

Acupuncture for Bell's palsy (Review)

He L, Zhou M, Zhou D, Wu B, Li N, Kong SY, Zhang D, Li Q, Yang J, Zhang X



**THE COCHRANE
COLLABORATION®**

This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2009, Issue 1

<http://www.thecochranelibrary.com>



TABLE OF CONTENTS

HEADER	1
ABSTRACT	1
PLAIN LANGUAGE SUMMARY	2
BACKGROUND	2
OBJECTIVES	3
METHODS	3
RESULTS	5
DISCUSSION	7
AUTHORS' CONCLUSIONS	7
ACKNOWLEDGEMENTS	8
REFERENCES	8
CHARACTERISTICS OF STUDIES	11
DATA AND ANALYSES	20
APPENDICES	20
WHAT'S NEW	21
HISTORY	22
CONTRIBUTIONS OF AUTHORS	22
DECLARATIONS OF INTEREST	22
SOURCES OF SUPPORT	23
INDEX TERMS	23

[Intervention Review]

Acupuncture for Bell's palsy

Li He¹, Muke Zhou², Dong Zhou², Bin Wu³, N Li⁴, SY Kong⁵, Dongping Zhang⁶, Qifu Li², Jie Yang⁵, Xia Zhang⁷

¹Department of Neurology, West China Hospital, Sichuan University, Chengdu, China. ²Department of Neurology, West China Hospital, Sichuan University, Chengdu, China. ³Department of Acupuncture and Moxibustion, West China Hospital, Chengdu, China. ⁴Department of Acupuncture and Moxibustion, West China Hospital, Sichuan, China. ⁵Department of Neurology, West China Hospital, Chengdu, China. ⁶Department of Neurology, West China Hospital, Sichuan University, Chengdu, China. ⁷West China University of Medical Science, Chengdu, China

Contact address: Li He, Department of Neurology, West China Hospital, Sichuan University, Wai Nan Guo Xue Xiang #37, Chengdu, Sichuan, 610041, China. heli2003new@126.com.

Editorial group: Cochrane Neuromuscular Disease Group.

Publication status and date: Edited (no change to conclusions), published in Issue 1, 2009.

Review content assessed as up-to-date: 29 April 2006.

Citation: He L, Zhou M, Zhou D, Wu B, Li N, Kong SY, Zhang D, Li Q, Yang J, Zhang X. Acupuncture for Bell's palsy. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD002914. DOI: 10.1002/14651858.CD002914.pub3.

Copyright © 2009 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

ABSTRACT

Background

Bell's palsy or idiopathic facial palsy is an acute facial paralysis due to inflammation of the facial nerve. A number of studies published in China have suggested acupuncture is beneficial for facial palsy.

Objectives

The objective of this review was to examine the efficacy of acupuncture in hastening recovery and reducing long-term morbidity from Bell's palsy.

Search strategy

We searched the Cochrane Neuromuscular Disease Group Trials Register, MEDLINE (January 1966 to April 2006), EMBASE (January 1980 to April 2006), LILACS (from January 1982 to April 2006) and the Chinese Biomedical Retrieval System (January 1978 to April 2006) for randomised controlled trials using 'Bell's palsy' and its synonyms, 'idiopathic facial paralysis' or 'facial palsy' as well as search terms including 'acupuncture'. Chinese journals in which we thought we might find randomised controlled trials or controlled clinical trials relevant to our study were handsearched. We reviewed the bibliographies of the randomised trials and contacted the authors and known experts in the field to identify additional published or unpublished data.

Selection criteria

We included all randomised or quasi-randomised controlled trials involving acupuncture in the treatment of Bell's palsy irrespective of any language restrictions.

Data collection and analysis

Two review authors identified potential articles from the literature search and extracted data independently using a data extraction form. The assessment of methodological quality included allocation concealment, patient blinding, differences at baseline of the experimental groups and completeness of follow-up. Two review authors assessed quality independently. All disagreements were resolved by discussion between the review authors.

Main results

Six studies including a total of 537 participants met the inclusion criteria. Five of them used acupuncture while another one used acupuncture combined with drugs. No trials reported on the outcomes specified for this review.

Harmful side effects were not reported in any of the trials. Flaws in study design or reporting (particularly uncertain allocation concealment and substantial loss to follow-up) and clinical differences between trials prevented conclusions about the efficacy of acupuncture.

Authors' conclusions

The quality of the included trials was inadequate to allow any conclusion about the efficacy of acupuncture. More research with high quality trials is needed.

PLAIN LANGUAGE SUMMARY

Acupuncture for facial paralysis

Bell's palsy or idiopathic facial palsy is the most common disorder affecting the facial nerves and results in weakness or paralysis on one side of the face. The paralysis causes distortion of the face and interferes with normal functions, such as closing the eye and eating. It is thought to be caused by inflammation of the facial nerve.

According to Traditional Chinese Medicine, facial paralysis is known as 'deviated mouth'. It was attributed to 'wind' by past dynasties. 'Qi' refers to the vital substances comprising the human body and the physiological functions of viscera and bowels, channels and collaterals. It maintains life activities and reflects the resistance of the human body. Deficiency of 'qi' allows the invasion of exogenous pathogenic wind. Acupuncture is part of Traditional Chinese Medicine and dates back thousands of years. It involves inserting fine needles into specific points on the skin or applying various other techniques to the acupuncture points to bring about healing. In Bell's palsy, acupuncture treatment might have numerous beneficial effects. This review aimed to review systematically all randomised controlled trials and controlled clinical trials, which examined the effectiveness of acupuncture for Bell's palsy. Six studies including a total of 537 participants met the inclusion criteria. Five studies used acupuncture while the other used acupuncture combined with drugs. No trials reported on the outcomes specified for this review. Harmful side effects were not reported in any of the trials. Flaws in study design or reporting (particularly whether the process of assigning people to different groups was hidden and also substantial losses to follow-up), and clinical differences between trials prevented conclusions about the efficacy of acupuncture. The quality of the included trials was inadequate to allow any conclusion about the efficacy of acupuncture. More research with high quality trials is needed.

