quality of life in postmenopausal women with OAB.
58	Girtner 2021 (20)	With bilateral TTNS, maximum bladder capacity increased by 41 ml in subjects without anatomic pathology symptoms ($p = 0.02$). The average voiding volume of patients with residual pathological values after voiding increased by 76 ml compared to patients without urinary retention ($p = 0.03$). TTNS appears to be beneficial in these patients.
59	Welk 2020 (43)	There were no significant differences in secondary outcomes (24-hour pad weight and urine output diary parameters). The results were similar in OAB and neurogenic bladder subtypes. TTNS does not appear to be effective for treating urinary symptoms in people with OAB or neurogenic bladder dysfunction.
60	Okan 2021 (12)	A significant decrease in voiding frequency, OAB-V8, ICIQ-SF was observed in both groups (p<0.001). After 12 weeks of TTNS, no significant difference was observed between the groups in terms of treatment response. Three times weekly TTNS appears to be more effective than once weekly and can be safely used before aggressive treatments in refractory OAB.
61	Zhang 2021 (38)	OAB symptoms with OAB-q questionnaire and urine diary and maximum bladder volume in both groups significantly improved after treatment, which was better in the combination group, drug and TTNS. Some mild side effects were observed. The combination of TTNS and solifenacin was more effective in improving OAB symptoms than solifenacin alone.
62	Ugurlucan 2013 (21)	PTNS and electrical stimulation are both significantly effective in the treatment of OAB in improving objective and subjective parameters. The objective results between the two groups are not significantly different. However, the number of patients describing themselves as cured was significantly higher in the ES group.
63	Peters 2009 (29)	No serious device-related adverse events or malfunctions were reported. This randomized, double-blind, multicenter, randomized controlled trial with level I evidence found that PTNS therapy is safe and effective in the treatment of OAB. The convincing effect of PTNS in this trial is consistent with other recently published reports and supports the use of peripheral neuromodulation for the treatment of OAB.

Appendix 2b: Summary of studies

Conclusions	Interv	entior	n group):								C	Š	Ye	
	Number of limbs (leg)	Method of	Treatment duration(min)	Voltage	Pulse width (milliseconds)	Threshold of stimulation	Current intensity (milliampere)	Current frequency (Hz)	Number of treatment sessions	Samples size	Stimulation method	ontrol group	tudy type and disease	ar	

The visual	NM	2	20	NM	0.15	Р	NM	NM	7*8=56	71	TTNS		NRCT	Mathieu	1
analog scale													OAB	2017	
(VAS) score														(58)	
above 50%															
showed no															
significant															
difference															
between the															
diabetic group															
(70% vc 44.1%)															
$(70\% \ VS. 44.1\%)$															
p=0.17) and the															
1 10 0 000															
vs. 4.10, p=0.98).															
After two months															
of treatment, the															
score on the															
urinary															
symptoms profile															
(USP)															
questionnaire															
reduced															
significantly in															
both groups (-3															
scores in the															
diabetic group, -															
1.9 scores in the															
non-diabetic															
group, p=0.030															
and p<0.001.															
respectively).															
Except for the															
patients whose															
treatment was															
stopped after 6															
months there															
was no															
significant															
difference															
between groups															
This difference															
was greater															
among diabetic															
patients (100%															
$v_{S.} 05.5\%$,															
p=0.04). The															
functional results															
of the TTNS in															
the OAB															
treatment seem															
to be similar															
between the															
diabetic and non-															
diabetic															
patients.												1	1		

At the end of the	1	1	30	NM	NM	Р	NM	NM	1*12=12	20	PTNS	NRCT	Ragab	2
treatment, the												PB	2015	
VAS score and													(68)	
daily voiding													(00)	
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requeitcy fate														
reduced and the														
mean urine														
volume														
increased. There														
was no														
statistically														
significant														
difference in the														
(n-0.027)														
(p=0.927)														
between weeks 0,														
6, and 12														
(p=0.937). As														
regards the GRA														
score, 85% of														
patients reported														
having no effect.														
5% reported														
having worse														
aving worse														
symptoms, and														
10% reported														
having a mild														
good response.														
Intermittent														
PTNS is not a														
satisfactory														
treatment for														
refractory														
IC/BPS														
A subjective	1	4	20	0	0.2	D	0.10	20	1*12-12	22	DTNC	NDCT	Van halltan	2
A subjective	1	4	30	9	0.2	r	0-10	20	1*12=12	33	PINS	NKUI	van baiken	3
response was												PB	2003	
observed in 42%													(46)	
of patients. The														
mean VAS score														
was less than 3 in														
21% of patients.														
The 36-item														
Short Form														
Health Survey														
quastionnaira														
questionnaire														
(SF-36) showed														
the overall pain														
intensity to have														
a significant														
improvement.														
Despite the very														
low overall														
success rate and														
the need for														
controlled studies														
controlled studies														
with placebo,														
PINS may have														
a place in the														
treatment of														
patients with														
chronic														
refractory pelvic														
nain														
The date	1	6	30	0	0.2	NM	NM	20	14	200	DTNC	NRCT	Rio-Conzoloz	Δ
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												UAD	2017	
nigh													(51)	
effectiveness of														
PTNS in														
improving the														
OAB symptoms														

by 24 months.														
Moreover.														
frequent														
uningtion during														
urmation during														
the day and the														
first sensation of														
bladder filling														
are considered														
important factors														
in the PTNS														
success.														
The PTNS has an	1	5	NM	NM	200	Μ	NM	NM	NM	44	TTNS	NRCT	AMARENCO	5
objective effect												OAB	2003	
on urodynamic													(47)	
narameters													()	
Jacob Parameters.														
Improvement of														
OAB caused the														
PTNS to be														
suggested as a														
non-invasive														
therapeutic														
mathod at the														
bedside.														
Pain (VAS) is	1	2	30	9	0.2	Μ	0.5-	20	4*12=48	15	PTNS	NRCT	Klingler	6
reduced in							10					OAB	2000	
patients. The													(55)	
urodynamic														
avidance of														
evidence of														
bladder														
instability faded														
in 76.9% of														
patients. The														
average total														
hladdan annaite														
bladder capacity														
(TBC) and														
bladder volume														
during voiding														
increased in all														
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patients. No side														
effects were														
observed in														
treatment.														
Peripheral														
neuromodulation														
of the S3 region														
on treat nationts														
can treat patients														
with urgency-														
trequency in														
OAB syndrome.														
The pain VAS	1	6	30	NM	0.2	Μ	0-10	20	1, 6, 12	10	PTNS	NRCT	De Gennaro	7
score decreased									, ,			OAB	2004	
Most cases of												0.10	(50)	
widst cases of													(30)	
urinary														
incontinence														
were cured. The														
symptoms														
improved in 71%														
of the children														
with urinary														
rotantian In 650/														
retention. In 65%														
or patients who														
regained bladder														
control, the														
cystometric														
capacity of the														
bladder was														
normal and 1														
normal and there														
were no more														
unstable														
a a status ati a su a NTa														

significant															
change was															
observed in the															
urodynamic and															
symptoms in the															
neuropathic															
bladder group.															
The PTNS is															
safe, minimally															
painful and															
feasible in															
children. PTNS															
seems to be															
neipiui in the															
treatment of															
nonnourogania															
IUTS															
Patients showed	1	3	30	NM	NM	NM	0.5-9	20	1*12-12	33	PTNS		NRCT	MacDiarmid	8
improvement in	-	5	50	1 11/1	1 11/1	1 11/1	0.5-9	20	1 12-12	55	11110		OAB	2010	0
overall subjective													Ond	(56)	
response.														(50)	
frequency of															
daily voiding and															
urge															
incontinence. A															
significant															
improvement															
was observed in															
the OAB															
questionnaire															
symptoms															
severity from 3															
months to 12															
months (p															
<0.01), as well															
as from 6 months															
to 12 months															
(p<0.01). The															
mean voiding															
volume															
improvement															
was 39 cc															
(p<0.05). No															
significant side															
effect was															
Odserved. The															
OAD symptoms															
significantly with															
12 weeks of															
PTNS treatment															
sessions and this															
improvement															
lasted for up to															
12 months. The															
results of this															
study indicate the															
effectiveness of															
PTNS as a stable															
and long-term															
treatment in															
OAB.															
There was a	1	6	30	NM	0.2	Μ	0.5-	20	1*12=12	18	PTNS		NRCT	Onal	9
significant							10						OAB	2012	
reduction in														(59)	
urinary															
frequency,															
urgency, urge															
incontinence, and														l	

