Case Study on the use of Electro acupuncture for Overactive Bladder

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Overactive bladder

- Approximately 34 million adults in the United States

- The International Continence Society (ICS)
  - a syndrome +/- urgency incontinence
  - usually associated with urinary frequency and nocturia in the absence of proven infection or other obvious pathology
Acupuncture for overactive bladder

• Pilot program started in March 2013

• Physio Dept + O&G Dept

• All cases diagnosed with OAB by O&G Dept → Physio Dept for acupuncture

• 6 patients completed
Flow of program

- Patient referred by O&G Dept as OAB
- 8 sessions of acupuncture
- Physio Dept for POST Rx 6 month Ax (PR, Bladder chart, OAB-q, VAS, NGRCS)
- 1 year post Rx
- 6 months post Rx
- Physio Dept for PRE Rx Ax (PR, Bladder chart, OAB-q, VAS)
- Physio Dept for POST Rx Ax (PR, Bladder chart, OAB-q, VAS, NGRCS)
- Physio Dept for POST 1 year Rx Ax (PR, Bladder chart, OAB-q, VAS, NGRCS)
Acupuncture Points

- 氣海 (REN 6): 1.5 cun below the umbilicus
- 中極 (REN 3): 4 cun below the umbilicus
- 三陰交 (SP 6): 3 cun above the medial malleolus
- 太溪 (KI 3): in the depression between the tip of the medial malleolus and tendo calcaneus
- 太沖 (LI 3): in the depression proximal to the 1st metatarsal space
- 昆侖 (BL 6): depression between the tip of the external malleolus and tendo calcaneus
Electrical stimulation

- To all acupuncture points

- Fast + Slow mode (3Hz – 10Hz)
  - both 5 and 30 Hz stimulation of the posterior tibial nerve inhibits bladder activity
  - however, stimulation of the pudendal nerve inhibits bladder activity at 5 Hz but excites bladder activity at 20-30 Hz
  - repeated short duration stimulation of the tibial nerve induces a persistent post-stimulation inhibitory effect and increases bladder capacity (Tai 2011)

- Intensity: comfortable tingling sensation

- 30 mins
Mechanism

• The National Institute for Health and Clinical Excellence (NICE) Guideline
  – PTNS for overactive bladder syndrome

• Regulate the activity of hypogastric nerve (T10-12) & pelvic nerve (S2-4)
Anatomy

• **sympathetic nerve** (hypogastric nerve, T10-12)
  – suppress contraction of the detrusor
  – predominant during bladder filling

• **parasympathetic nerve** (pelvic nerve, S2-4)
  – cause the detrusor to contract
  – causes emptying
Anatomy

- **Posterior tibial nerve (L4-S3)**
  - component of the sciatic nerve
  - formed from the anterior divisions of the sacral plexus
  - travels in the posterior leg with the posterior tibial artery, in the fascial plane between the superficial and deep muscle groups
Background

- Female, 66 years old, HW, P2G2
- Urge incontinence x 2 years
- Urinary frequency & Nocturia ++
Urodynamic Ax

• Pressure flow
  – Filling phase
    • First desire: 157 ml  Detrusor pressure: 11 cmH₂O
    • Strong desire: 183 ml  Detrusor pressure: 8 cmH₂O
    • Urgency: 203 ml  Detrusor pressure: 23 cmH₂O
    • Max cyst cap.: 225 ml  Detrusor pressure: 57 cmH₂O
  – Voiding phase
    • Voided volume: 225 ml
    • Residual urine: 0 ml
Ax

• PR grading & endurance

• Bladder chart

• Cantonese Chinese Version for Hong Kong of the OAB-q Short Form

• VAS of satisfaction

• NGRCS
Ax & Outcome

• PR
  – Pre: Grade: 2  Duration: 3s
  – Post: Grade: 2  Duration: 3s

• Max voiding volume:
  – Pre: 260 ml
  – Post: 410 ml (p<0.05)
Ax & Outcome

• Average voiding frequency (daytime):
  – Pre: 10
  – Post: 7

• Average nocturia frequency
  – Pre: 3
  – Post: 1.3 (p<0.05)
Ax & Outcome

• Cantonese Chinese Version for Hong Kong of the OAB-q Short Form (Bother)
  – Pre: 21 (7/5/2013)
  – Post: 11 (4/6/2013) (p<0.05)

• Cantonese Chinese Version for Hong Kong of the OAB-q Short Form (Symptom)
  – Pre: 38 (7/5/2013)
  – Post: 19 (4/6/2013) (p<0.05)
Ax & Outcome

• VAS of satisfaction:
  – Pre: 2/10
  – Post: 8/10 (*p<0.05*)

• NGRCS: 7
Future plan

• To improve the voiding frequency in day time by adjusting or adding acupoints

• More subjects should be recruited to increase the power of the analysis
References


• Stoller ML: The efficacy of acupuncture in reversing the unstable bladder in pig-tailed monkeys. The Journal of Urology 1987, Suppl. 137:104A.


References


References


• http://www.rnceus.com/uro/norm2.htm

• http://www.acupuncturemoxibustion.com/conditions/overactive-bladder/