BACKGROUND

Bell's palsy or idiopathic facial palsy is a unilateral, lower motor neuron facial paralysis, which is acute in onset. It is the most common disorder affecting the facial nerves and results in weakness or paralysis on one side of the face. The paralysis causes distortion of facial features and interferes with normal functions, such as closing the eye and eating. Adour et al. (Adour 1978) advocated making a diagnosis based on the history and clinical symptoms including the presence of taste and the absence of hearing problems. May and Klein (May 1991) recommended excluding other diagnostic

entities based on a defined workup and a lengthy differential diagnosis.

Studies of incidence have been carried out in the United States and in Japan (Brandenburg 1993; Katusic 1986; Yanagihara 1988). All relied on retrospective examination of hospital and clinic records to ascertain cases and are likely to have underestimated the frequency of mild cases that remained undiagnosed or were treated in primary care. Crude incidence rates in these studies were similar: in Rochester, Minnesota, USA, annual incidence was 25 per 100,

000 population; in Laredo, Texas, USA, 23.5 per 100, 000 in men and 32.7 per 100, 000 in women; and in the Ehime prefecture, Japan, 30 per 100, 000 population. Rates for men and women were similar in Rochester and in the Ehime prefecture. The peak incidence lies between 20 and 40 years of age. Both sides of the face are affected equally (Martyn 1997; Prescott 1988).

Etiology and pathophysiology are heavily disputed. A viral infection, vascular ischemia, autoimmune inflammation and heredity have been proposed as the underlying cause (Adour 1982; Burgess 1984; Lorber 1996). From observations with the polymerase chain reaction to detect viral DNA, a herpes simplex virus mediated viral inflammatory immune mechanism has become more widely accepted as the cause (Jackson 1999).

The prognosis is on the whole favourable. Jabor reported that 84% showed satisfactory recovery without any treatment (Jabor 1996). One of the largest series of people with Bell's palsy, including those who were not receiving specific therapy, also showed that 85% of participants began to recover within three weeks after onset (Peitersen 1982). However 15% suffer moderate to severe sequelae. Prognosis is influenced by age and time until first sign of recovery. Prognostic testing currently involves various electrophysiological tests. Degeneration of more than 90% of the facial nerve carries a poor prognosis for recovery (Jabor 1996). Logistic regression analysis (Katusic 1986) suggested that the most important predictors of incomplete recovery were complete facial weakness, pain other than in or around the ear, and systemic hypertension.

Controversy remains regarding the effectiveness of commonly used pharmacologic therapies, steroids and aciclovir. Since a viral cause has long been postulated aciclovir would seem to be a promising drug, but studies have not adequately assessed its use (Adour 1996; Jabor 1996; Jackson 1999; McCormick 1972; Murakami 1996; Allen 2004). Two systematic reviews concluded that Bell's palsy could be effectively treated with corticosteroids in the first seven days (Grogan 2001; Ramsey 2000). One found that participants treated with combined aciclovir and prednisone had a better outcome than those treated with prednisone alone (Grogan 2001). However in the Cochrane systematic review, the available evidence from randomised controlled trials did not show significant benefit from corticosteroids (Salinas 2004). Surgical decompression for Bell's palsy has been proposed for people who have had electroneurography that demonstrates a compound muscle action potential amplitude decrease greater than 90% and who are in a time window roughly two to three weeks after the onset of paralysis (Fisch 1981).

According to Traditional Chinese Medicine (TCM) facial paralysis is known as 'deviated mouth'. It was attributed to 'wind' by past dynasties. 'Qi' refers to the vital substances comprising the human body and the physiological functions of viscera and bowels, channels and collaterals. It maintains life activities and reflects the resistance of the human body. Deficiency of 'qi' allows the

invasion of exogenous pathogenic wind. Acupuncture is part of traditional Chinese medicine (TCM) and dates back thousands of years. It involves inserting fine needles into specific points on the skin or applying various other techniques to the acupuncture points to bring about healing. In Bell's palsy, acupuncture treatment is thought to regulate channels and collaterals, harmonize qi and blood, strengthen the body's resistance to pathogenic factors, 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 (He 1995; Ren 1994). A number of studies especially in China have suggested a good therapeutic effect of acupuncture on facial palsy. The literature reports a low-est cure rate of 37 per cent and a highest of 100 per cent, averaging 81% (He 1995). This conclusion is from a non-systematic review of over 50 articles. However, the authors did not examine the quality of studies included in their review, so the results may be affected by the inclusion of studies of poor quality. There is no known systematic review of acupuncture in the treatment of Bell's palsy.

This review aims to review systematically all randomised controlled trials (RCTs) and controlled clinical trials (CCTs), which examine the effectiveness of acupuncture for Bell's palsy.

OBJECTIVES

The objective of this review was to examine the efficacy of acupuncture in hastening recovery and reducing long-term morbidity from Bell's palsy.

METHODS

Criteria for considering studies for this review

Types of studies

We searched for all randomised controlled trials (RCTs) or quasi-randomised controlled trials involving acupuncture in the treatment of Bell's palsy irrespective of any language restrictions.

Types of participants

We included all participants with Bell's palsy of all degrees of severity within 14 days from onset. Bell's palsy was preferably defined according to clinical diagnostic criteria as idiopathic lower motor neuron facial paralysis of sudden onset (one to two days) without other pathology. Chronic sequelae and cases of facial paralysis involving diabetes, herpes zoster or other causes of facial paralysis were not included.