the part of the second of the															
Model Index Depart Index Depart <b< td=""><td>the pad test</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></b<>	the pad test														
increase in the jatient full has been in the series of the	score, and an														
intak. Beying and a set of the se	increase in the														
inite Despite offices on bladder director offices on offices on offices on bladder director offices on offices on offices on offices on bladder director offices on offices o	patient's fluid														
in ponive of effects of the second of the se	intake. Despite														
effects on bladder diverses as as officted in the as officted in the as officted in the as officted in the officient of the restriction in the treparency of unite bladder, is as	its positive														
Balder dary pullets, model options, DAB Solution	effects on														
In the second bladder of the second bladder	bladder diary														
OCL in OAB has no effects on MadderII <t< td=""><td>nad test and</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	nad test and														
yonghoma, PTNS habded circulation tasso officts and circulation significant reduction in the frequency of unne loading significant frequency of un	OOL in OAB														
Provide classical class	syndrome PTNS														
Initial District Initial Statistical Statistis Statistical Statistical Statistical Statis Statistical Statisti	has no affects on														
circulationIII	hladder														
The example of pake- septiment (and requerely of a septiment (and requerely of a septiment)) and the set of a set	circulation														
Intervals 1 of 3 of 4 of 5 of 4 of 5 of 4 of 5 of 6 of 6 of 5 of 6 of 6	There was a	1	3	30	0	0.2	м	0 10	20	1*17-17	37	DTNS	NDCT	Vanhalkan	10
separation of the set	statistically	1	5	50		0.2	171	0_10	20	1 12-12	57	11105	OAR	2001	10
return in the foregree yord of	significant												UAD	(46)	
Intervention in the leakage, mumber of page 1 and 1 an	reduction in the													(40)	
unine tadage. unine volding. The QCI of patients, sepecially statistically increase. Out The mean volded showed a statistically increase. Out statistically increase. Out statistically the mean statistically the mean statistically the mean statistically the mean statistically statisti	frequency of														
uning damper of the second sec	urine leakage														
and frequency of unite voiding. The QOL of patients, especially patients with QOAB improved. The mean volume of unite voided showed a statistically significant increase. Only molecular the statistically significant increase. Only molecular the statistical significant increases of the statistical significant increases of the statistical significant in the scores of symptoms severity and over units of the statistical significant in the scores of symptoms. Some mild side effects of effects of unknown relationships to reported. TNS with 1.3 treatments per mombils a long-term model and beather of the statistical significant is a specification of the statistical significant in the scores of symptoms. Some mild side effects of unknown were beather per model is a long-term set.	number of pade														
and Hogenry of the QOL of patients, he was a series of the patients with order of the QOL of the QOL of patients, he was a series of the patients with order of the patients of the patients of the patient of the patients of the patient of the patients of the patients of the patient of the patients of the patients of the patient of the patients of the p	and frequency of														
The QUA patients, especially of a patients, especially The mean volume of unite volued showed a statistically significant increase. Only The mean volume of unite statistical effects were observed. The PINS is a successful therapeutic non- invasive method the special patients inprovement in tract dysfunction. There was 1 6 30 NM NM 0.59 20 1°12=12 50 PTNS NRCT OAB significant inprovement in unitary frequency, urge incontinence frequency, urge incontinence informations in the scores of symptoms severity and QOL of OAB and health- related questionmices is significant in the scores of symptoms with 1.3 treatments per month is a long- term significant in the scores of symptoms of unknown relationships to treatment were requence. Some mild side effects of unknown relationships to treatment were requenced. Some mild side effects of unknown reationships to treatment were requenced. Some mild side effects of unknown restreated unknown rest	and frequency of														
In Pacients, especially especially especially patients with OAB improved. The mean of unne of	The OOL of														
<pre>parents, especially patients with OAB improved. The mean volume of unine volided showed a statistically significant increase. Only mid-side effects were observed. The PTNS is a successful therapeutic non-invasive method for patients with certain types of lower uninary tract dysfunction. There was 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 11 improvement in uninary fracted systems in a successful therapeutic non-invasive method for patients with certain types of lower uninary tract dysfunction. There was 1 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 12 (28) and the scores of symptoms severity and QOL of OAB and health related fluctures are in a successful the scores of symptoms reported. PTNS with 1.3 realments per month is a long-term state.</pre>	The QOL of														
expectably patients with OAB improved. The mean owner of urine volume of ur	patients,														
Define with OAB improved. The mean volded showed a statistically significant increase. Only mid-side effects were observed. The PTNS is a successful herapeutic non- invasive method for patients with certain types of lower triany react dysfunction. There was a successful herapeutic non- invasive method for patients with certain types of lower triany requency, urge incontinence frequency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mid side effects of minown realtionship to treatments per month is a long- term safe.	especially														
OND Improved. volume of urine volume of urine volume of urine statistically significat increase. Only mid-side effects were observed. The PTNS is a successful herapticing.I630NMNM0.5-9201*12=1250PTNSNRCT OABPeters 2(28)11There was a significat increase.only were observed.1630NMNM0.5-9201*12=1250PTNSNRCT OAB2012There was a significat increation increations requency, urge incontinence requency, and in the scores of symptoms severity and QCL of OAB and health- related questionnaire.1630NMNM0.5-9201*12=1250PTNSNRCT OAB2010QUe of OAB and health- related questionnaire.1630NMNM0.5-9201*12=1250PTNSNRCT OAB2010Were observed.1630NMNM0.5-9201*12=1250PTNSNRCT OAB2010Were observed.1630NMNM1.41.41.41.41.41.4Were observed.1630NMNM0.5-9201*12=1250PTNSNRCT OAB20.420.420.420.41.41.41.41.41.41.41.41.41.41.41.41.41.41.41.4<	OAD immersed														
Ine mean volume of urine volume	UAB improved.														
voided showed a statistically significant increase. Only mid-side effects of were observed. The PTNS is a successful therapeutic non-invasive method for patients with certain types of lower uniany tract dysfunction. Three was 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 11 OAB 0.5-9 1*12=12 50 PTNS OAB 2012 (28) 1*12=11 inprovement in urinary frequency, urge incontinence frequency, and in the scores of symptoms severity and QOL of OAB and health-related questionnaire. Some mild side effects of unknown relationship to tratter ber momth is a long-term set.	The mean														
voide showed a statistically is ginificant increase. Only mid-side effects were observed. The PTNS is a successful therapeutic non-invasive method for patients with certain types of lower urinary treat dysfunction. The Texns a 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT 0AB 2012 (28) recent types of lower urinary treat dysfunction. There was a significant in the scores of frequency, urge incontinence frequency, urge in the texns of the balance of t	volume of urine														
statistically significant increase. Only mid-side effects were observed. The PTNS is a successful thrapeutic non- invasive method for patients with certain types of lower urinary tract dysfunction. There was a There was a three was a	voided showed a														
significant increase. Only mid-side effects were observed. The PTNS is a successful therapeutic non- invasive method for patients with certain types of lower urinary tract dysfunction. There was a significant improvement in uninary frequency, urge incontinence frequency, urge incontinence frequency, urge in the scores of symptoms severity and QOL of OAB and health- related effects of uknown relationship to the target of the target of the target of the some mild side effects of uknown relationship to the target of the some mild side effects of uknown relationship to the target of the target of the some mild side effects of uknown relationship to the target of the some mild side effects of uknown relationship to the target of the target of the some mild side effects of uknown relationship to the target of the some mild side effects of uknown the target of the target of the some mild side effects of uknown the target of the target of the target of the target of the target	statistically														
indicade frects were observed. The PTNS is a successful therapeutic non- invasive method for patients with certain types of lower urinary tract dysfunction. There was 1 6 30 NM NM 0.5-9 20 1*12=12 50 PTNS NRCT OAB significant improvement in urinary frequency, urge incontinence frequency, and in the scores of symptoms severity and QOL of OAB and health- related effects of uknown relationship to treatments per month is a long- term safe.	significant														
mid-side effects Image: side effects <td>increase. Only</td> <td></td>	increase. Only														
were observed. The PTNS is a successful therapeutic non-invasive method for patients with certain types of lower urinary tract dysfunction. Image: Contract of the contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain types of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of the certain type of lower urinary tract dysfunction. Image: Contract of lower urinary tract dysfunction. Image: Con	mid-side effects														
InterPINS is a successful therapeutic non-invasive method for patients with certain types of lower uninary tract dysfunction. Image: Constraint of the symptoms	were observed.														
successful therapeutic non- invasive method for patients with certain types of lower urinary tract dysfunction. There was a significant improvement in urinary frequency, urge incontinence frequency, urge incontinence frequency, urge uninary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment sper month is a long- term safe.	The PTNS is a														
therapeute non- invasive method for patients with certain types of lower uniary tract dysfunction. I 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters isignificant improvement in uniary frequency, urge incontinence frequency, urge incontinence incontinence severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatment were reported. PTNS is a long- term safe, lower lowe	successful														
Invasive method of or patients with certain types of lower urinary react dysfunction. There was a 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 11 significant 1 6 30 NM NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 11 0AB 2012 (28) requency, urge incontinence frequency, urge mergency, and in the scores of a symptoms severity and QOL of OAB and health- related questionnaire. Some mid side effects of unknown relationship to treatment were reported. PTNS in the state of th	therapeutic non-														
for patients with certain types of lower urinary tract dysfunction. Image: Constraint of the second sec	invasive method														
certain types of lower urinary tract dysfunction. 1 6 30 NM NM 0.5-9 20 1*12=12 50 PTNS NRCT Peters 2012 2012 improvement in urinary frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. I 6 30 NM NM 0.5-9 20 1*12=12 50 PTNS NRCT OAB 2012 2012 208 QOL of OAB and health- related effects of unknown relationship to treatments per month is a long- term safe. I 6 30 NM NM 0.5-9 20 1*12=12 50 PTNS NRCT OAB 2012 2012 (28)	for patients with														
Iower urinary tract dysfunction. Image: second	certain types of														
Tract dysfunction. Image: Constraint of the second sec	lower urinary														
There was a 1 6 30 NM NM NM 0.5-9 20 1*12-12 50 PTNS NRCT Peters 11 improvement in urinary frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	tract dysfunction.														
significant improvement in urinary frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe.	There was a	1	6	30	NM	NM	NM	0.5-9	20	1*12=12	50	PTNS	NRCT	Peters	11
improvement in urinary frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	significant												OAB	2012	
urinary incontinence frequency, urge incontinence frequency, urinary in the scores of emergency, and in the scores of symptoms severity and QOL of OAB and health- related in the scores of guestionnaire. some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- month is a long- text and	improvement in													(28)	
frequency, urge incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	urinary														
incontinence frequency, urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	frequency, urge														
frequency, urinary urinary in the scores of in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- month is a long- term safe,	incontinence														
urinary emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long-	frequency,														
emergency, and in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	urinary														
in the scores of symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	emergency, and														
symptoms severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	in the scores of														
severity and QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	symptoms														
QOL of OAB and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	severity and														
and health- related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	QOL of OAB														
related questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	and health-														
questionnaire. Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	related														
Some mild side effects of unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	questionnaire.														
effects of unknown unknown relationship to reatment were treatment were reported. PTNS with 1.3 treatments per month is a long- term safe, Image: Comparison of the same safe, the same same same same same same same sam	Some mild side														
unknown relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	effects of														
relationship to treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	unknown														
treatment were reported. PTNS with 1.3 treatments per month is a long- term safe,	relationship to														
reported. PTNS with 1.3 treatments per month is a long- term safe,	treatment were														
with 1.3 treatments per month is a long- term safe,	reported. PTNS														
treatments per month is a long- term safe,	with 1.3														
month is a long- term safe,	treatments per														
term safe,	month is a long-														
	term safe,														

