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Electroacupuncture for Treating ProstaticHyperplasia:A Randomized Controlled Trial

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Abstract:Objective: To assess the clinical effect of electroacupuncture for treating prostatic hyperplasia.Methods: Sixty patients with prostatic hyperplasia were randomized into a treatment group and a control group,30 in each. The treatment group was treated byelectroacupuncture, and the control was prescribed with orallytaken *Jing Zhu Qian Lie Long Bi Tong* Capsule. After treatment, the two groups were compared with each otherinterms of treatment result, international prostate symptom score (I-PSS), quality of life index (QLI), maximumflow rate (Qmax), and residual urine volume (RUV). Results: The total effective rate was 96.7% in the treatmentgroup versus 70.0% in the control, and thedifference was significant ($P<0.05$). Both groups had markedimprovement in I-PSS, QLI score, Qmax and RUV ($P<0.05$). Conclusion: By improving I-PSS, QLI, Qmaxand RUV,electroacupuncture is an effective way for treating prostatic hyperplasia.

Key Words: Electroacupuncture; Acupuncture Therapy; Prostatic Hyperplasia; Difficulty in Urination;Randomize Controlled Tiral

Benign prostatic hyperplasia is a common diseasein elderly males. According to the survey conductedby Gu[1] in 20 hospitals, 13.6% of the inpatients inurinary department were prostatic hyperplasia. Wetreated this disease by electroacupuncture andcompared the effect with medication. The report isnow given as follows

Materials and methods.

1 Clinical Data

1.1 Diagnosis criteria[2]

① Urinary symptoms such as urinary hesitancy,obstructed urine, urination frequency worse at night,urine leakage afterwards, distending pain in the lowerbelly, but absence of irritating pain in the urinary tract;② digital rectal examination finds prostateenlargement, and dullness topercussion in lower belly;③diagnosis confirmed by ultrasonic scanning; ④urinary infection,urinary tract stone and prostatecancer should be excluded.

1.2 Inclusion criteria

① Conformed to the diagnosis criteria; ② willingto participate in this randomized controlled clinicalstudy and sign the informed consent form.

1.3 Exclusion criteria

① Allergic to the medication used in the presentstudy; ② accompanied by mental health problem,liver or kidney dysfunction, hepatopathy, or infectiousdiseases; ③ patients who adopted other treatmentmethods in recent 2 weeks.

1.4 Termination criteria

① Patients who cannot finish the study; ②patients who fail to comply with the treatmentprotocol; ③ severe adverse effect event occurs; ④when a complication occurs or the disease conditionis aggravated.For terminated cases, doctor has to record thetermination time and analyze the reason.

1.5 General data

Sixty eligible subjects were recruited from theGeriatric Department of the Second HospitalAffiliated to Heilongjiang University of TraditionalChinese Medicine, and then randomized into atreatment group and a control group, 30 cases in each.The subjectswere aged 50-75 years.There were nosignificant differences in comparison of age, diseaseduration,international prostate symptom score(I-PSS), quality of life index (QLI), maximum flowrate (Qmax), and residual urine volume (RUV))(table1-3).

Table 1. Comparison of age distribution (Cases)

Age (year)	Treatment group (*n*=30)	Control group (*n*=30)
50-55	4	3
56-60	5	6
61-65	7	6
66-70	9	11
71-75	5	4

Table 2. Comparison of disease duration (Cases)

Disease duration(year)	Treatment group(*n*=30)	Control group(*n*=30)
0-1	4	4
1-5	8	9
5-10	12	10
10-6	6	7

Table 3. Comparison of I-PSS、QLI、Qmax、RUV before

Indexes	Treatment group(*n*=30)	Control group(*n*=30)	t
I-PSS	17.30±4.74	18.70±4.81	1.14
QLI	4.33±1.24	4.97±1.22	1.20
Qmax	10.47±2.49	9.30±2.70	1.74
RUV	75.33±16.13	78.50±16.14	0.76

2 Treatment Methods

2.1 Treatment group Acupoints: Foot Motor-Sensory Region (scalp acupuncture area); Qugu (CV 2), Zhongji (CV 3),Guanyuan (CV 4), Henggu (KI 11), Sanyinjiao(SP 6).

Operation: After sterilization, the selected acupointswere inserted with the needles of 0.30 mm in diameterand 40 mm in length. The Foot Motor-SensoryRegion was punctured subcutaneously by depth of 30mm, until it reached the subgaleal and producing agasping feeling. Before Qugu (CV 2), Zhongji (CV 3),Guanyuan (CV 4), Henggu (KI11) were punctured,the patient was asked to empty the urine bladder firstand then tolie on his back. These points werepunctured perpendicularly by depth of 35-38 mm,with needling sensation radiated to the urinary tract,perineum and the upper inner thigh. Sanyinjiao (SP 6)was also needled perpendicularly by depth of 35 mm,better to produce a distending needling sensation.After qi arrival, the bilateral Foot Motor-SensoryRegion, Qugu (CV 2) and Guanyuan (CV 4) wereconnected to the acupuncture apparatus (YingdiKWD-808) respectively, with sparse-dense wave andtolerable strength of current

for 30 min in total. Thetreatment was given once every day, 10 times as atreatment course, with an interval of 2-3 d betweeneach two courses, and the treatment outcomes wereevaluated after 3 treatment courses.