Types of interventions

We included all types of acupuncture treatment and all types of control intervention including placebo, no acupuncture and any other intervention. Acupuncture was limited to the stimulation of acupuncture points at classical meridian points and trigger points by needle insertion. Although derived from needle acupuncture, methods of stimulating acupuncture points other than needle insertion, e.g. acupressure or surface electrodes or laser acupuncture, are quite different in manipulation and tools used, so these techniques were excluded. If sham acupuncture was used, it was defined as the superficial needling of non-acupuncture points without needle manipulation, done either proximally or distally to the true acupuncture points or both.

Types of outcome measures

Primary outcomes

The primary outcome measure was the number of participants with incomplete recovery consisting of cosmetically disabling persistent sequelae of facial paralysis evaluated by clinical criteria six months after onset.

Secondary outcomes

Secondary outcome measures were:

1. Number of participants with complete facial paralysis evaluated by clinical criteria of TCM three months after onset;
2. Number of participants with motor synkinesis, crocodile tears or facial spasm six months after onset;
3. Number of participants reporting adverse effects attributable to acupuncture during treatment.

Search methods for identification of studies

Electronic searches

We searched the Cochrane Neuromuscular Disease Group Trials Register for randomised controlled trials using 'Bell's palsy' and its synonyms, 'idiopathic facial paralysis' or 'facial palsy' as well as search terms including 'acupuncture'. We also searched MEDLINE (January 1966 to April 2006), EMBASE (January 1980 to April 2006), LILACS (from January 1982 to April 2006) and the Chinese Biomedical Retrieval System (January 1978 to April 2006).

For electronic search strategies, see [Appendix 1](#) and [Appendix 2](#).

Searching other resources

Chinese journals in which we thought we might find RCTs or CCTs relevant to our study were handsearched. We reviewed the bibliographies of the randomised trials and contacted the authors and known experts in the field to identify additional published or unpublished data.

Data collection and analysis

Selection of studies

Titles and abstracts identified from the register were scrutinized by two review authors. The full texts of all potentially relevant studies were obtained for independent assessment by the review authors. The review authors decided which trials fitted the inclusion criteria. Disagreements about inclusion criteria were resolved by discussion between the review authors.

Data extraction and management

Data on participants, methods, interventions, outcomes and results were extracted by two review authors independently using a data extraction form. Missing data were obtained from the trial authors whenever possible.

The assessment of adequacy of the acupuncture treatment was extracted to document whether 'de qi' was elicited. 'De qi' also known as 'needling sensation', refers to induction of channel qi after the needle is inserted. During the 'needling sensation' participants may feel soreness, numbness, distension, heaviness around the point, or coldness, warmth, itching, pain and the feeling of an electric shock. The operator may feel tenseness and a dragging sensation around the needle. It is used by many TCM practitioners as a confirmatory signal of successfully needling a point.

Assessment of risk of bias in included studies

The assessment of methodological quality took into account allocation concealment, patient blinding, differences at baseline of the experimental groups and completeness of follow-up. These items were assessed according to the Cochrane Collaboration standard scheme: A: adequate, grade B: unclear, grade C: inadequate.

Two review authors (L He, N Li) assessed quality independently. Disagreement between the review authors was resolved by discussion.

Assessment of reporting biases

We would have used a funnel plot to investigate the possibility of publication bias. Effect size would have been plotted against study size in a graphical display, which would give some indication

whether or not some studies with particular study and effect size combination had not been published or located.

Data synthesis

Review Manager 4.2 (RevMan) software was used for the statistical analysis. If meta-analysis was possible, results of clinically and statistically homogeneous trials were to be pooled to provide estimates of the efficacy of acupuncture in Bell's palsy. Results for dichotomous outcomes were to be expressed as relative risks (RRs) and risk differences (RDs) with 95% confidence intervals. For trials that were clinically heterogeneous or presented insufficient information for pooling, a descriptive analysis was performed.

We would have calculated a weighted treatment effect using a fixed-effect model across trials with the Cochrane statistical package, RevMan. Results would have been expressed as relative risks (RRs) with 95% confidence intervals and risk differences (RDs) with 95% confidence intervals for dichotomous outcomes. We would have analysed all the primary and secondary outcomes under consideration.

For the meta-analysis, if necessary the results using the primary or secondary outcome measures from studies with different follow-up periods were to be appropriately re-scaled on the assumption of constant rates of change.

Subgroup analysis and investigation of heterogeneity

We would have analysed the following subgroups of interest:

1. Time from onset of Bell's palsy to start of treatment (three days or less after onset, more than three and up to seven days after onset, and more than seven days after onset);
2. Younger and older (adults 49 years of age or less; adults aged 50 years or more). This is because prognosis is influenced by age (according to clinical experience, people aged 50 years or more have poorer prognosis than that of people younger than 50 years)

Sensitivity analysis

We would have undertaken a sensitivity analysis on the basis of methodological quality and to test for heterogeneity in the results across studies using a Mantel-Haenszel chi-squared test.

RESULTS

Description of studies

See: [Characteristics of included studies](#); [Characteristics of excluded studies](#).

Results of the search

The literature search and handsearching identified 47 potentially relevant articles. Of these, six RCTs were included involving 537 participants with Bell's palsy (Li 2005; Liu 1996; Ma 2004; Shao 1999a; Yang 2001; Yu 1999).