п																
	durable and															
	valuable															
	therapeutic															
	mathadita															
	method to															
	significantly															
	maintain the															
	clinical control															
	of the OAB															
	or the Orib															
ŀ	symptoms.			•				0.10	• •	4446 46		DEDIG				
	Sexual	1	4	30	9	0.2	P	0_10	20	1*12=12	83	PTNS		NRCT	Van	12
	dysfunction is													OAB	Balken,et al	
	observed in most														2006	
	of the natients														(62)	
	with lower														(02)	
	with lower															
	urinary tract															
	dysfunction,															
	which may be															
	improved in the															
	recent successful															
	recent successiui															
Ļ	treatment.															
	No significant	1	3	30	9	NM	Р	0_10	20	1*10=10	14	PTNS		NRCT	Zhao	13
	change was													PB	2004	
	observed in the														(70)	
															(70)	
	pain scores, urine															
	voiding															
	frequency, urine															
	volume, and the															
	scores of ICPI															
	ICCL and CE 26															
	ICSI, and SF-50.															
	However, an															
	improvement															
	was observed in															
	some natients															
	some patients.															
	The treatment															
	had no side															
	effects.															
	Intermittent															
	DTNS has no															
	significant															
	clinical effect on															
	patients with															
	refractory IC															
	during 10															
	uuning 10															
ļ	weeks.															
	After stopping	NM	3	30	NM	0.2	Р	0_10	20	3*4=12	11	PTNS		NRCT	van der Pal	14
	treatment for 6													OAB	2006	
	weeks the														(63)	
	weeks, the														(03)	
	frequency and															
	severity of															
	incontinence															
	worsened															
	significantly															
	(r (0.05) After															
1	(p<0.05). After															
1	retreatment, the															
1	number of															
1	incontinence															
1	enisodes															
1	incontinenes,															
1	incontinence															
ļ	severity, as well															
1	as the QOL															
1	improved															
1	significantly															
1	(n < 0.05) Th															
1	(p<0.05). The															
1	mean voided															
1	volume was															
ļ	significantly															
1	worsened and it															
1	worscheu allu it															
1	was significantly															
	improved during												l I	1		l I
I	improved during															
	the retreatment															

period (p<0.05).														
Continued														
treatment is														
considered														
necessary in														
OAB patients														
who have been														
who have been														
successfully														
treated with														
PINS. The														
PTNS can be														
made effective														
again in patients														
who have already														
been successfully														
treated.														
Daily	1	1	30	9	0.2	Μ	0 10	20	1*6=6	30	PTNS	NRCT	Yoong	15
incontinence							_					OAB	2013	
frequency and													(65)	
daily urge													(00)	
incontinence														
fraguanay during														
2 years were														
statistically														
similar to the														
recorded cases														
within 6 weeks														
and remained														
less than the														
baseline level.														
No side effects														
other than														
hypoesthesia														
were reported.														
Women who														
received PTNS														
for refrectory														
OAB syndrome														
during 2 years,														
reported														
significant														
symptom relief.														
PTNS is an														
excellent safe														
durable														
therapeutic														
method in the														
second line of														
treatment														
No statistically	NM	3	30	9	NM	Р	0 10	20	2*5-10	18	PTNS	NRCT	Zhao	16
significant	1 11/1				1,11,1	-	0_10	20	2 0-10	10	1110	PR	2008	10
improvement												10	2000	
													(09)	
was observed in														
VAS. The scores														
of ICPI, ICSI,														
and SF-36 were														
improved														
significantly. No														
significant														
difference was														
observed in the														
diary index and														
SF-36 scores														
between the two														
groups and														
before and after														
treatment Out of														
18 patients the														
hladdarra														
bladder volume														
had a statistically														

significant														
improvement in														
8 patients who														
evaluated the														
trial to be														
effective. All														
patients														
completed the 10														
uithout onu side														
without any side														
Intermittent														
PTNS may be an														
alternative														
therapy for														
patients with IC														
symptoms.														
A significant	NM	5	30	NM	NM	Μ	0, 10	20	28	10	Intravesical	NRCT	Baykal	17
improvement											heparin +	Non-	2005	
was observed in											PTNS	ulcer	(66)	
the maximum												IC		
bladder capacity														
and pain														
symptoms. The														
heparin and														
peripheral														
neuromodulation														
combination														
seems to be an														
alternative for														
patients with														
refractory IC.														
The mean daily	2	1	30	NM	0.2	Μ	0_10	20	1*12=12	53	PTNS	NRCT	Govier	18
urine voiding and												OAB	2001	
urge													(53)	
incontinence														
25% and 25%														
25% and 55%,														
(n<0.05)														
Statically														
significant														
improvements														
were observed in														
the pain and														
QOL indices. No														
significant side														
effects were														
observed in														
Parcutaneous														
peripheral														
afferent nerve														
stimulation is a														
safe, minimally														
invasive and														
effective therapy														
for treating														
refractory OAB														
and/or pelvic														
floor														
Subjective	1	1	30	0	0.2	D	0 10	20	1*12-12	83	DTNG	NRCT	van Rallzon	10
Success was seen	1	4	50	,	0.2	I	0_10	20	1 12-12	05	1113	OAR	van Daiken 2006	19
in 51.5% of												UAD	(61)	
patients. The SF-														
36 total score														
was low. The														
												1		

scored worse on														
.1 11														
the disease-														
ine disease-														
specific QUL														
questionnaire,														
though the														
disease severity														
was not different.														
PTNS may be														
used as a tool for														
nouromodulation														
neuromodulation														
therapy in														
patients.														
Twelve and all	1	6	30	9	NM	NM	NM	NM	1*12-12	14	PTNS	NRCT	Canitanucci	20
14 potionts with	-	v		-	1,11,1	1,11,1	1 (1) 1	1,11,1			1110	OAP	2000	
14 patients with												UAD	2009	
dysfunctional													(49)	
voiding were														
improved (p not														
significant)														
significant).														
During 1 year of														
follow-up, the														
dysfunctional														
· 1·														
voiding was														
improved greater														
in OAB patients														
(7104 yr 4104)														
(/1% VS 41%)														
and the														
improvement														
remained the														
same at the 2-														
year evaluation.														
The voided														
volume and post-														
volume and post-														
void residual														
urine became														
normal in most														
of the nationts														
of the patients														
with														
dysfunctional														
voiding PTNS is														
voiding. PTNS is														
voiding. PTNS is reliable and														
voiding. PTNS is reliable and effective for														
voiding. PTNS is reliable and effective for nonneurogenic														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children The														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones.														
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones.	1	2	30	0	0.2	M	0.10	20	12	90	PTNS	NRCT	Vandoninek	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective	1	2	30	9	0.2	M	0_10	20	12	90	PTNS	NRCT	Vandoninck	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was	1	2	30	9	0.2	M	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24 hour	1	2	30	9	0.2	M	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages,	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively.	1	2	30	9	0.2	M	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume	1	2	30	9	0.2	Μ	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and OOL scores	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved significantly (P <	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved significantly (P < 0.01).	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved significantly (P < 0.01). Cystometric	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21
voiding. PTNS is reliable and effective for nonneurogenic refractory lower urinary tract dysfunction in children. The PTNS efficacy seems to be better in dysfunctional voiding cases than in the OAB ones. The objective and subjective success rate was 56% and 64% in 24-hour leakages, respectively. Urine voiding frequency in terms of volume chart data and QOL scores improved significantly (P < 0.01). Cystometric	1	2	30	9	0.2	М	0_10	20	12	90	PTNS	NRCT OAB	Vandoninck 2003 (64)	21

(p=0.043) and														
bladder volume														
(p=0.012)														
increased														
significantly														
PTNS cannot														
abolish Detrusor														
instability but it														
increases														
cystometric														
capacity and														
delays the onset														
of Detrusor														
instability. PTNS														
can be useful in														
the cystometry of														
patients without														
Detrusor														
instability or														
with late														
Detrusor														
instability onset														
The secres of the	2	NIN	20	0	0.2	р	0 10	10	2*6-12	11	DTNC	NDCT	Ficebor	22
health ralated	2	ININI	50	9	0.2	r	0_10	10	2.0=12	11	r INS		r ischer-	44
nealth-related												OAB	Sgrott	
questionnaire and													2009	
ICIQ-SF were													(52)	
improved														
significantly.														
PTNS can be														
considered as a														
good alternative														
to OAB therapy														
because it is safe														
and inexpensive														
as compared to														
other therapeutic														
methods and														
improves the														
OOL in women														
with refractory														
OAB														
At 6 12 and 24	1	1	30	0	0.2	м	0 10	20	14	53	DTNS	Cohort	Marchal	23
At 0, 12, allu 24	1	-	30	9	0.2	IVI	0_10	20	14	55	I INS			23
fallow up												UAD	(71)	
10110w-up,													(71)	
92.4%, 91.69%,														
and 62.5% of														
patients														
improved,														
respectively.														
Night-time														
urination														
frequency (P \leq														
.05) and QOL (P														
$\leq .01$) were														
significantly														
worsened. By the														
end of therapy.														
the first sensation														
of bladder filling														
increased. The														
mean post-														
therapy bladder														
canacity														
increased by 72.7														
mL ($P < 0.01$)														
$\frac{1112}{PTNS is a good}$														
ontion for OAR														
therapy														
According to the	1	3	30	NM	0.2	р	2.5.9	20	1*12-12	1	PTNS	NRCT	Putel	24
urinary dairy		5	50	1 4141	0.2			20	1 14-14		1110	OAR	2018	
armary dairy,												0.10	2010	

·														((0))	
incontinence														(00)	
frequency,															
frequent															
urination, and															
tendency to															
urinate															
improved.															
Urodynamic															
orodynamic															
examination															
showed no															
significant															
change in the															
target															
parameters. No															
side effects were															
observed PTNS															
is an effective,															
minimally															
invasive,															
tolerable and safe															
therapy for OAB															
syndrome.															
Daily urine	1	6	30	NM	0.2	Р	15	20	1*12=12	39	PTNS		NRCT	Kabay	25
voiding and daily	-	Ŭ	20			-					1 11.0		PR	2021	
emergency													10	(67)	
fragueray														(07)	
doorsood by 2.8															
decreased by 5.8															
and 4. / times,															
respectively, and															
pain intensity,															
symptoms, and															
problem index															
showed a															
statistically															
significant															
imment															
The second secon															
The changes in															
the mean volume															
of urine voided															
were not															
statistically															
significant. The															
voiding volume															
improved by 8.4															
mL on average															
In notionts with															
in patients with															
painful bladder															
syndrome, the															
urine voiding															
diary, and scores															
of the ICSI, ICPI,															
and VAS															
improved after															
12 weeks of															
PTNS treatment.															
The PTNS															
treatment is a															
ucathent is a															
themest															
inerapeutic															
option in the first															
line of the															
treatment to															
improve the															
symptoms of the															
painful bladder															
syndrome.															
NRCT: Non-rande	omized	contro	olled tr	ial, RC	T: Ran	domized	control	led tria	l, OAB: ov	eractiv	ve bladder synd	lrome	, PB: pain	ful bladder	
syndrome, NM: N	ot men	tioned	PTNS	: Percu	itaneou	ıs tibial r	erve sti	mulatio	on, TTNS: 1	Fransc	utaneous tibial	nerve	e stimulati	on, P: P-value,	
GRA: Global Res	ponse A	Assessn	1ent, I	CPI: In	terstiti	al Cystiti	is Proble	em Ind	ex, IC/BPS	Inters	titial Cystitis/P	ainful	Bladder,	LUTS: Lower	

