Clinical Observation of Electroacupuncture in Treating Spastic Paralysis Following Cerebral Infarction

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Abstract Objective: To observe the clinical efficacy of electroacupuncture in treating spastic paralysis following cerebral infarction. Methods: Sixty patients with spastic paralysis after cerebral infarction were randomly allocated into control group and treatment group, 30 cases each. The control group was treated with conventional acupuncture and the treatment group was treated with conventional acupuncture plus electroacupuncture according to the principle of antagonistic acupuncture. Both groups were given routine drugs and scalp acupuncture treatment. Results: Statistical analysis showed significant differences in NFI score and clinical curative effect score between pretreatment and posttreatment in the treatment and control groups and between the treatment and control groups. Conclusion: Both electroacupuncture and conventional acupuncture have clinical curative effect on spastic paralysis following cerebral infarction, but the curative effect of electroacupuncture is significantly superior to that of conventional acupuncture.

Key Words Electroacupuncture; Cerebral Infarction; Poststroke Syndrome

Clinical Data

1. Inclusive criteria
All the patients were diagnosed on the basis of the diagnostic criteria stipulated on the fourth national cerebrovascular conference in 1995[1]; ages ranging 50 to 75 years old, both men and women; all patients were confirmed by CT scan or MRI; clear consciousness or mild conscious disturbance, stable condition; clinical nerve function impairment scores (NFI scores) were between 16-45.

We treated spastic paralysis following cerebral infarction with antagonistic electroacupuncture.
2. Exclusive criteria
Past history of cerebral apoplexy; transient ischemic attack; plastic ischemic nerve dysfunction; subarachnoid hemorrhage; nerve or muscle-skeletal diseases affecting functional restoration before the onset of cerebral infarction; with serious underlying disorders in liver, kidney, hematopoietic system and endocrine system, psychopath; cerebral embolism and cerebral hemorrhage.

3. General data
Sixty cases, which were diagnosed with spastic paralysis, were randomized into treatment group and control group, 30 cases each. The general data of the two groups were presented in table 1. The t test showed that there was no difference between the two groups in the gender, age and duration of disease (P>0.05), indicating comparability between the two groups (Table 1).

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M/W</th>
<th>Age (years)</th>
<th>Duration of disease (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>30</td>
<td>17/13</td>
<td>64.7±3.10</td>
<td>41.5±6.80</td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>16/14</td>
<td>64.5±3.30</td>
<td>39.2±8.50</td>
</tr>
</tbody>
</table>

Table 1. General data of the two groups

Treatment Methods

1. Treatment group
Acupoints: Finger difficulty in flexing and stretching was treated by Waiguan (TE 5) and Neibaxie (Ex, the point between the second and third fingers); upper limb flexion was treated by Tianjing (TE 10) and Shousanli (LI 10); upper limb intorsion was treated by Jiuneixuan [Ex, the point 0.5 cun lateral to Shousanli (LI 10) and the medial aspect of ulnar bone] and Tianjing (TE 10); strephenopodia was treated by Yanglingquan (GB 34) and Jiuneifan (Ex, 3 cun above the posterior margin of external ankle).

Manipulation: When above acupoints were needled, electroacupuncture instrument were connected with the needles, anode with the proximal acupoints and cathode with distal acupoints; sparse wave was used to make regular contractions against the antagonistic muscles of spastic muscles. The treatment was given once a day, 30 min one time, for a total of 4 weeks.

2. Control group
Acupoints: Hegu (LI 4), Houxi (SI 3), Yuji (LU 10), Shixuan (Ex-UE 11), Neibaxie (Ex), Xiazhu (GB 43), Neiting (ST 44), Taixi (KI 3), Kunlun (BL 60) and Jiuneifan (the point 3 cun above the posterior margin of external ankle).

Manipulation: Shixuan (Ex-UE 11) was pricked for blood-letting and other acupoints were treated with reducing techniques. The treatment was given once a day, 30 min one time, for a total of 4 weeks.

In addition, scalp acupuncture was prescribed in two groups. Contralateral Anterior Oblique Line of vertex Temporal (MS 6) and Foot-motor Sensory Area (MS 8), were needled. The treatment was given once a day and the needles were retained for 30 min. Meanwhile, brain-cell-nourishing agents and symptomatic treatment were given.

Therapeutic Effects

1. Criteria for therapeutic effects
The degrees of NFI was determined according to the Scoring Criteria for Clinical Neurological Function Insufficiency of Cerebral Apoplexy stipulated on the fourth national cerebrovascular conference in 1995.

The clinical efficacy was evaluated in the accordance with the criteria stipulated on the fourth national cerebrovascular conference in 1995.

Basic cure: The NFI score reduced by 91%-100%; the degree of disability was 0 (ability to work or do housework, or restore to the state before paralysis).

Marked progress: The NFI score reduced by 46%-90%; the degrees of disability were 1-3 (1 degree is defined as the ability to take care of oneself, live on oneself and do some work; 2 degree is defined as the ability to live basically on oneself and needs some help from others; 3 degree is defined as the ability to take care of oneself, but more help is needed).

Progress: The NFI score reduced by 18%-45%.

No change: The NFI score reduced by less than 17%.

Deterioration: The NFI score increased instead.

Death.

2. Statistical method
Ridit test was adopted for grading data and t test (SPSS software) was adopted for quantitative data.

3. Results
NFI scores were presented in table 2. The t test showed that there was no difference in NFI score before treatment between two groups.