Included studies

In the first included study (Shao 1999a), 108 participants between the ages of 42 and 78 were randomly assigned to an experimental or control group. In both groups the participants were treated with dexamethasone, vitamin B1, vitamin B12, CDP-vitamin Bp (cytidinediphosphocholine-vitamin Bp, a specific form of vitamin Bp used for cerebral circulation deterioration. Other names include: CDP-choline). In the experimental group, the treatment consisted of selecting four to five points from Taiyang (EX-HN 5), Xiaguan (ST7), Jiache (ST6), Dicang (ST4), Quanliao (SI 18), Yifeng (SJ 17) and Yingxiang (LI 20), and one to two points from Hegu (LI 4), Fenglong (ST40), Zusanli (ST36), Taichong (LR 3), then inserting from between five and seven needles. The manipulation and duration of application were not described. The intervention took place once daily for a total of three courses at four-day intervals. The length of one course was 15 days. Outcomes were assessed before the intervention and at the end of last intervention. The first study (Shao 1999a) compared two groups: (a) Group 1, the experimental group (acupuncture combined with drugs dexamethasone, vitamin B1, vitamin B12, CDP-vitamin Bp and ribavirin) and (b) Group 2, the control group (the same drugs as used in experimental group). The experimental group was treated with acupuncture at five to seven specific documented points combined with drugs. The control group received exactly the same drug therapy as the experimental group. In the experimental group, the cure rate was 52% (30 cases), the markedly effective rate was 26% (15 cases), the effective rate was 21% (12 cases), the ineffective rate was 2% (one case) and the total effective rate was 98% (57 cases). This was compared with the control group where the cure rate was 12% (six cases), 54% markedly effective rate (27 cases), 20% effective rate (10 cases), 14% ineffective rate (seven cases) and 86% total effective rate (43 cases) respectively. A significant difference was found between the experimental and placebo groups in the cure rate ($P < 0.01$) and total effective rate ($P < 0.05$). The study indicated that the therapeutic effect in the experiment group was much better than that in the control group.

In the second included study (Liu 1996), 130 participants between the ages of eight and 75 were randomly assigned to an experimental or control group. In the experimental group, the treatment consisted of inserting up to 12 needles (30 x 45 mm) into various points: Yangbai (BL 14), Sibai (ST2), Jingming (BL 1), Quanliao (SI 18), Taiyang (EX-HN 5), Zanzhu (BL 2), Tongziliao (GB 1), Yifeng (SJ 17), Dicang (ST4), Yingxiang (LI 20), Fengchi (GB 20) and Hegu (LI 4). The length of application was 30 min-

utes. The needles were manipulated to achieve 'De qi'. The control group was administered dexamethasone, vitamin B and Dexamethasone. Outcomes were assessed before the intervention and at the end of last intervention. The cure rate, effective rate, ineffective rate and total effective rate in the experimental group were 74% cure rate (48 cases), 23% effective rate (15 cases), 3% ineffective rate (two cases) and 97% total effective rate (63 cases) respectively, while in the control group they were 45% cure rate (30 cases), 31% effective rate (20 cases), 23% ineffective rate (15 cases) and 77% total effective rate (50 cases) respectively. The statistical data showed there was a significant difference between the experimental and the control group in each of the study outcomes ($P < 0.01$) such that the therapeutic effect in the acupuncture group was superior to that of the drug group.

In the third included study (Yu 1999), 50 participants between the age of 17 and 78 were randomly assigned to an experimental or control group. In the experimental group, the treatment consisted of inserting up to eight needles (40 mm length) at an angle of 45 degrees to the skin surface from Sizhukong (SJ 23) to Taiyang (EX-HN 5), from Yangbai (BL 14) to Yuyao (EX-HN 4), from Sibai (ST2) to Dicang (ST4), from Xianguan (ST7) to Jiache (ST6), from Yingxiang (LI 20) to Jingming (BL 1), from Dicang (ST4) to Jiache (ST6), from Renzhong (DU, GV 36) to Dicang (ST4), and from Yifeng (SJ 17) to Jiache (ST6). The length of application was 20 minutes. Strong stimulation was applied at the moment of inserting and withdrawing. The control group was administered Chinese medicine (details not reported), vitamin B, and steroid treatment. Outcomes were assessed before the intervention and at the end of last intervention. In the experimental group, the cure rate was 83.3% (25 cases), the effective rate was 16.7% (five cases) and total effective rate 100% (30 cases) were respectively higher than those of the control group: cure rate 45% (nine cases), effective rate 10% (two cases) and total effective rate 55% (11 cases), showing a statistically significant difference ($P < 0.01$) in favour of acupuncture.

In the fourth included study (Ma 2004), 95 HIV antibody positive participants with facial paralysis were randomly assigned to acupuncture, moxibustion, acupuncture plus moxibustion or control group. In the acupuncture group, the treatment consisted of inserting up to 13 needles (40 mm length) in the Yangbai (BL 14), Sibai (ST2), Yifeng (SJ 17), Qianzheng (EX-HN 17), Yingxiang (LI 20), Dicang (ST4), Jiache (ST6), Qihai (RN6), and Guanyuan (RN4) points on the paralytic side and Hegu (LI 4), Zusanli (ST36) points on both sides. The needles were manipulated until 'De qi' was achieved. The length of application was 30 minutes. The control group received an intramuscular injection of vitamin B1 and B12. The intervention took place once daily for a total of six courses at two-day intervals. The length of one course is five days. The outcome measures were assessed before the start of the intervention and two days after last intervention. The experimental group was treated with acupuncture at 13 spe-

cific documented points. The control group received Vitamin B therapy. In the experimental group, the cure rate was 63%, effective rate 27%, ineffective rate 10%, total effective rate 90% compared with control group 17%, 40%, 43% and 57%. A significant difference was found between the experimental and control groups in the cure rate ($P < 0.01$) and total effective rate ($P < 0.01$). The study indicated that the therapeutic effect in the experiment group was much better than that in the control group.