Urinary Tract Syndrome, S3: Sacral spinal nerve 3, ICSI: Interstitial Cystitis Symptom Index, SF_36: Short form with 36 questions, VAS: Visual Analogue Scale



Appendix 3. Voiding frequency after treatment according to the surface method stimulation and electrode placement

		After		В	efore			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
3.4.1 Movement threshold									
Alve, A. T 2020	7.84	2.84	39	11.81	3.73	39	12.0%	-3.97 [-5.44, -2.50]	_
Jacomo, R. H 2020	6.66	5	25	7.3	7.4	25	4.5%	-0.64 [-4.14, 2.86]	
Martin-Gracia, M. 2018	7.7	2.8	12	8.5	1.9	12	9.7%	-0.80 [-2.71, 1.11]	
Subtotal (95% CI)			76			76	26.2%	-2.02 [-4.48, 0.43]	
Heterogeneity: Tau ² = 3.39;	Chi² = 7	7.93, di	f= 2 (P	= 0.02);	; ² = 7 !	5%			
Test for overall effect: Z = 1.	.61 (P =	0.11)							
3.4.2 Sensory threshold									
Zonić-Imamović, M. 2021	9.4	3.4	30	12.9	4.4	30	9.3%	-3.50 [-5.49, -1.51]	
Subtotal (95% CI)			30			30	9.3%	-3.50 [-5.49, -1.51]	
Heterogeneity: Not applical	ble								
Test for overall effect: Z = 3.	.45 (P =	0.0008	ō)						
3.4.3 Pain threshold									
Abulseoud, A 2018	10.6	2.32	15	13.3	1.64	15	12.2%	-2.70 [-4.14, -1.26]	
Bacchi 2021	7.1	3.24	52	9.9	3.24	52	13.4%	-2.80 [-4.05, -1.55]	
Bykoviene 2018	7.52	2.3	22	8.86	3.24	22	11.0%	-1.34 [-3.00, 0.32]	
Pierre, M. L. 2021	8.4	3.9	26	11	6.3	26	6.1%	-2.60 [-5.45, 0.25]	
Ramirez-Garcia, I. 2018	9	2.7	34	10.6	3.8	34	11.5%	-1.60 [-3.17, -0.03]	
Welk 2020	10	1.48	26	9.66	4.44	26	10.2%	0.34 [-1.46, 2.14]	 +
Subtotal (95% CI)			175			175	64.5%	-1.81 [-2.77, -0.86]	•
Heterogeneity: Tau ² = 0.69;	Chi² = 9	3.96, di	f = 5 (P	= 0.08);	; ² = 5()%			
Test for overall effect: Z = 3.	.72 (P =	0.0002	2)						
Total (95% CI)			284			281	100 0%	2 07 [2 03 . 1 21]	▲
Hotorogonoitu: Tou 2 – 4,000	ObiZ-1	0.70	201 df= 0.4	0 - 0.04	V 1 2 4	201	100.070	-2:91 [-2:99, -1:21]	— — — — — — — — — —
Test for everall effect: 7 = 4	UNC=2 7470-2	20.70,1 0.0002	ui=9 (i)4 \	F = 0.01	ле=;	07 70			-4 -2 0 2 4
Test for overall effect: $Z = 4$.	.74 (P <	0.0000	. 46	VD - 0 (201 12	44.00	,		After Before
i est for subgroup afferenc	es: Unif	= 2.25), at = 2	: (P = 0.)	33), I* =	= 11.0%	0		

Appendix 4. Voiding frequency after treatment according to the surface method stimulation and intensity of electrical stimulation

		After		E	Before			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
4.5.1 24<									
Klingler, H. C.2000 Subtotal (95% Cl)	188	41.5	15 15	133	31.66	15 15	10.2% 10.2%	55.00 [28.58, 81.42] 55.00 [28.58, 81.42]	
Heterogeneity: Not appli	icable								
Test for overall effect: Z:	= 4.08 (P	< 0.000	D1)						
4.5.3 12-24									
Capitanucci, M 2009	137	91	14	168	62	14	4.2%	-31.00 [-88.68, 26.68]	
Finazzi-Agro, E. 2010	186.5	8.51	18	150.5	7.91	18	15.7%	36.00 [30.63, 41.37]	+
Kabay, S. 2021	149.2	23.7	39	140.8	22.1	39	14.8%	8.40 [-1.77, 18.57]	+
MacDiarmid, S. 20010	187	87	33	145	78	33	6.9%	42.00 [2.13, 81.87]	
Peters 2009	183	75.6	110	169.5	78.9	110	11.9%	13.50 [-6.92, 33.92]	+
Rajab, M. 2015	141	36.26	20	131.8	35.37	20	11.4%	9.20 [-13.00, 31.40]	-
Vanbalken, M. 2001	159.3	65.14	37	140	82.2	37	8.2%	19.30 [-14.49, 53.09]	
van der Pal, F. 2006	187.5	100.6	11	107.6	51.5	11	3.4%	79.90 [13.11, 146.69]	│ ————→
Vandoninck, V. 2003	190	60.5	90	135	51.16	90	13.2%	55.00 [38.63, 71.37]	
Subtotal (95% CI)			372			372	89.8%	25.26 [10.64, 39.88]	
Heterogeneity: Tau ² = 31	10.36; CI	hi² = 44.	14, df=	:8 (P <	0.00001); ² = 8	2%		
Test for overall effect: Z	= 3.39 (F	= 0.000	07)						
Total (95% CI)			387			387	100.0%	28.28 [14.43, 42.13]	◆
Heterogeneity: Tau ² = 30	09.86; CI	hi² = 47.	49, df=	:9(P<	0.00001); ² = 8	1%		
Test for overall effect: Z:	= 4.00 (P	< 0.000	D1)	,					-100 -50 0 50 100
Test for subgroup differe	ences: C	hi² = 3.7	73, df =	1 (P = 0).05), I ² :	= 73.29	6		Aller Belore

Appendix 5. Voided volume after treatment according to the needle method in all studies and considering subgroups of treatment duration

		After		I	Before			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
4.1.1 Method 1									
Finazzi-Agro, E. 2010	186.5	8.51	18	150.5	7.91	18	15.7%	36.00 [30.63, 41.37]	+
Rajab, M. 2015	141	36.26	20	131.8	35.37	20	11.4%	9.20 [-13.00, 31.40]	
Subtotal (95% CI)			38			38	27.1%	24.85 [-1.04, 50.74]	~
Heterogeneity: Tau² = 2	91.22; Cl	ni² = 5.2	9, df =	1 (P = 0	.02); I² =	:81%			
Test for overall effect: Z	= 1.88 (F	'= 0.06)	I						
4.1.2 Method 2									
Klingler, H. C.2000	188	41.5	15	133	31.66	15	10.2%	55.00 [28.58, 81.42]	
Vandoninck, V. 2003	190	60.5	90	135	51.16	90	13.2%	55.00 [38.63, 71.37]	
Subtotal (95% Cl)			105			105	23.3%	55.00 [41.09, 68.91]	•
Heterogeneity: Tau² = 0 Test for overall effect: Z	.00; Chi² = 7.75 (F	= 0.00, ' < 0.00	df = 1 (001)	P = 1.00)); ² = 0	%			
4.1.3 Method 3									
MacDiarmid, S. 20010	187	87	33	145	78	33	6.9%	42.00 [2.13, 81.87]	
Peters 2009	183	75.6	110	169.5	78.9	110	11.9%	13.50 [-6.92, 33.92]	+
Vanbalken, M. 2001	159.3	65.14	37	140	82.2	37	8.2%	19.30 [-14.49, 53.09]	-
van der Pal, F. 2006	187.5	100.6	11	107.6	51.5	11	3.4%	79.90 [13.11, 146.69]	
Subtotal (95% CI)			191			191	30.5%	26.96 [5.48, 48.44]	•
Heterogeneity: Tau² = 1 Test for overall effect: Z	63.96; Cl = 2.46 (F	ni² = 4.5 1 = 0.01)	4, df =	3 (P = 0	.21); I² =	: 34%			
4.1.4 Method 6									
Capitanucci, M 2009	137	91	14	168	62	14	4.2%	-31.00 [-88.68, 26.68]	
Kabay, S. 2021	149.2	23.7	39	140.8	22.1	39	14.8%	8.40 [-1.77, 18.57]	
Subtotal (95% Cl)			53			53	19.1%	-0.65 [-33.13, 31.83]	
Heterogeneity: Tau² = 3	29.68; CI	ni² = 1.7	4, df=	1 (P = 0	.19); I² =	:42%			
Test for overall effect: Z	= 0.04 (F	'= 0.97)	I						
Fotal (95% CI)			387			387	100.0%	28.28 [14.43, 42.13]	◆
Heterogeneity: Tau ² = 3	09.86; CI	ni² = 47.	49, df=	:9(P <	0.00001	l); l² = 8	31%	-	
Test for overall effect: Z	= 4.00 (F	< 0.00	D1)	•					-100 -50 U 50 100
Test for subaroup differ	ences: C	hi ² = 13	16. df:	= 3 (P =	0.004).	² = 77.	.2%		Alter Belore

Appendix 6. Voided volume after treatment according to the needle method in all studies and considering needle placement

