Current Research in Acupuncture Treatment for Bell’s Palsy

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Abstract

Bell’s palsy is the appellation commonly used to describe an acute peripheral facial palsy of unknown cause. It is the most common disorder which affects the facial nerves and results in weakness or paralysis on one side of the face. The main pharmacologic therapy for acute Bell’s palsy is early short-term oral glucocorticoid treatment. Acupuncture is part of Traditional Chinese Medicine (TCM) and has been used for thousands of years. It involves inserting fine needles into specific acupuncture points on the skin or applying various other techniques to the acupuncture points to bring about treatment. A number of published research articles have suggested acupuncture is beneficial for patients with Bell’s palsy. Even thought more studies and clinical evidence are appreciated, current researches and results suggest that acupuncture plays a crucial role in the Bell’s palsy treatment. In addition, acupuncture does relieve Bell’s palsy sequelae and improve life-quality outcome of these patients.

Keywords: Acupuncture; Bell’s palsy; Idiopathic facial palsy; Traditional chinese medicine

Abbreviations

TCM = Traditional chinese medicine

Introduction

Bell’s palsy is the appellation commonly used to describe an acute peripheral facial palsy of unknown cause. It is the most common disorder which affects the facial nerves and results in weakness or paralysis on one side of the face [1]. It represents nearly half of all cases of facial nerve palsy [2]. The annual incidence rate is between 13 and 34 cases per 100,000 population [3]. More than 60,000 people were affected by this disease each year in the United States alone [4]. The peak age when Bell’s palsy occurred was in the fourth decade of life and 55.1% of patients were male [5]. The highest incidence of Bell’s palsy has been observed in the warm seasons; spring and summer. Diabetes Mellitus is the most common comorbid condition associated with Bell’s Palsy. In addition, a recurrence was more likely to occur in the first 1.5 years after its first onset [5]. The paralysis causes distortion of facial features and interferes with normal functions, such as closing the eye and eating. Most patients with Bell’s palsy will recover within 3 weeks, with or without medical intervention [3]. But about 30% of patients have sequelae [6]. Since facial symmetry frequently determines an individual’s appearance or influences interpersonal attraction [7], the asymmetry will affect psychological and social behaviors, and aggravate quality of life [8]. A study found a bidirectional temporal association between Bell’s palsy and anxiety disorders. After one of these two conditions develops, the morbidity rate for the other will significantly increase [9].

The main pharmacologic therapy for acute Bell’s palsy or facial nerve palsy of suspected viral etiology is early short-term oral glucocorticoid treatment. And in severe acute cases, it will combine anti-viral therapy with glucocorticoids, which may improve outcomes [10]. Eye care is also important for patients with incomplete eye closure [11].

Some surgeons suggest for early phase Bell’s palsy patient surgical decompression of the nerve as a possible surgical intervention. But according to recent research, there is only very low quality evidence from randomised controlled trials, and this is insufficient to decide if surgical intervention is beneficial or harmful in the management of Bell’s palsy [12].

Current Research

Acupuncture has become an safe alternative therapy for Bell’s palsy [13], and no evidence of harm has been reported [14,15]. A research showed that there was cortical reorganization in the brain of patients recovered from Bell’s palsy after acupuncture treatment, which also suggested the relationship between the hand motor areas and facial motor areas of Bell’s palsy patients [16]. Another research showed that effects of the acupuncture on functional connectivity were closely related to clinical duration in patients with Bell’s palsy,
which suggested that brain response to acupuncture was closely connected with the status of brain functional connectivity and implied that acupuncture plays a homeostatic role in the Bell's palsy treatment [17]. A Cochrane review on the efficacy of acupuncture for Bell's palsy was unable to draw conclusions successfully, owing to defects in experimental design and reports of the included studies [1]. A recent systematic review and meta-analysis of randomized controlled trials involved 14 trials and 1541 cases, treatment with acupuncture was carried out recently. The results showed that the total effective response rates in the acupuncture and control groups were 95.48% and 82.81%, respectively. Acupuncture therapy was associated with an increased total effective response rate (RR 1.14, 95% CI: 1.04-1.25, P = 0.005) with significant heterogeneity among the included studies (I2 = 87%). However, the review claimed that the current available evidence is insufficient to support that acupuncture is an effective therapy for Bell's palsy due to the poor quality of included researches [15].

Patients with incomplete recovery of facial function following Bell's palsy can have varying degrees of facial weakness, hypertonia, and synkinesis, with functional problems related to incomplete eye closure, brow ptosis, and nasal valve collapse [18]. No treatment has been demonstrated to be effective in the sequelae stage of Bell's palsy except mime therapy, the clinical effectiveness of which has been demonstrated in a randomized controlled trial [19,20]. A recent randomized trial has established the effectiveness of acupuncture treatment for the patients with sequela of Bell's palsy whose onsets were longer than six months [20].