In the fifth included study (Li 2005), 94 participants between the age of six and 65 were randomly assigned to an experimental or control group. In the experimental group, the treatment consisted of inserting up to 11 needles in the skin surface from the Dicang (ST4) to Jiache (ST6) point, from the Yangbai (BL 14) to Yuyao (EX-HN 4) point, and inserting a needle in the Cuanzhu (BL2), Taiyang (EX-HN 5), Yingxiang (LI 20), Xianguan (ST7), Yifeng (SJ 17), Hegu (LI 4) and Taichong (LR3) points. The length of application was 20 minutes. Stimulation was applied by electric current (electronic acupuncture). The control group was given Chinese traditional manipulation, which consisted of finger massaging the Dicang (ST4), Jiache (ST6), Yangbai (BL 14), Yuyao (EX-HN 4), Cuanzhu (BL2), Taiyang (EX-HN 5), Yingxiang (LI 20), Xianguan (ST7), Yifeng (SJ 17), and Hegu (LI 4) points. The intervention took place once daily for a total of four courses at two-day intervals. The length of one course was five days. The outcome measures were assessed before the start of the intervention and two days after the last intervention. The cure rate, markedly effective rate, effective rate, ineffective rate and total effective rate in the experimental group were 62.5%, 25%, 12.5%, 0% and 100% respectively, while in the control group 63%, 28%, 9%, 0% and 100%. The statistical data showed there was no significant difference between the experimental and the control group in each item of the study outcomes ($P > 0.05$).

In the sixth included study (Yang 2001), 60 participants between the age of 15 and 58 were randomly assigned to an experimental or control group. In the control group, the treatment consisted of putting surface electrodes at the Hegu (LI 4), Jiache (ST6), Dicang (ST4), Xianguan (ST7), Yifeng (SJ 17), Taiyang (EX-HN 5) and Sibai (ST2) points. Stimulation was applied by using an electric current. The length of application was two minutes. In the experimental group the treatment consisted of inserting up to 9 needles (40 mm length) from Dicang (ST4) to Jiache (ST6) point, from Yangbai (BL 14) to Yuyao (EX-HN 4) point respectively, and inserting a needle in the Yingxiang (LI 20), Xianguan (ST7), Sibai (ST2), Yifeng (SJ 17) and Hegu (LI 4) points on the paralytic side. The needles were manipulated until 'De qi' was achieved and then stimulation was applied by using electric current (electronic acupuncture). The length of application was 30 minutes. The intervention took place once daily for a total of 21 days. Outcomes were assessed before the intervention and at the end of the last intervention.

The experimental group was treated by putting surface electrodes at six specific documented points and by using an electric cur-

rent. The control group received acupuncture at seven specific documented points. In the experimental group, the cure rate was 23.3%, effective rate 76.7%, ineffective rate 0%, total effective rate 100% compared with the control group 13.3%, 87.6%, 0% and 100% on 14th day after treatment. A significant difference was found between the experimental and control groups in the cure rate ($P < 0.05$) but no significant difference was found in the total effective rate ($P < 0.05$). In the experimental group, the cure rate (93.3%), effective rate (6.7%) and the total effective rate (100%) were respectively similar with those of the control group (cure rate 90.0%, effective rate 10.0% and total effective rate 100%) on the 21st day, showing no statistically significant difference ($P > 0.05$). The study indicated that the therapeutic effect in the experimental group was similar to that in the control group.

None of these studies reported follow-up.

Excluded studies

Forty trials were excluded for the following reasons: (1) no control group was used (Ren 1987; Wu 1987; Zhang 1997b); (2) trials compared different methods of acupuncture (Gao 1998; Li 1987; Li 1997; Xing 1997; Zang 1999; Zhang 1997a); (3) randomisation was not used (Anon 1998; Liu 1995; Shao 1999b; Zhu 1995); (4) acupuncture and Chinese herb were compared with Western medicine (Chen 2003; Huang 1999; Shui 1999); (5) infra-red ray therapy apparatus was applied in the experimental group but not in the control group (Peng 2002); (5) moxibustion was applied in the experimental group but not in the control group (Diao 2002; Diao 2003; Li 2004a; Wang 2003); (6) acupuncture was applied in both or all groups (Chen 2000; Chen 2004; Huang 2001; Li 2002; Li 2004b; Liu 2001; Liu 2005; Pan 2004; Wang 2004; Wang 2005a; Wang 2005b; Yang 2002; Yang 2003; Ye 2003; Yu 2003; Zeng 2006; Zhang 2003; Zhang 2005; Zhong 2005; Zhou 2004).

Risk of bias in included studies

The trials included methodological and/or reporting shortcomings. Randomisation for all trials was performed, but the method of randomisation was reported for only one of the included trials (Li 2005). Allocation concealment was rated as unclear for all studies, as no explicit statements about concealment were reported in trials. Neither the blinding method nor the completeness of follow-up was reported in any one of the six articles. Only Yu et al (Yu 1999) and Yang et al (Yang 2001) reported that baseline differences between groups were not significant.

Effects of interventions

Six studies including a total of 537 participants met the inclusion criteria for the review but their methodological quality was poor. Five used acupuncture (Li 2005; Liu 1996; Ma 2004; Yang 2001; Yu 1999) and one acupuncture combined with drugs (Shao 1999a). Four of the included trials compared acupuncture with drugs (Liu 1996; Ma 2004; Shao 1999a; Yu 1999), while two compared acupuncture with manipulation and physical therapy respectively. No trials reported the outcomes specified for this review, instead they reported grades as “cure”, “markedly effective”, “effective” and “ineffective”, and therefore they could not be combined for meta-analysis.

The presence of harmful side effects was not reported in any of the trials.

Six small randomised controlled trials were included but due to flaws in study designs or reporting (particularly uncertain allocation concealment and substantial loss to follow up) and clinical differences between trials, data from trials were not combined in a meta-analysis.