		After		I	Before			Mean Difference		Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl]	V, Random, 95% Cl
4.7.1 Motor threshold										
Klingler, H. C.2000	188	41.5	15	133	31.66	15	10.5%	55.00 [28.58, 81.42]		
MacDiarmid, S. 20010	187	87	33	145	78	33	7.0%	42.00 [2.13, 81.87]		
Peters 2009	183	75.6	110	169.5	78.9	110	12.5%	13.50 [-6.92, 33.92]		+
Vanbalken, M. 2001	159.3	65.14	37	140	82.2	37	8.4%	19.30 [-14.49, 53.09]		
Vandoninck, V. 2003	190	60.5	90	135	51.16	90	13.8%	55.00 [38.63, 71.37]		
Subtotal (95% CI)			285			285	52.3%	37.53 [17.53, 57.52]		
Heterogeneity: Tau ² = 3	(33.43; CI	hi ^z = 12.	.38, df=	: 4 (P =	0.01); I ^z	= 68%				
Test for overall effect: Z	= 3.68 (P	P = 0.00	02)							
4.7.2 Sensory threshol	d									
Subtotal (95% CI)			0			0		Not estimable		
Heterogeneity: Not app	licable									
Test for overall effect: N	lot applic:	able								
4.7.3 Pain Threshold										
Finazzi-Agro, E. 2010	186.5	8.51	18	150.5	7.91	18	16.8%	36.00 [30.63, 41.37]		+
Kabay, S. 2021	149.2	23.7	39	140.8	22.1	39	15.7%	8.40 [-1.77, 18.57]		+ •
Rajab, M. 2015	141	36.26	20	131.8	35.37	20	11.9%	9.20 [-13.00, 31.40]		
van der Pal, F. 2006	187.5	100.6	11	107.6	51.5	11	3.4%	79.90 [13.11, 146.69]		\rightarrow
Subtotal (95% CI)			88			88	47.7%	23.73 [2.30, 45.16]		
Heterogeneity: Tau ² = 3	41.91; CI	hi² = 27.	.56, df =	:3 (P <	0.00001	l); l² = 8	39%			
Test for overall effect: Z	= 2.17 (P	P = 0.03))							
Total (95% CI)			373			373	100.0%	30.81 [17.06, 44.55]		•
Heterogeneity: Tau ² = 2	86.13; CI	hi² = 43.	.07, df=	:8 (P <	0.00001	l); l² = 8	31%			
Test for overall effect: Z	= 4.39 (P	< 0.00	01)	· •					-100 -50	0 50 100 After Defere
Test for subaroup differ	rences: C	hi ² = 0.8	85, df =	1 (P = (),36), ² :	= 0%				Aller Belore

Appendix 7. Voided volume after treatment according to the needle method in all studies and considering electrical stimulation threshold

		After		E	Before			Mean Difference		Mean Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl		IV, Random, 95% Cl	
6.5.1 24<											
Subtotal (95% Cl)			0			0		Not estimable			
Heterogeneity: Not applic	able										
Test for overall effect: Not	t applicat	ole									
6.5.3 12-24											
Abulseoud, A 2018	138	37.79	15	110.4	14.92	15	60.6%	27.60 [7.04, 48.16]			
Boudaoud, N. 2015	265.6	120.7	11	184.2	102.6	11	5.2%	81.40 [-12.22, 175.02]			\rightarrow
Ramirez-Garcia, I. 2018	165.9	67	34	158.1	67.2	34	34.3%	7.80 [-24.10, 39.70]			
Subtotal (95% CI)			60			60	100.0%	23.58 [1.91, 45.26]			
Heterogeneity: Tau ² = 91.	.90; Chi ^z	= 2.55,	df = 2 (P = 0.28	l); l² = 22	2%					
Test for overall effect: Z =	2.13 (P =	= 0.03)									
Total (95% CI)			60			60	100.0%	23.58 [1.91, 45.26]			
Heterogeneity: Tau ² = 91.	.90; Chi ^z	= 2.55,	df = 2 (P = 0.28); ² = 22	2%					
Test for overall effect: Z =	2.13 (P =	= 0.03)	,						-100 -50	U 5U Affor Refere	100
Test for subgroup differe	, nces: No	t applic	able							Aller Delute	

Appendix 8. Voided volume after treatment according to the surface method and considering electrical stimulation duration

	After		I	Before			Mean Difference	Mean Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
6.1.1 Method 1									
Subtotal (95% CI)			0			0		Not estimable	
Heterogeneity: Not ap	plicable								
Test for overall effect:	Not appli	cable							
6.1.2 Method 2									
Boudaoud, N. 2015	265.6	120.7	11	184.2	102.6	11	12.5%	81.40 [-12.22, 175.02]	
Subtotal (95% CI)			11			11	12.5%	81.40 [-12.22, 175.02]	
Heterogeneity: Not ap	plicable								
Test for overall effect:	Z=1.70 ((P = 0.)	09)						
6.1.3 Method 3									
Subtotal (95% CI)			0			0		Not estimable	
Heterogeneity: Not ap	plicable								
Test for overall effect:	Not appli	cable							
6.1.4 Method 6									
Abulseoud, A 2018	138	37.79	15	110.4	14.92	15	87.5%	27.60 [7.04, 48.16]	
Subtotal (95% CI)			15			15	87.5%	27.60 [7.04, 48.16]	
Heterogeneity: Not ap	plicable								
Test for overall effect:	Z = 2.63 ((P = 0.)	009)						
		-				-			
Total (95% CI)			26			26	100.0%	34.32 [-0.54, 69.18]	
Heterogeneity: Tau² =	251.50; (Chi ^z = 1	1.21, di	f = 1 (P :	= 0.27);	$ ^2 = 179$	Хо		
Test for overall effect:	Z = 1.93 ((P = 0.)	05)						After Before
Test for subgroup diff	erences:	Chi²=	1.21, d	lf = 1 (P	= 0.27),	l²=17	.4%		

Appendix 9. Voided volume after treatment according to the surface method and considering the needle placement

		After		E	Before			Mean Difference		Mean I)ifference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl		IV, Rand	om, 95% Cl		
6.7.1 Motor threshold													
Subtotal (95% CI)			0			0		Not estimable					
Heterogeneity: Not applica	able												
Test for overall effect: Not :	applicat	ole											
6.7.2 Sensory threshold													
Subtotal (95% CI)			0			0		Not estimable					
Heterogeneity: Not applica	able												
Test for overall effect: Not :	applicat	ole											
6.7.3 Pain Threshold													
Abulseoud, A 2018	138	37.79	15	110.4	14.92	15	60.6%	27.60 [7.04, 48.16]				_	
Boudaoud, N. 2015	265.6	120.7	11	184.2	102.6	11	5.2%	81.40 [-12.22, 175.02]		-			→
Ramirez-Garcia, I. 2018	165.9	67	34	158.1	67.2	34	34.3%	7.80 [-24.10, 39.70]					
Subtotal (95% CI)			60			60	100.0%	23.58 [1.91, 45.26]				-	
Heterogeneity: Tau ² = 91.9	0; Chi²÷	= 2.55,	df = 2 (P = 0.28); i² = 22	2%							
Test for overall effect: Z = 2	2.13 (P =	= 0.03)											
Total (95% CI)			60			60	100.0%	23.58 [1.91, 45.26]				-	
Heterogeneity: Tau ² = 91.9	90; Chi²÷	= 2.55,	df = 2 (P = 0.28); i² = 23	2%			100	50	<u> </u>	50	100
Test for overall effect: Z = 2	2.13 (P =	= 0.03)							-100	-JU Affe	r Before	00	100
Test for subgroup differen	ces: Not	t applic:	able							Alle	Denote		

Appendix 10. Voided volume after treatment according to the surface method and considering the stimulation threshold

Appendix 11. Urinary incontinence, urgency, maximum cyctometric capacity, and urgency urinary incontinence

The other outcomes related to the efficacy of different methods of PTNS results are summarized in supplementary files. According to the results of the electrode method, nine studies in subgroups of methods 3, 2, 1, and 6 were included in the meta-analysis. After treatment, a reduction of incontinence episodes was demonstrated (Point estimate: -2.18; 95% CI: -1.54 to -2.81, P<0.00001, Z = 6.70). The intensity of the stimulation at the level of stimulation of the motor threshold and pain causes improvement and a significant decrease in the average frequency of urine leakage. In the surface method of stimulation electrode method 5 significantly reduced the UI episodes. However, in method 1 there was no significant reduction. The mean difference of urinary incontinence after treatment according to the surface method and considering the stimulation threshold decreased by 0.83 times (95% CI: -1.41 to -0.26) and this rate was statistically significant, P=0.005). However, in subgroup analysis, this rate was only significant in the pain threshold (Supplementary files 2 a-d).

The results of different method of stimulation on urgency episodes are illustrated in figures Supplementary files 2 e-g.

Although the mean difference of the maximum cystometric capacity after treatment with this stimulation was increased (58.24 ml, P<0.003); I2=78.0%), only, the first and fourth methods of electrodeposition improved the average maximum cystometric capacity (supplementary file 2h, and i).

Considering that the frequency of urgency urinary incontinence (UUI), in 14 studies, a reduction in the frequency of UUI was observed (Point estimate: -1.23 times (95% CI: -0.57 to -1.88, P = 0.0002. Methods 1, 3, and 6 of electrode placement significantly reduced the mean UUI (supplementary file 2g). In the surface method, electrode placement in methods of 1,2, and 5 significantly reduced the mean of UUI (supplementary file 2h). Stimulation at the threshold of movement and pain caused a significant decrease in the mean of UUI episodes (supplementary file 2j-l).