2.2 Control group

The control group was given Jing Zhu Qian LieLong Bi Tong Capsules for orally taken (Z20025304),4 capsules each time (0.5 g/capsule), and 3 times aday. The treatment course was the same as thetreatment group.

3 Therapeutic Effects

3.1 Criteria of therapeutic effect[3, 4]Marked effect: I-PSS≤7; QLI≤1; Qmax≥18 mL/s.The marked effect can be confirmed by achieving twoof the above levels.Effect: I-PSS≤13; QLI score drops from 4-6 to 2-3after treatment; RUV is reduced by over 50%; Qmax≥12 mL/s. Effect can be determined by achieving oneof the above levels.

Invalid: None of the level mentioned fordetermining an effect is achieved.

3.2 Statistical analysis

The values were expressed by ($\bar{x} \pm s$); themeasurement data were analyzed by t-test,and thenumerical data were by Chi-square test.

3.3 Treatment results

3.3.1 Comparison of treatment effectThe comparison of total effective rate found that the treatment group had a significantly better resultthan the control (P<0.01) (table 4).

3.3.2 Comparison of I-PSS

It found that both groups had marked improvementin I-PSS after treatment (P<0.05), and the inter-groupcomparison also showed significant difference aftertreatment (P<0.05)(table4)

Table 4. Comparison of clinical effect (Cases)

Groups	*n*	ME	Effect	Invalid	TER (%)
Treatment	30	11	18	1	96.71
Control	30	6	15	9	70.0

Note: ME=Marked effect; TER=Total effective rate; comparedwith the control group, 1) *P*<0.01

Table 5. Comparison of I-PSS ($\bar{x} \pm s$, Score)

Groups *n* Before treatment After treatment

Treatment 30 17.30±4.74 7.73±3.531)2)

Control 30 18.70±4.81 12.17±4.021)

Note: Intra-group comparison between before and after treatment,

1) *P*<0.05; compared with after treatment in the control group, 2)

P<0.05

3.3.3 Comparison of QLI

It found that both groups had marked improvementin QLI after treatment (*P*<0.05), and the inter-groupcomparison also showed significant difference aftertreatment (*P*<0.05)

3.3.4 Comparison of Qmax

It found that both groups had marked improvementin Qmax after treatment (P<0.05), and the inter-groupcomparison also showed significant difference aftertreatment (P<0.05) .

3.3.5 Comparison of RUV

It found that both groups had marked improvementin RUV after treatment (P<0.05), and the inter-groupcomparison also showed significant difference aftertreatment (P<0.05)(table5).

Table 5. Comparison of RUV ($\bar{x} \pm s$, mL)

Groups	*n*	Pre-treatment	Post-treatment
Treatment	30	75.33±16.13	28.50±10.35
Control	30	78.50±16.14	43.37±19.81

3.3.6 Adverse effects

None of the participants ever disobeyed thetreatment schedule, or had a severe adverse effect

during the whole procedure, and there was noterminated case.

Result and Discussion

Prostatic hyperplasia belongs to the scopes of"Long Bi (uroschesis)" or "Lin Zheng(stranguria)"according to traditional Chinese medicine (TCM)theory. The pathogenesis can be summarized to bedeficiency of lung, spleen and kidney as the rootcourse, withretained stasis and dampness as thesymptom[5,6]. The Foot Motor-Sensory Regionislocated at the paracentral lobule, and is also theprojection area of the advancedmicturition center.When this region is punctured, it can activate thefunction of micturitioncenter, restore the modulationof subcortical micturition center, inhibit thehyperexcitation of detrusor muscle, and reduce thefrequency and urgency of urination[7]. Qugu (CV 2),Zhongji (CV 3), and Guanyuan (CV 4) are all fromthe Conception Vessel; Qugu (CV 2) is the crossingpoint of the Conception Vessel and the Liver Meridianof Foot Jueyin; Zhongji (CV 3) and Guanyuan (CV 4)both are crossing points of the Conception Vessel andthe Three Foot Yin Meridians. Therefore, thecombined use of the three acupoints can regulate qiand blood in theConception Vessel. Henggu (KI 11)is the crossing point of the Thoroughfare Vessel andthe Kidney Meridian of Foot Shaoyin. Acupuncture atthis point works to adjust the function of the bladder,for achieving proper bladder tonicity[8]. Qugu (CV 2),Zhongji (CV 3), Guanyuan (CV 4), and Henggu(KI 11) are all located on bladder and prostate. Hence,needling these points can improve the localsymptoms[9,10]. Meanwhile, in association withneedling the FootMotor-Sensory Region andSanyinjiao (SP 6), as well as electric stimulation, asatisfactory result was finally obtained.

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