There were inadequate data to perform any of the planned subgroup analyses.

DISCUSSION

Six randomised clinical trials with a total of 537 participants, comparing acupuncture with other forms of therapy for Bell's palsy or idiopathic facial palsy, met the inclusion criteria for this review. None of these trials reported on the outcomes specified for this review. The research methods (method of randomisation, blinding, allocation concealment and completeness of follow-up) were not clearly outlined in any of the trials. The outcome measures used are not currently recognised and did not provide strong objective data. Moreover, the trials varied greatly with respect to the precise nature of the acupuncture intervention, study duration and the method of outcome assessment. Although the authors of the trials reported beneficial effects, the review authors consider that the conclusions from the available trials comparing acupuncture with no acupuncture or with other drugs are unreliable because of methodological shortcomings. Trials are needed in which the randomisation is concealed, outcomes approximate to those sought in this review, and assessments are performed by blinded observers.

AUTHORS' CONCLUSIONS

Implications for practice

Six small studies in this review suggested a beneficial effect but the poor quality of the trials precludes firm conclusions.

Implications for research

There is a need for high quality RCTs using a study design which assures high internal validity. These studies should be conducted as randomised controlled trials with adequate allocation concealment, blinding of outcome assessors and adequate handling of any attrition (by means of reporting any losses to follow-up and by performing intention-to-treat analyses).

Six RCTs were identified but their methodological quality was so poor that no reliance could be placed on their conclusions.

ACKNOWLEDGEMENTS

We thank Professor Hughes, Ms Kate Jewitt, Dr Gronseth, Dr Berman, Mr Burton and Ms Louisa Dunn for their advice and constructive comments on our protocol. We also appreciate Chris Silagy, Phil Alderson, Sally Green and Steve McDonald for their helpful comments and suggestions.

REFERENCES

References to studies included in this review

Li 2005 *{published data only}*

Li Jiangping. Comparison the efficacy between acupuncture and manipulation for Bell's palsy. *Chinese Clinical Medicine Research* 2005;**11**(12):1715–6.

Liu 1996 *{published data only}*

Liu Min. Comparison of acupuncture and drug treatment for 130 patients with facial palsy. *Journal of Clinical Acupuncture* 1996;**12**(5,6):56.

Ma 2004 *{published data only}*

Ma Zubin. Clinical Observations on acupuncture and moxibustion treatment of HIV positive peripheral facial paralysis. *Shanghai Journal of Acupuncture and Moxibustion* 2004;**23**(10):19–20.

Shao 1999a *{published data only}*

Shao Shufeng. Acupuncture and western medicine for 58 patients with peripheral facial palsy. *New Chinese Medicine* 1999;**30**(1):14.

Yang 2001 *{published data only}*

Yang Guangyi. Comparison of the efficacy between acupuncture and therapy apparatus for Bell's palsy. *Journal of Clinical Acupuncture and Moxibustion* 2001;**17**(8):28–9.

Yu 1999 *{published data only}*

Yu Yaqin. Analysis of acupuncture for peripheral facial palsy. *Shanghai Journal of Acupuncture and Moxibustion* 1999;**18**(5):26.

References to studies excluded from this review

Anon 1998 *{published data only}*

Anonymous. Traditional Chinese Medicine for facial neuritis. *Journal of Youjiang Medical College for National Minorities* 1998;**18**(2):230–1.

Chen 2000 *{published data only}*

Chen Chaomin. Efficacy analysis of four acupuncture-based treatments for Bell's Palsy. *Jiangsu Journal of Traditional Chinese Medicine* 2000;**21**(10):41–4.

Chen 2003 *{published data only}*

Chen Qingping. Acupuncture plus facial palsy recovery herb for 30 peripheral facial paralysis. *Journal of Chinese Rural Physician* 2003;**5**(5):47–8.

Chen 2004 *{published data only}*

Chen Ying. Comparison the efficacy between electronic acupuncture and corticosteroids for Bell's Palsy in acute phase. *Beijing Journal of Traditional Chinese Medicine* 2004;**23**(2):105–6.

Diao 2002 *{published data only}*

Diao Lihong, et al. Comparison of the efficacy between acupuncture and manipulation for Bell's palsy. *Journal of Huaihua Medical College* 2002;**1**(2):34–5.

Diao 2003 *{published data only}*

Diao Lihong, et al. Acupuncture for 50 acute peripheral facial paralysis. *Study Journal of Traditional Chinese Medicine* 2003;**21**(11):1943.

Gao 1998 *{published data only}*

Gao S, Gao Q. Can the addition of moxibustion during acupuncture therapy improve recovery from Bell's Palsy?. *American Journal of Acupuncture* 1998;**26**(1):33–6.

Huang 1999 *{published data only}*

Huang Xinsheng. Qianzhengsan herb for 86 Bell's palsy patients. *Traditional Chinese Medicine Research* 1999;**12**(5):31–2.