	After		E	Before			Mean Difference	Mean Difference	
Study or Subgroup	Mean SD Totai			Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
9.1.1 Method 1									
Finazzi-Agro, E. 2010	1.8	0.16	17	4.1	0.31	17	20.1%	-2.30 [-2.47, -2.13]	•
Fischer-Sgrott, F. O 2009	38.18	13.82	11	74.55	27.75	11	0.1%	-36.37 [-54.69, -18.05] 👎	
Preyer, O., et al. 2015	2	3.5	18	1.5	2	18	7.4%	0.50 [-1.36, 2.36]	+
Subtotal (95% CI)			46			46	27.7%	-2.61 [-6.76, 1.54]	
Heterogeneity: Tau ² = 8.97;	Chi ² = 2	1.92, di	f = 2 (P	< 0.000	1); ² = 9	91%			
Test for overall effect: Z = 1.	23 (P = I	0.22)							
9.1.2 Method 2									
Vandoninck, V. 2003	2	2.66	90	5	3	90	15.2%	-3.00 [-3.83, -2.17]	T
Subtotal (95% CI)			90			90	15.2%	-3.00 [-3.83, -2.17]	•
Heterogeneity: Not applicat	ole								
Test for overall effect: $Z = 7$.	10 (P < I	0.00001	I)						
9.1.3 Method 3									
Sherif 2017	2.6	0.7	30	4.7	1.02	30	18.6%	-2.10 [-2.54]-1.66]	•
Sonmez, R. 2022	1.15	1.34	19	4.31	3.3	19	8.9%	-3.16 [-4.76, -1.56]	- -
Ugurlucan 2013	1.4	1.5	17	2.4	2.3	17	11.0%	-1.00 [-2.31, 0.31]	
Vanbalken, M. 2001	5	3.46	37	9.8	5.6	37	6.2%	-4.80 [-6.92, -2.68]	_ - _
van der Pal, F. 2006	3.1	4.9	11	7.4	12	11	0.7%	-4.30 [-11.96, 3.36]	
Subtotal (95% CI)			114			114	45.4%	-2.53 [-3.64, -1.41]	•
Heterogeneity: Tau ² = 0.84;	Chi ² = 1	0.85, dt	f = 4 (P	= 0.03);	2 = 63°	%			
Test for overall effect: Z = 4.	45 (P < I	0.00001	I)						
0.4.4.1.4.4.0									
9.1.4 Method 6									
Onal 2012 Subtotol (05% CI)	0.9	1.4	18	2.1	2.2	18	11.8%	-1.20 [-2.40, 0.00]	—
Subiotal (95% CI)			18			18	11.8%	-1.20 [-2.40, 0.00]	•
Heterogeneity: Not applicat)1e 05 (D - 1	0.00							
Test for overall effect: $Z = 1$.	90 (P = 1	0.05)							
Total (95% CI)			268			268	100.0%	-2.18 [-2.81, -1.54]	◆
Heterogeneity: Tau ² = 0.52:	Chi ² = 3	9.07. di	f = 9 (P	< 0.000	1); ² =)	77%		-	
Test for overall effect: Z = 6.	70 (P < 1	0.00001	I) - (<u> </u>				-10 -5 0 5 10
Test for subgroup differenc	es: Chi²	= 5.85.	df = 3 ((P = 0.1)	2), ² = 4	8.7%			Aller Beidie

Appendix 11a. Incontinence episodes after treatment in different methods of stimulation

Method 1: The first electrode is placed 3-5 cm above the medial malleolus, and the second electrode is placed around the medial malleolus.

Method 2: The first electrode is placed less than 3 cm above the medial malleolus, and the second electrode is placed around the medial malleolus.

Method 3: The first electrode is placed 3-5 cm above the medial malleolus, and the second electrode is placed on the arch of the foot.

Method 4: The first electrode is placed less than 3 cm above the medial malleolus, and the second electrode is placed on the arch of the foot.

Method 5: The first electrode is placed more than 5 cm above the medial malleolus, and the second electrode is placed around the medial malleolus.

Method 6: Both electrodes are placed on the tibial nerve on the foot at points other than the defined methods.

		After		E	Sefore			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
9.2.1 Motor threshold									
Onal 2012	0.9	1.4	18	2.1	2.2	18	11.8%	-1.20 [-2.40, 0.00]	+
Sherif 2017	2.6	0.7	30	4.7	1.02	30	18.6%	-2.10 [-2.54, -1.66]	•
Ugurlucan 2013	1.4	1.5	17	2.4	2.3	17	11.0%	-1.00 [-2.31, 0.31]	•
Vanbalken, M. 2001	5	3.46	37	9.8	5.6	37	6.2%	-4.80 [-6.92, -2.68]	+
Vandoninck, V. 2003	2	2.66	90	5	3	90	15.2%	-3.00 [-3.83, -2.17]	•
Subtotal (95% CI)			192			192	62.8 %	-2.24 [-3.12, -1.36]	•
Heterogeneity: Tau ² = 0.67	'; Chi² = 1	5.43, di	i= 4 (P	= 0.004); ² = 74	1%			
Test for overall effect: Z = 4	l.99 (P < (D.00001)						
9.2.2 Pain Threshold									
Finazzi-Agro, E. 2010	1.8	0.16	17	4.1	0.31	17	20.1%	-2.30 [-2.47, -2.13]	•
Fischer-Sgrott, F. O 2009	38.18	13.82	11	74.55	27.75	11	0.1%	-36.37 [-54.69, -18.05]	←
Preyer, O., et al. 2015	2	3.5	18	1.5	2	18	7.4%	0.50 [-1.36, 2.36]	+
Sonmez, R. 2022	1.15	1.34	19	4.31	3.3	19	8.9%	-3.16 [-4.76, -1.56]	+
van der Pal, F. 2006	3.1	4.9	11	7.4	12	11	0.7%	-4.30 [-11.96, 3.36]	
Subtotal (95% CI)			76			76	37.2%	-2.38 [-4.59, -0.17]	•
Heterogeneity: Tau ² = 3.65	i; Chi ² = 2	3.33, di	í = 4 (P	= 0.000	1); ² = {	33%			
Test for overall effect: Z = 2	2.11 (P = 0	D.O3)							
Total (95% CI)			268			268	100.0%	-2.18 [-2.81, -1.54]	
Heterogeneity: Tau ² = 0.52	; Chi² = 3	9.07, di	í = 9 (P	< 0.000	1); I² =)	77%			
Test for overall effect: Z = 6	6.70 (P < (0.00001)						-20 -10 0 10 20 After Petere
Test for subgroup differen	ces: Chi²	= 0.01,	df=1((P = 0.90)), I² = 0	%			Allei Deluie

Appendix 11b. Incontinence episodes after treatment in different stimulation threshold

		After		в	efore			Mean Difference		Mean Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	1	V, Random, 95%	Cl
10.1.1 Method 1										·	
Martin-Gracia, M. 2018	0.2	1.7	12	0.5	1	12	31.6%	-0.30 [-1.42, 0.82]			
Subtotal (95% CI)			12			12	31.6%	-0.30 [-1.42, 0.82]			
Heterogeneity: Not appl	icable										
Test for overall effect: Z	= 0.53 (P	= 0.60))								
10.1.2 Method 5											
Bykoviene 2018	2.89	4.83	22	3.84	4.63	22	5.0%	-0.95 [-3.75, 1.85]			_
Pierre, M. L. 2021	0.7	1.4	26	1.8	1.5	26	63.3%	-1.10 [-1.89, -0.31]	-		
Subtotal (95% CI)			48			48	68.4%	-1.09 [-1.85, -0.33]		~	
Heterogeneity: Tau ² = 0.	.00; Chi ² :	= 0.01	. df = 1	(P = 0.9)2); ² =	:0%					
Test for overall effect: Z	= 2.81 (P	= 0.0)5)								
Total (95% CI)			60			60	100.0%	-0.84 [-1.47, -0.21]		•	
Heterogeneity: Tau ² = 0.	.00; Chi ² :	= 1.32	. df = 2	(P = 0.5	52); ² =	:0%			— <u>i i i i </u>		<u> </u>
Test for overall effect: Z:	= 2.62 (P	= 0.01)9)						-4 -2	U Aftar Dafara	2
	v		/							Aller Belore	

Test for subgroup differences: Chi² = 1.31, df = 1 (P = 0.25), l² = 23.8%

Appendix 11c. Incontinence episodes after treatment according to the surface method and considering the needle placement

	After Before							Mean Difference	Mean Difference					
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl					
10.2.1 Motor threshold														
Martin-Gracia, M. 2018	0.2	1.7	12	0.5	1	12	26.7%	-0.30 [-1.42, 0.82]						
Subtotal (95% CI)			12			12	26.7%	-0.30 [-1.42, 0.82]						
Heterogeneity: Not applic	able													
Test for overall effect: Z =	0.53 (P =	= 0.60)												
10.2.2 Pain threshold														
Bykoviene 2018	2.89	4.83	22	3.84	4.63	22	4.2%	-0.95 [-3.75, 1.85]						
Pierre, M. L. 2021	0.7	1.4	26	1.8	1.5	26	53.4%	-1.10 [-1.89, -0.31]						
Ramirez-Garcia, I. 2018	0.9	2.9	34	1.7	3.2	34	15.7%	-0.80 [-2.25, 0.65]	- _					
Subtotal (95% CI)			82			82	73.3%	-1.03 [-1.70, -0.35]	◆					
Heterogeneity: Tau ² = 0.0	0; Chi² =	0.13,	df = 2 (i	P = 0.94	$); ^{2} = ($)%								
Test for overall effect: Z =	2.99 (P =	: 0.003	3)											
Total (95% CI)			94			94	100.0%	-0.83 [-1.41, -0.26]	◆					
Heterogeneity: Tau ² = 0.0	0; Chi² =	1.33,	df = 3 (i	^o = 0.72); ² = ()%								
Test for overall effect: Z =	2.83 (P =	: 0.00	5)						-4 -∠ ∪ ∠ 4 After Before					
Test for subgroup differer	nces: Ch	i ^z = 1.2	20, df =	1 (P = 0	.27), l ^a	= 16.4	%		Aller Delute					

Appendix 11d. Incontinence episodes after treatment according to the surface method and considering the stimulation threshold.

	After Before Moon SD Total Moon SD							Mean Difference	Mean Difference						
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl						
13.1.1 Method 3															
Elshora, I. A 2020	6.43	0.551	15	7.34	0.561	15	33.9%	-0.91 [-1.31, -0.51]	-						
MacDiarmid, S. 20010	3.7	2.6	33	6.8	4.2	33	7.2%	-3.10 [-4.79, -1.41]							
Subtotal (95% CI)			48			48	41.1%	-1.85 [-3.97, 0.28]							
Heterogeneity: Tau ² = 2.01; Chi ² =	6.14, df	'= 1 (P =	= 0.01);	l ^z = 849	6										
Test for overall effect: Z = 1.70 (P =	= 0.09)														
13.1.2 Method 6															
Carlo Vecchioli-Scaldazza 2018	3	1.14	35	4.35	0.59	35	32.9%	-1.35 [-1.78, -0.92]	-						
Onal 2012	0.9	1.5	18	1.5	2.3	18	11.2%	-0.60 [-1.87, 0.67]							
Ugurlucan 2013	1.3	0.5	35	2	3.1	35	14.8%	-0.70 [-1.74, 0.34]							
Subtotal (95% CI)			88			88	58.9%	-1.16 [-1.60, -0.72]	◆						
Heterogeneity: Tau ² = 0.02; Chi ² =	2.22, df	= 2 (P =	= 0.33);	l ² = 109	6										
Test for overall effect: Z = 5.16 (P <	< 0.0000	11)													
Total (95% CI)			136			136	100.0%	-1.15 [-1.64, -0.65]	◆						
Heterogeneity: Tau ² = 0.15; Chi ² =	8.77, df	= 4 (P =	= 0.07);	l ² = 549	6					-					
Test for overall effect: Z = 4.55 (P <	< 0.0000	11)							-4 -2 U 2 4 After Refere						
Test for subgroup differences: Ch	i ^z = 0.39	df = 1	(P = 0.5	53), ² = 1	0%				Allel Delute						