Discussion

According to Traditional Chinese Medicine (TCM) facial paralysis or Bell's palsy is known as ‘deviated mouth’. It was because of the ‘wind’ by past dynasties. And ‘qi’ refers to the vital materials comprising the human body and the physiological works of viscera and bowels, channels and collaterals. It maintains the life activities and associates with the resistance of the human body. ‘Qi’ deficiency may contribute to the invasion of exogenous pathogenic wind. Acupuncture is part of TCM and has been used for thousands of years. It involves inserting fine needles into specific acupuncture points on the skin or applying various other techniques to the acupuncture points to bring about treatment. In Bell's palsy, acupuncture treatment is to regulate channels and balance, harmonize qi and blood, strengthen the human body's resistance to pathogenic elements, increase the excitability of the nerve, promote regeneration of the nerve fibers and formation of its collateral branches, enhance muscle contraction and blood circulation, and accelerate metabolism and recovery of body functions [1,21,22].

Recent researches also confirmed that acupuncture can result in functional connectivity modulation, which is specific and consistent with the tendency of recovery, in the patients with Bell's palsy [23,24]. The effect of acupuncture stimulation may be part of the reason curing this kind of patients.

According to our experience and TCM theory, the proper duration for acupuncture treatment should be about 20 minute a time, and the frequency should be 2 to 3 times a week. Comparing to other pharmacologic therapy or surgical intervention, acupuncture has some advantages. The main advantages are that this is a simple and not expensive procedure. Besides, acupuncture is considered a relatively safe method of treatment with few side effects. Even though the odds are not high, the most possible side effects are bleeding, hematoma or feeling faint [25].

Based on TCM theory, there are nine meridian channel courses circulate through the whole face area. Bladder meridian runs from the origins of sternocleidomastoid and the trapezius muscles.

### Table 1: Common acupuncture point used in Bell's palsy.

<table>
<thead>
<tr>
<th>Acupuncture point</th>
<th>Location</th>
<th>Direction</th>
</tr>
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<tbody>
<tr>
<td>GB34 Fengchi</td>
<td>In the anterior region of the neck, inferior to the occipital bone, in the depression between the origins of sternocleidomastoide and the trapezius muscles.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>TE15 Yifeng</td>
<td>In the anterior region of the neck, Posterior to the earlobe, in the depression anterior to the inferior end of the mastoid process.</td>
<td>Perpendicularly to the side eye</td>
</tr>
<tr>
<td>ST7 Xiaguan</td>
<td>On the face, in the depression between the midpoint of the inferior or border of the zygomatic arch and the mandibular notch.</td>
<td>Transversely to the mid eyebrow</td>
</tr>
<tr>
<td>GB14 Yangbai</td>
<td>On the head, 1 B-cun superior to the eye-brow, directly superior to the centre of the pupil.</td>
<td>Transversally toward BL2</td>
</tr>
<tr>
<td>BL2 Cuanzhu</td>
<td>On the head, in the depression at the medial end of the eyebrow.</td>
<td>Transversally toward TE21</td>
</tr>
<tr>
<td>TE25 Sizhukong</td>
<td>On the head, in the depression at the lateral end of the eyebrow.</td>
<td>Transversally toward BL2</td>
</tr>
<tr>
<td>ST4 Dicang</td>
<td>On the face, 0.4 F-cun lateral to the angle of the mouth.</td>
<td>Transversally toward ST5</td>
</tr>
<tr>
<td>ST6 Jiache</td>
<td>On the face, one fingerbreadth (middle finger) anterior to the angle of the mandible.</td>
<td>Transversally toward ST4</td>
</tr>
<tr>
<td>LI10 Yingxiang</td>
<td>On the face, in the nasolabial sulcus, at the same level as the midpoint of the lateral border of the ala of the nose.</td>
<td>Obliquely along the nasolabial sulcus</td>
</tr>
<tr>
<td>GV26 Shuigou</td>
<td>On the face, at the junction of the upper one third and lower two thirds of the philtrum midline.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>CV25 Chengjiang</td>
<td>On the face, in the depression in the centre of the mentolabial sulcus.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>LI4 Hegu</td>
<td>On the dorsum of the hand, radial to the midpoint of the second metacarpal.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>LI11 Quchi</td>
<td>On the lateral aspect of the elbow, at the midpoint of the line connecting LU5 with the lateral epicondyle of the humerus. When the elbow is fully flexed, LI11 is located in the depression on the lateral end of the cubital crease.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>TE5 Waiguan</td>
<td>On the posterior aspect of the forarm, midpoint of the intersosseous space between the radius and the ulna, 2 B-cun proximal to the dorsal wrist crease.</td>
<td>Perpendicular to skin</td>
</tr>
<tr>
<td>ST40 Fenglong</td>
<td>On the anterolateral aspect of the leg, lateral border of the tibialis anterior muscle, 5 B-cun superior to the prominence of the lateral malleolus.</td>
<td>Perpendicular to skin</td>
</tr>
</tbody>
</table>
Patients.

Even though high quality RCTs and clinical evidence are appreciated, current researches and results suggest that acupuncture plays a crucial role in the Bell's palsy treatment. In addition, acupuncture does relieve Bell's palsy sequelae and improve outcome of these patients.

References