- Huang 2001** *{published data only}*
Huang Weizhen. Acupuncture plus digital compression for 23 refractory facial palsy. *Jilin Journal of Traditional Chinese Medicine* 2001;**3**:44–5.
- Li 1987** *{published data only}*
Li Zhiming, et al. Acupuncture for 1014 facial palsy patients. *Chinese Acupuncture* 1987;**3**:1–3.
- Li 1997** *{published data only}*
Li L, Chen J, Shi T. The therapeutic effects of lifting-twirling manoeuvre in acupuncture treatment of facial paralytic sequelae. *Journal of Traditional Chinese Medicine* 1997;**17**(3):203–6.
- Li 2002** *{published data only}*
Li Ning. Clinical observation of the effects of acupuncture on acute Bell's facial paralysis. *Journal of Beijing University of TCM* 2002;**25**(2):66–8.
- Li 2004a** *{published data only}*
Li Ying, et al. Efficacy of acupuncture and moxibustion in treating Bell's palsy: a multicenter randomized controlled trial in China. *Chinese Medical Journal* 2004;**117**(10):1502–6.
- Li 2004b** *{published data only}*
Li Chun. Acupuncture plus methycobal for peripheral facial paralysis. *Journal of Practical Traditional Chinese Medicine* 2004;**20**(5):245.
- Liu 1995** *{published data only}*
Liu Guizhen. Electronic acupuncture for acute peripheral facial palsy. *Journal of Shanghai Acupuncture* 1995;**14**(6):257.
- Liu 2001** *{published data only}*
Liu Wei. Acupuncture for 187 peripheral facial paralysis. *Journal of Beijing University of TCM* 2001;**24**(2):74–5.
- Liu 2005** *{published data only}*
Liu Xiuling. Acupuncture for peripheral facial paralysis. *Fujian Journal of TCM* 2005;**36**(1):29–30.
- Pan 2004** *{published data only}*
Pan Liangde. Acupuncture plus short wave for 38 peripheral facial paralysis. *Journal of Clinical Acupuncture and Moxibustion* 2004;**20**(4):26–7.
- Peng 2002** *{published data only}*
Peng Zhifeng et al. Comparison the efficacy between acupuncture and drug for Bell's palsy. *Guangdong Journal of odontiasis prevention and cure* 2002;**10**(3):211–2.
- Ren 1987** *{published data only}*
* Ren Liujiang. Acupuncture for 450 facial palsy patients. *Chinese Acupuncture* 1987;**3**:13–4.
- Shao 1999b** *{published data only}*
Shao Mingyue. Acupuncture for 195 patients with facial palsy. *Clinical Journal of Acupuncture* 1999;**15**(12):14–5.
- Shui 1999** *{published data only}*
Shui Ruiying. Qianzhengsan Herb for 35 peripheral facial palsy patients. *Hebei Journal of Conjugation of Traditional Chinese Medicine and Western Medicine* 1999;**8**(5):782–3.
- Wang 2003** *{published data only}*
Wang Guanming. Treatment for 87 Cases of peripheral facial paralysis with the Integration of TCM and Western Medicine and the use of herbs and acupuncture and moxibustion. *Shanghai Journal of Stomatolog* 2003;**12**(4):304–6.
- Wang 2004** *{published data only}*
Wang XH, Zhang LM, Han M, Zhang KQ, Jiang JJ. Treatment of Bell's palsy with combination of traditional Chinese medicine and western medicine. *West China Journal of Stomatology* 2004;**22**(3):211–3.
- Wang 2005a** *{published data only}*
Wang Zhaoyang, et al. Acupuncture for acute peripheral facial paralysis. *Journal of Beijing University of TCM* 2005;**12**(2):12–14.
- Wang 2005b** *{published data only}*
Wang Sufang. Acupuncture for 80 peripheral facial paralysis by stages. *Modern Traditiona1 Chinese Medicine* 2005;**25**(5):47–8.
- Wu 1987** *{published data only}*
* Wu Jingwei. Acupuncture for 220 peripheral facial palsy patients. *Chinese Acupuncture* 1987;**3**:19–20.
- Xing 1997** *{published data only}*
Xing W, Liu H. Clinical Observation on acupuncture treatment of persistent facial paralysis. *Journal of Traditional Chinese Medicine* 1997;**17**(1):18–20.
- Yang 2002** *{published data only}*
Yang Jinshan. Acupuncture plus herbs for peripheral facial paralysis. *Journal of Clinical Acupuncture and Moxibustion* 2002;**18**(5):5–6.
- Yang 2003** *{published data only}*
Yang Yi. Acupuncture for 80 Acute peripheral facial paralysis. *Journal of Emergency in Traditional Chinese Medicine* 2003;**5**:444–5.
- Ye 2003** *{published data only}*
Ye Tianshen. Acupuncture plus methycobal injection for 35 refractory facial palsy. *Jiangxi Journal of Traditional Chinese Medicine* 2003;**34**(3):40–1.
- Yu 2003** *{published data only}*
Yu Jindong. Point Injection plus acupuncture for acute peripheral facial paralysis. *Journal of Clinical Acupuncture and Moxibustion* 2003;**19**(12):22–3.
- Zang 1999** *{published data only}*
Zang Junqi. 80 Cases of peripheral facial paralysis treated by acupuncture with vibrating shallow insertion. *Journal of Traditional Chinese Medicine* 1999;**19**(1):44–7.
- Zeng 2006** *{published data only}*
Zeng Xian. Acupuncture plus point injection for 90 peripheral facial paralysis. *Zhejiang Journal of Traditional Chinese Medicine* 2006;**41**(1):35–6.
- Zhang 1997a** *{published data only}*
Zhang Xuexun. Electric needle therapy for peripheral facial paralysis. *Journal of Traditional Chinese Medicine* 1997;**17**(1):47–9.
- Zhang 1997b** *{published data only}*
Zhang Yuhong. Clinical experience in acupuncture treatment of facial paralysis. *Journal of Traditional Chinese Medicine* 1997;**17**(3):217–9.
- Zhang 2003** *{published data only}*
Zhang Xin. Acupuncture for 52 facial palsy. *Xinjiang Journal of Traditional Chinese Medicine* 2003;**21**(3):25–6.

Zhang 2005 *{published data only}*

Zhang Hao. Acupuncture combined with facial muscle training for peripheral facial paralysis. *Chinese Journal of Rehabilitation Theory Practice* 2005;**11**(12):1037–8.

Zhong 2005 *{published data only}*

Zhong Yingzhi. Acupuncture and moxibustion cooperates with the point to inject and treat obstinate 32 cases of facial paralysis. *Journal of Yunnan College of Traditional Chinese Medicine* 2005;**28**(3):22–3.