Appendix 11e. Urgency episodes after treatment in different methods of stimulation

	After Before Mean Diffs								nce Mean Difference				
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl				
14.1.1 Method 1													
Jacomo, R. H 2020	0	0.24	25	1.33	0.27	25	25.1%	-1.33 [-1.47, -1.19]	•				
Martin-Gracia, M. 2018	3.2	3.6	12	1.7	2.8	12	6.8%	1.50 [-1.08, 4.08]	_ 				
Subtotal (95% CI)			37			37	31.8%	-0.22 [-2.93, 2.49]	•				
Heterogeneity: Tau ² = 3.1	14; Chi <mark>²</mark>	= 4.61	, df = 1	(P = 0.0	13); I ^z =	78%							
Test for overall effect: Z =	= 0.16 (P	= 0.87	7)										
14.1.2 Method 2													
Manriquez, V. 2016	5	2.5	34	14	8.16	34	5.8%	-9.00 [-11.87, -6.13]					
Subtotal (95% CI)			34			34	5.8%	-9.00 [-11.87, -6.13]	•				
Heterogeneity: Not appli	cable												
Test for overall effect: Z =	= 6.15 (P	< 0.00	0001)										
4442 11-41-45													
14.1.3 Method 5									_				
Alve, A. T 2020	0.51	0.95	39	2.21	2.56	39	19.4%	-1.70 [-2.56, -0.84]					
Bacchi 2021	0.9	0.28	52	3.3	0.26	52	25.2%	-2.40 [-2.50, -2.30]	•				
Pierre, M. L. 2021	1	1.6	26	3.2	2.1	26	17.8%	-2.20 [-3.21, -1.19]	T				
Subtotal (95% CI)			11/			11/	62.4%	-2.29 [-2.63, -1.94]	•				
Heterogeneity: Tau ² = 0.1	04; Chi r	= 2.66	, df = 2	(P = 0.2	!6); I* =	25%							
Test for overall effect: Z =	= 13.02 (P < 0.0	JOOO1)										
Total (95% CI)			189			182	100.0%	2 08 [-2 86 -1 20]					
Hotorogonaity Tau2 - 0.1	AL ONE	- 170	100 10 df -	5 /D - 1	0 0000		070	-2.00 [-2.00, - 1.23]	· · · · · · · · · · · · · · · · · · ·				
Tect for everall effect: 7 -	04, UNE - 6 10 /D	- 173. 	10, UI =	0 (F S	0.0000	0,1=	37.70		-10 -5 Ó Ś 1Ó				
Test for overall ellect. Z =	- 0.10 (P	∼ 0.01 bi≇ – ລ	0001) 246 4	(- 27P)	~ 0 00	0043 12	- 01 494		After Before				
restion subgroup difference	inces. C	nr = 2	5.10, u	I = 2 (F 1	S 0.00	UU I J, F	- 91.470						

Appendix 11f. Urgency episodes after treatment according to the surface method and considering the stimulation methods



Appendix 11g. Urgency episodes after treatment according to the surface method and considering the stimulation threshold

		After		Before				Mean Difference	Mean Difference				
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl				
5.1.1 Method 1													
Kizilyel, S. 2015 Subtotal (95% CI)	1,473	90.6	10 10	1,293	33.7	10 10	14.3% 14.3 %	180.00 [120.09, 239.91] 180.00 [120.09, 239.91]					
Heterogeneity: Not appl Test for overall effect: Z	icable = 5.89 (F	P < 0.00I	001)										
5.1.2 Method 2													
Klingler H C 2000	197	52 33	15	252	51	15	17.8%	-55 00 (-91 98 -18 02)					
Vandoninck V 2003	340	71.66	90	263	11916	90	18.9%	77 00 [48 27 105 73]					
Subtotal (95% CI)	0.0	11.00	105	200	110.10	105	36.6%	11.53 [-117.82, 140.89]					
Heterogeneity: Tau ² = 8	426.61: (Chi ^z = 3l	0.53. df	'= 1 (P ·	< 0.00001	(); $ \mathbf{r} = 9$	17%	• • •					
Test for overall effect: Z	= 0.17 (F	P = 0.86)		. (
5.1.3 Method 4													
Marchal, C. 2011	322.5	19.05	53	249.8	16.71	53	20.8%	72.70 [65.88, 79.52]					
Subtotal (95% CI)	022.0		53	210.0		53	20.8%	72.70 [65.88, 79.52]	•				
Heterogeneity: Not appl	icable												
Test for overall effect: Z:	= 20.89 ((P < 0.0)	0001)										
5.1.4 Method 6													
Onal 2012	393.3	149.7	18	409.2	162.1	18	8.9%	-15.90 [-117.83, 86.03]					
Rio-Gonzalez, S. 2017 Subtotal (95% Cl)	324.5	127.3	200 218	251.9	119.8	200 218	19.4% 28.3 %	72.60 [48.37, 96.83] 42.77 [-39.23, 124.76]					
Heterogeneity: Tau ² = 2- Test for overall effect: Z :	487.33; (= 1.02 (E	Chi ² = 2. ? = 0.31)	74, df=	= 1 (P =	0.10); I ^z =	64%							
	··· (·	,											
Total (95% CI)			386			386	100.0%	58.24 [18.15, 98.33]	◆				
Heterogeneity: Tau² = 2I	000.89; (Chi² = 6I	0.45, df	= 5 (P ·	< 0.00001	l); ² = 9	92%	-					
Test for overall effect: Z	= 2.85 (F	e = 0.00	4)						-200 -100 0 100 200 After Before				
Test for subaroup differ	ences: C	:hi² = 13	.61. df:	= 3 (P =	0.003), P	² = 78.0	1%		Aller Delote				

Appendix 11h. maximum cystometric capacity after treatment according to the stimulation methods

	After Before							Mean Difference	Mean Difference						
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Randorr	i, 95% Cl					
8.1.1 Method 2															
Boudaoud, N. 2015 Subtotal (95% Cl)	274.5	129	11 11	215.7	106	11 11	26.4% 26.4%	58.80 [-39.87, 157.47] 58.80 [-39.87, 157.47]	-						
Heterogeneity: Not ap	plicable														
Test for overall effect:	Z=1.17	(P = 0.3	24)												
8.1.2 Method 5					400.5		07.50	4.50 40 404 05 000 45							
AMARENCO 2003 Subtotal (95% CI)	377.4	117.9	44 44	221	129.5	44 44	37.5% 37.5%	156.40 [104.65, 208.15] 156.40 [104.65, 208.15]		-					
Heterogeneity: Not ap	plicable														
Test for overall effect:	Z = 5.92	(P < 0.)	00001)												
8.1.3 Method 6															
Abulseoud, A 2018	296.4	99	15	250.13	56.24	15	36.1%	46.27 [-11.35, 103.89]	+	-					
Subtotal (95% CI)			15			15	36.1%	46.27 [-11.35, 103.89]	-						
Heterogeneity: Not ap	plicable														
Test for overall effect:	Z=1.57	(P = 0.1	12)												
Total (95% CI)			70			70	100.0%	90.88 [11.67, 170.09]							
Heterogeneity: Tau ² =	3657.70); Chi ^z =	8.57, (df = 2 (P =	= 0.01);	l ² = 779	%								
Test for overall effect:	Z = 2.25	(P = 0.1	D2)						-200 -100 U	100 200 Refere					
Test for subgroup diff	erences	: Chi²=	8.57, d	f= 2 (P =	0.01), I	² = 76.7	'%		Aller	Delute					

Appendix 11i. maximum cystometric capacity after treatment according to the surface method and considering the stimulation method

	After Bef Mean SD Total Mean							Mean Difference	Mean Difference					
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl					
11.1.1 Method 1														
Kizilyel, S. 2015 Subtotal (95% CI)	0.13	0.23	10 10	1.2	1.6	10 10	19.0% 19.0 %	-1.07 [-2.07, -0.07] - 1.07 [-2.07, -0.07]						
Heterogeneity: Not applicable														
Test for overall effect: Z = 2.09 (P	= 0.04)													
11.1.2 Method 3														
Elshora, I. A 2020	5.62	0.53	15	6.25	0.557	15	30.7%	-0.63 [-1.02, -0.24]						
MacDiarmid, S. 20010	0.9	1.2	33	2.4	2.2	33	21.7%	-1.50 [-2.36, -0.64]						
Subtotal (95% CI)			48			48	52.4%	-0.98 [-1.81, -0.14]						
Heterogeneity: Tau² = 0.26; Chi² = Test for overall effect: Z = 2.29 (P	: 3.29, d1 = 0.02)	7=1 (P	= 0.07); I² = 70	1%									
11.1.3 Method 6														
Carlo Vecchioli-Scaldazza 2018 Subtotal (95% Cl)	2.24	1.35	35 35	4	0.69	35 35	28.6% 28.6%	-1.76 [-2.26, -1.26] - 1.76 [-2.26, -1.26]	•					
Heterogeneity: Not applicable	< 0 0000	11)												
	0.0000	/·//												
Total (95% CI)			93			93	100.0%	-1.23 [-1.88, -0.57]	-					
Heterogeneity: Tau ² = 0.32; Chi ² =	13.08, (df = 3 (P = 0.0	04); I ² =	77%			-						
Test for overall effect: Z = 3.67 (P = 0.0002)									-2 -1 U 1 2 After Before					
Test for subgroup differences: Ch	i ^z = 3.22	df = 2	(P = 0	.20), l² =	37.9%				Allel Delute					

