

EFFECT OF VARIOUS FREQUENCY AND INTENSITY ELECTROACUPUNCTURE ON FUNCTION OF URETHRAL SPHINCTER MUSCLE IN FEMALE RATS

Hypothesis / aims of study

To observe the effect of various frequency and intensity electroacupuncture (EA) at Sanyinjiao acupoint on function of sphincter muscle of urethra in female rats, so as to explore the satisfying EA method for dysfunction of urethral sphincter muscle.

Study design, materials and methods

A total of 24 SD female rats (20-25 days) were randomized into control groups (n=6) with artificial EA; EA group 1 (n=6) (20mA, 1 Hz); EA group 2 (n=6) (20mA, 1/2Hz) and EA group 3 (n=6) (10mA, 1Hz). EA was applied to the Sanyinjiao acupoint for 20min once and twice everyday for two weeks. They all underwent urodynamic examination and urethral sphincter muscle electromyogram (EMG) detection after EA treatment. Bladder voiding pressure, abdomen pressure leak point pressure and static urethral pressure profile were recorded. The amplitude of the urethral sphincter muscle EMG waves during voiding course were analysed.

Results

All rats underwent research successfully. After EA treatment, the average quantity of bladder voiding pressure (VP), abdomen pressure leak point pressure (ALPP) and maximum urethra closure pressure (MUCP) of control group were (25.30±5.32) cmH₂O (1cmH₂O=0.098KPa), (24.83±4.75) cmH₂O, (13.25±2.35) cmH₂O. These parameters of group 1 were (26.10±5.47) cmH₂O, (26.32±4.24) cmH₂O, (16.30±3.20) cmH₂O. These parameters of group 2 were (25.85±7.47) cmH₂O, (26.05±3.47) cmH₂O, (15.95±2.59) cmH₂O. These parameters of group 3 were (24.92±6.12) cmH₂O, (25.90±6.31) cmH₂O, (14.82±4.30) cmH₂O. Compared with the control group, the difference of ALPP and MUCP were significant in group 1 and group 2 (P<0.05), no significant difference in group 3.

Interpretation of results

Compared with the control group, the difference of amplitude of urethral sphincter muscle EMG at the point of bladder infusion and abdomen pressure leakage were significant in group 1 and group 2 (P<0.05), no significant difference in group 3.

Concluding message

The continence function of urethral sphincter muscle of female SD rat was improved by the treatment of EA at Sanyinjiao acupoint. The treatment effect depends on the intensity of EA instead of frequency.

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rat **Ethics Committee:** Ethical Committee of Tongji Hospital