Clinical Observation on Electroacupuncture Treatment of Shoulder-Hand Syndrome in Apoplectic Hemiplegia

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Abstract Objective: To investigate the therapeutic effect of electroacupuncture on shoulder-hand syndrome in apoplectic hemiplegia. Methods: One hundred and sixty patients were randomly divided into two groups. 80 cases in the control group was treated by conventional acupuncture by filiform needles and 80 cases in the treatment group were treated by electroacupuncture. The therapeutic effects were evaluated after two courses of treatment. Results: After two courses of treatment, the therapeutic effect for edema on back of the hand and hand pain in digital flexion and the total effective rate were better in the treatment group than in the control group (P<0.05). Conclusion: Electroacupuncture is of significant importance for relieving pain on back of hand, preventing the muscular atrophy of hand and promoting recovery from apoplexy.

Key Words Electroacupuncture; Wind Stroke; Shoulder-Hand Syndrome

Shoulder-hand syndrome is a commonly encountered complication in apoplectic hemiplegia and is a clinical manifestation of reflex sympathetic denutrition (RSD)[1]. Its typical manifestations are pain in the shoulder, edema on the back of the hand, aggravated pain in the corresponding area in moving the shoulders and flexing the fingers. If not treated promptly, muscular atrophy in the hand and spasmodic deformity of the joints could be induced, leading to irreversible deformity in the sick upper limb, and hence influencing the self life ability of the patients and seriously influencing the rehabilitation of the paralyzed limb. From December of 1997 to May of 2005, we have treated 80 cases of the patients with apoplectic hemiplagia complicated with shoulder-hand syndrome by electric acupuncture. Now, the report is given in the following.

Clinical Materials

All cases came from the hospitalized patients in the first affiliated hospital of Zhengzhou University and family wards, totally 160 cases, and their diagnosis of shoulder-hand syndrome met the criteria stipulated in Neurological Rehabilitation[2]. The diagnosis was confirmed by CT in all cases. All cases were divided randomly into the treatment group and control group. In 80 cases in the treatment group, there were 42 males and 38 females, with the age ranging from 50-82 years old, at the average age of 60.5 years old, with the duration ranging from 24-150 days, at the average duration of 55.2 days, including 72 cases of cerebral infarction (54 cases in basal ganglion, 2 cases in parietal lobe, 4 cases in multiple focus), 8 cases of cerebral hemorrhage (all in basal ganglion), and 13 cases accompanied with cortex atrophy.
In 80 cases in the control group, there were 50 males and 30 females, with the age ranging from 51-78 years old, at the average age of 55.9 years old, with the duration ranging from 30-142 days, at the average duration of 53.1 days, including 74 cases of cerebral infarction (56 cases in basal ganglion, 12 cases in frontal and parietal lobe, 2 cases in parietal lobe, 4 cases in multiple focus), 6 cases of cerebral hemorrhage (all in basal ganglion), and 11 cases accompanied with cortex atrophy.

Sex, age, duration and clinical manifestations were identical and comparable in the two groups (P < 0.05).

Therapeutic Methods

1. Body position
The patient took a supine position, with the knee in 45 degrees by a pillow underneath the sick popliteal fossa, and with the upper limb stretched, palm upward.

2. Acupoints
The acupoints were selected in the sick side in the two groups: Ashi points (painful spots, mostly in the anterior shoulder), Tianquan (PC 2), Chize (LU 5), Bizhong (Extra), Neiguan (PC 6), Futu (ST 32), Sanyinjiao (SP 6) and Taichong (LR 3). Twelve Jing-well points were selected predominantly for promoting the restoration of the functions in the limbs. Dicang (ST 4), Yifeng (TE 17), Xiaguan (ST 7) and Jiache (ST 6) were selected for deviation of the mouth and tongue. Yamen (GV 15), Yongquan (KI 1), Lianquan (CV 23) and Zhaohai (KI 6) were selected for aphasia. Daling (PC 7) and Hegu (LI 4) were selected for spasm in the wrist and fingers. After subjective movements appeared in the paralyzed limb, it was necessary to start functional training as early as possible in accordance with the body condition, in order to smoothen the circulation of qi and blood for functional restoration.

3. Needling technique
Control group: The filiform needles were inserted perpendicularly and lifted and thrust repeatedly for strong needling sensation in the deep area and the intensity of the stimulation in the lower limb was enough to cause flexion of the dorsum of the foot. In same acupoints as above, the needles were retained for 20 min and manipulated twice during the retaining of the needles.

Treatment group: Ashi point and Tianquan (PC 2), Chize (LU 5) and Bizhong (Extra) were selected and applied with multiple functional electric acupuncture apparatus and neurological therapeutic apparatus. Those two pairs of the acupoints were applied with electric pulsation (1 Hz), by intensity of stimulation that flexion of the elbow and fingers were induced by rhythmical muscular contracture, for 20 min.

In the two groups, the treatment was given once every day and 30 times made one course of the treatment, with a 2-day rest in the interval of the courses, and totally by two courses of the treatment.

Therapeutic Effects

1. Criteria of clinical effects and results
After two courses of the treatment, the therapeutic effects were assessed upon the criteria stipulated in Modern Rehabilitation. In 80 cases in the control group, the results showed basic cure in 20 cases (25.0%), remarkable effect in 40 cases (50.0%), effect in 18 cases (22.5%), failure in 2 cases (2.5%) and total remarkable effective rate in 75.0% and total effective rate in 97.5%. In 80 cases in the control group, the results showed basic cure in 12 cases (15.0%), remarkable effect in 28 cases (35.0%), effect in 32 cases (40.5%), failure in 8 cases (10.0%) and total remarkable effective rate in 50.0% and total effective rate in 90.0%. By $\chi^2$ test in the basic cure in the two groups, $\chi^2=0.70$ and $P>0.05$, indicating no significant difference. By $\chi^2$ test in the total remarkable effective rate, $\chi^2=4.32$ and $P<0.05$, indicating that the total remarkable effective rate is better in the treatment group than in the control group.

2. Influence on edema in the back of hand
In 80 cases with edema in the back of the hand in the treatment group, after the treatment, edema faded completely in 74 cases (92.2%). In 80 cases with edema in the back of the hand in the control group, after the treatment, edema faded completely in 56 cases (70.0%). By $\chi^2$ test, there was significant difference ($\chi^2=5.25$, $P<0.05$) in the eliminating rate of