

Harnessing Transcutaneous Posterior Tibial Nerve (TcPTNS) stimulation to revitalize bladder function in paediatric patients with underactive bladder

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1 Background

Underactive Bladder

- Limited Drugs
- CIC
- UTI

2 Study Aim

Assessing role of Neuromodulation using TcPTNS in paediatric patients with UAB

3 Methods

Parameters evaluated

- LUTS symptoms
- Uroflometry
- PVR
- Urodynamic study

Retrospective study between January 2013 to May 2022

INCLUSION Criteria

- Patients ≤ 18 years age
- LUTS due to underactive bladder
- Failed conservative management
- Ambulatory

EXCLUSION criteria

- Botox use in bladder or pelvic floor muscle within past 1 year
- Past treatment with neuromodulation
- Surgical intervention on the bladder
- Pacemaker or implantable defibrillator
- Active UTI

4 Results and Conclusion

Medial malleolus
0.39 inches
Nervus tibialis

30 mins

#12

Voltage :- 100 – 200 mAmp
Frequency :- 50 – 200 Hz

A

INCONTINENCE (23)

- NIGHT (6)
 - SCD - 2
 - PUV - 2
- DAY AND NIGHT (17)
 - SCD - 10
 - BBD (UD) - 5

B

DIAGNOSIS

C

SD + OTHERS

Frequency (P < 0.01): 480 to 468

Voided Volume (P < 0.09): 52.1 to 4.2

PVR (P = 0.07): 53.4 to 4.3

C

NN-NGB + PUV

Frequency (P < 0.01): 248 to 162.4

Voided Volume (P < 0.01): 69.4 to 84

PVR (P = 0.01): 6.5 to 6.1

D

SD + OTHERS

CIC (P = 0.06): 6 to 4.3

D

NN-NGB + PUV

CIC (P = 0.02): 6 to 2.4

E

SD + OTHERS

Qmax (P = 0.09): 6.4 to 6.5

Pdet@Qmax (P = 0.08): 12.6 to 13.8

E

NN-NGB + PUV

Qmax (P = 0.03): 7.1 to 10.1

Pdet@Qmax (P = 0.07): 16.6 to 18.2

Conclusion

In DU, significant improvement on NN-NGB & PUV group – increase in voided volume, Qmax, decrease in PVR & incontinence episodes

No significant effect on patients with Spinal cord deformities