Appendix 11j. UUI episodes after treatment according to the stimulation methods

	1	After		В	efore			Mean Difference	Mean Difference				
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl				
12.1.1 Method 1													
Jacomo, R. H 2020	0.33	0.12	25	1.49	0.41	25	39.0%	-1.16 [-1.33, -0.99]					
Subtotal (95% CI)			25			25	39.0 %	-1.16 [-1.33, -0.99]	•				
Heterogeneity: Not ap	plicable												
Test for overall effect:	Z=13.5	i8 (P <	0.0000	01)									
12.1.2 Method 2													
Manriquez, V. 2016	0	5.2	34	5	4	34	10.8%	-5.00 [-7.21, -2.79]					
Subtotal (95% CI)			34			34	10.8%	-5.00 [-7.21, -2.79]					
Heterogeneity: Not ap	plicable												
Test for overall effect:	Z= 4.44	(P < (0.00001)									
42.4.2 Mathad 5													
12.1.5 Method 5	0.00			4.40			04 O.Y	4 00 / 4 00 0 00					
Alve, A. T. 2020 Bidentiana, 2040	0.20	0.54	39	1.49	2.06	39	31.8%	-1.23 [-1.90, -0.56]					
Bykoviene 2018 Subtotal (05% CI)	3.17	2.87	39 70	5.24	3.64	39 70	18.4%	-2.07 [-3.52, -0.62]					
Subtotal (95% CI)	0.02-0	Liz_ 4	70 00 46	- 4 <i>(</i> D -	0.000	10	50.2%	- 1.39 [-2.04, -0.74]	•				
Heterogeneity: Taur =	0.0Z; C	nr=1 (D-4)	.Ub, at =	= 1 (P =	0.30);	17= 5%							
Test for overall effect.	Z = 4.21	(P < ().0001)										
Total (95% CI)			137			137	100.0%	-1.76 [-2.62, -0.91]	◆				
Heterogeneity: Tau ² =	0.48: C	hi² = 1	3.01. di	f = 3 (P :	= 0.00	5); ² = (77%						
Test for overall effect:	Z = 4.07	(P< ().0001)	- (-71 -			-4 -2 0 2 4				
Test for subaroup diff	erences	: Chi²	= 11.98). df = 2	(P = 0	.003), P	²= 83.3%		Atter Before				

Appendix 11k. UUI episodes after treatment according to the surface method and considering the stimulation method

	1	After		В	efore			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
12.2.1 Movement thr	eshold								
Alve, A. T 2020	0.26	0.54	39	1.49	2.06	39	31.8%	-1.23 [-1.90, -0.56]	
Jacomo, R. H 2020	0.33	0.12	25	1.49	0.41	25	39.0%	-1.16 [-1.33, -0.99]	•
Manriquez, V. 2016 Subtotal (95% CI)	0	5.2	34 98	5	4	34 98	10.8% 81.6 %	-5.00 [-7.21, -2.79] - 1.73 [-2.73, -0.74]	◆
Heterogeneity: Tau ² =	0.54; C	hi² = 1	1.60, d	f = 2 (P :	= 0.00	3); I 2 = (33%		
Test for overall effect:	Z = 3.42	? (P = 0).0006)						
12.2.2 Pain threshold	I								
Bykoviene 2018 Subtotal (95% Cl)	3.17	2.87	39 39	5.24	3.64	39 39	18.4% 18.4 %	-2.07 [-3.52, -0.62] - 2.07 [-3.52, -0.62]	 ◆
Heterogeneity: Not ap	plicable								
Test for overall effect:	Z = 2.79) (P = ().005)						
Total (95% CI)			137			137	100.0%	-1.76 [-2.62, -0.91]	▲
Heterogeneity: Tau ² =	0.48; C	hi² = 1	3.01, d	f = 3 (P :	= 0.00	5); I² = (77%		
Test for overall effect:	Z = 4.07	' (P < ().0001)						After Before
Test for subgroup diff	erences	: Chi ≇∘	= 0.14,	df = 1 (F	P = 0.7	1), I² =	0%		

Appendix 111. UUI episodes after treatment according to the surface method and considering the stimulation threshold

Appendix 12. Critical appraisal results

JBI	CRITICAL APPRAIS	AL (CHE	CKL	IST :	FOR	RA	NDO	MIZ	ED	CON	TRO	LLE	D			
No	Author_year_Ref	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12	Q 13	Gr ad e	Qu alit v	Overal apprai al
1.	Abulseoud_2018(10)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	12	*	Include
2	Ahmed_2020(11)	Y	U	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	10	*	Include
3	OkanALKI_2021 (12)	Y	U	Y	U	U	U	Y	Y	Y	Y	Y	Y	Y	9	**	Include
4	Alve_2020(13)	Y	Y	Y	N	Ν	Y	Y	Y	Y	Y	Y	Y	Y	11	*	Include
5	Bacchi_2021(14)	Y	Y	Y	U	U	Y	Y	Y	Y	Y	Y	Y	Y	11	*	Include
6	Boudaoud_2015(15)	Y	Y	Y	Y	Y	Ν	Y	Y	Y	Y	Y	Y	Y	12	*	Include
7	Bykoviene_2018(16)	Y	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	Y	11	*	Include
8	Ebid_2009(17)	Y	Ν	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	10	**	Include
9	Elshora_2020(18)	Y	Ν	Y	Ν	Ν	Ν	Y	Y	Y	Y	Y	Y	Ν	8	**	Include
10	Finazzi-Agro_2010 (19)	Y	Y	Y	Y	Y	Ν	Y	Y	Ν	Y	Y	Y	Y	11	*	Include
11	Girtner_2021(20)	Y	Y	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	11	*	Include
12	GungorUgurlucan_2013(21)	Y	Ν	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
13	Jacomo_2020(22)	Y	Y	Y	N	Ν	Y	Y	Ν	Y	Y	Y	Y	Y	10	*	Include
14	Karademir_2005(23)	Y	Ν	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Ν	8	**	Include
15	Kizilyel_2015(24)	U	Ν	Y	N	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	8	**	Include
16	Mallmann_2020(25)	Y	U	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
17	Manriquez_2016(26)	Y	U	Y	N	N	Ν	Y	Y	Ν	Y	Y	Y	Y	8	**	Include
18	Martin-Gracia_2018(27)	Y	Y	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	11	*	Include
19	Peters_2012(28)	Y	Ν	Y	Y	Y	Ν	Y	Y	Y	Y	Y	Y	Y	11	*	Include
20	Peters_2009(29)	Y	Y	Y	Y	Y	Ν	Y	Y	Y	Y	Y	Y	Y	12	*	Include
21	Preyer_2015 (30)	Y	Y	Y	N	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	10	**	Include
22	Ramirez-Garcia_2019(31)	Y	U	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
23	Ramirez-Garcia_2021(32)	Y	Ν	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
24	Sancaktar_2010(33)	Y	Ν	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
25	Sherif_2017(34)	Y	U	Y	N	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
26	Souto_2014(35)	Y	Ν	Y	N	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
27	Svihra_2002(36)	Y	Ν	Y	N	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
28	Vecchioli-Scaldazza_2018(37)	Y	Ν	Y	U	U	Y	Y	Y	Y	Y	Y	Y	Y	10	**	Include
29	Zhang_2021(38)	Y	U	Y	Y	Ν	Y	Y	Y	Y	Y	Y	Y	Y	11	*	Include
30	Ayala-Quispe_2020(39)	Y	U	Y	Ν	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
31	Lashin_2021(40)	Y	U	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	10	**	Include
32	Pierre_2021 (41)	Y	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	Y	11	*	Include

33	Sonmez_2022(42)	Y	U	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	Y	Y	10	**	Include
							**								10	di di	
34	Welk_2020(43)	U	Y	N	Y	N	Ŷ	Y	Y	Y	Y	Y	Y	Y	10	**	Include
35	Zonić-Imamović 2021(44)	Y	Ν	Y	Ν	N	Ν	Y	Y	Y	Y	Y	Y	Y	9	**	Include
36	Geirsson_1993(45)	Y	Y	Y	U	U	U	Y	Ν	Ν	Y	Y	Ν	Ν	6	***	Include

Y = Yes, N = No, U = Unclear *High: eleven to thirteen positive criteria **Moderate: eight to ten positive criteria ***Low: <seven positive criteria

JBI CRITICAL APPRAISAL CHECKLIST FOR QUASI-EXPERIMENTAL STUDIES													
No	Author_year_Ref	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Grade	Quality	Overall appraisal
37	Vanbalken, M_2001(46)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
38	AMARENCO_2003(47)	Y	N	Y	N	Y	U	Y	Y	Y	6	**	Include
39	Barroso_2013(48)	Y	Y	Y	U	Y	Y	Y	Y	Y	8	*	Include
40	Capitanucci_2009(49)	Y	N	Y	Ν	Y	Y	Y	Y	Ν	6	**	Include
41	De Gennaro_2004(50)	Ν	N	Y	Ν	Y	Y	Y	Y	Y	6	**	Include
42	Rio-Gonzalez_2017 (51)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include
43	Fischer-Sgrott_2009(52)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include
44	Govier_2001(53)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
45	Hegazy_2014(54)	Y	Y	Y	Y	U	Y	Y	Y	Y	8	*	Include
46	Klingler_2000(55)	Y	Y	Y	Y	Ν	Y	Y	Y	Y	8	*	Include
47	MacDiarmid_2010(56)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include
48	Macías-Vera_2016(57)	Y	N	Y	Y	Y	Y	Y	Y	Y	8	*	Include
49	Mathieu_2017(58)	Y	N	Ν	Y	Y	Y	Y	Y	Y	7	**	Include
50	Onal_2012 (59)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include
51	Pytel_2018(60)	Ν	N	Y	Ν	Y	Ν	Y	Y	Y	5	**	Include
52	van Balken_2006(61)	Y	N	Y	Ν	Y	Y	Y	Y	Y	7	**	Include
53	van Balken, et al _2006(62)	Y	N	Y	N	Y	Y	Y	Y	Y	7	**	Include
54	van der Pal_2006(63)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
55	Vandoninck_2003(64)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
56	Yoong_2013(65)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
57	Baykal, K_2005(66)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
58	Kabay, S_2021 (67)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include

59	Ragab, M_2015(68)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include
60	Van balken, M.R_2003(46)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
61	Zhao, J_2008(69)	Y	Y	Y	N	Y	Y	Y	Y	Y	8	*	Include
62	Zhao, J_2004 (70)	Y	Y	Y	Ν	Y	Y	Y	Y	Y	8	*	Include

*High: eight to nine positive criteria **Moderate: five to seven positive criteria ***Low: <five positive criteria

JBI CRITICAL APPRAISAL CHECKLIST FOR COHORT STUDIES IN															
OVERACTIVE BLADDER SYNDROME															
No	Author_year_	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Grade	Quality	Overall appraisal
	Ref	1	2	3	4	5	6	7	8	9	10	11			
63	Marchal_2011(Y	Y	Y	Ν	Ν	Y	Y	Y	Y	Y	Y	9	*	Include
	71)														

Y = Yes, N = No, U = Unclear *High: nine to eleven positive criteria **Moderate: six to eight positive criteria ***Low: < six positive criter