Zhou 2004 *{published data only}*

Zhou Yanling, et al. Acupuncture plus manipulation for 88 peripheral facial paralysis. *Hei Longjiang Journal of Traditional Chinese Medicine* 2004;**4**:38–9.

Zhu 1995 *{published data only}*

Zhu Lejin. Different therapy for 214 facial palsy patients. *Jianguo Traditional Chinese Medicine* 1995;**16**(3):31–2.

Additional references**Adour 1978**

Adour KK, Byl FM, Hilsinger RL Jr, Kahn ZM, Sheldon MI. The true nature of Bell's palsy: Analysis of 1000 consecutive patients. *Laryngoscope* 1978;**88**:787–801. [MEDLINE: 78155470 78155470]

Adour 1982

Adour KK. Current concepts in neurology: diagnosis and management of facial paralysis. *New England Journal of Medicine* 1982;**307**(6):348–51. [MEDLINE: 82219939]

Adour 1996

Adour KK, Ruboyanes JM, Von Doersten PG, Byl FM, Trent CS, Queensberry CP, et al. Bell's palsy treatment with acyclovir and prednisone compared with prednisone alone: a double-blind, randomised, controlled trial. *Annals of Otolaryngology, Rhinology and Laryngology* 1996;**105**(5):371–8. [MEDLINE: 96218980]

Allen 2004

Allen D, Dunn L. Aciclovir for Bell's palsy (Cochrane review). *Cochrane Database of Systematic Reviews* 2004, Issue 3.

Brandenburg 1993

Brandenburg NA, Annegers JF. Incidence and risk factors for Bell's palsy in Laredo, Texas 1974–82. *Neuroepidemiology* 1993;**12**(6):313–25. [MEDLINE: 94142820]

Burgess 1984

Burgess LPA, Yim DWS, Lepore ML. Bell's palsy: the steroid controversy revisited. *Laryngoscope* 1984;**94**(11 Pt 1):1472–6. [MEDLINE: 85035542]

Fisch 1981

Fisch U. Surgery for Bell's palsy. *Archives of Otolaryngology* 1981;**107**(1):1–11. [MEDLINE: 81133041]

Grogan 2001

Grogan PM, Gronseth GS. Practice parameter: steroids, acyclovir, and surgery for Bell's palsy (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2001;**56**:830–6.

He 1995

He SH, Zhang HL, Liu Rong. Review on acupuncture treatment of peripheral facial paralysis during the past decade. *Journal of*

Traditional Chinese Medicine 1995;**15**(1):63–7. [MEDLINE: 95302786]

Jabor 1996

Jabor MA, Gianoli G. Management of Bell's palsy. *Journal of the Louisiana State Medical Society* 1996;**148**(7):279–83. [MEDLINE: 96412707]

Jackson 1999

Jackson CG, Von Doersten PG. The facial nerve. Current trends in diagnosis, treatment, and rehabilitation. *Medical Clinics of North America* 1999;**83**(1):179–95. [MEDLINE: 99126930]

Katusic 1986

Katusic SK, Beard CM, Wiederholt WC, Bergstralh EJ, Kurland LT. Incidence, clinical features, and prognosis in Bell's palsy, Rochester, Minnesota, 1968–82. *Annals of Neurology* 1986;**20**(5):622–7. [MEDLINE: 87074746]

Lorber 1996

Lorber B. Are all diseases infectious?. *Annals of Internal Medicine* 1996;**125**(10):844–51. [MEDLINE: 97037760]

Martyn 1997

Martyn CN, Hughes RA. Epidemiology of peripheral neuropathy. *Journal of Neurology, Neurosurgery and Psychiatry* 1997;**62**(4):310–8. [MEDLINE: 97252565]

May 1991

May M, Klein S. Differential diagnosis of facial nerve palsy. *Otolaryngologic Clinics of North America* 1991;**24**(3):613–45. [MEDLINE: 76242016]

McCormick 1972

McCormick DP. Herpes simplex as a cause of Bell's palsy. *Lancet* 1972;**1**(7757):937–9. [MEDLINE: 72167086]

Murakami 1996

Murakami S, Mizobuchi M, Nakashiro Y, Doi T, Hato N, Yanagihara N. Bell's palsy and herpes simplex virus; identification of viral DNA in endoneurial fluid and muscle. *Annals of Internal Medicine* 1996;**124**(1 Pt 1):27–30. [MEDLINE: 96096347]

Peitersen 1982

Peitersen E. The natural history of Bell's palsy. *American Journal of Otolaryngology* 1982;**4**(2):107–11. [MEDLINE: 83072045]

Prescott 1988

Prescott CA. Idiopathic facial nerve paralysis (the effect of treatment with steroids). *Journal of Laryngology and Otolaryngology* 1988;**102**(5):403–7. [MEDLINE: 88285974]

Ramsey 2000

Ramsey MJ, DerSimonian R, Hottel MR, Burgess LP. Corticosteroid treatment for idiopathic facial nerve paralysis: a meta-analysis for idiopathic facial nerve paralysis: a meta-analysis. *Laryngoscope* 2000;**110**(3 Pt 1):335–41.

Ren 1994

Ren XQ. A survey of acupuncture treatment for peripheral facial paralysis. *Journal of Traditional Chinese Medicine* 1994;**14**(2):139–46. [MEDLINE: 95057250]

Salinas 2004

Salinas RA, Alvarez G, Alvarez MI, Ferreira J. Corticosteroids for Bell's palsy (idiopathic facial paralysis) (Cochrane Review). *Cochrane Database of Systematic Reviews* 2004, Issue 4. [Art. No.: CD001942. DOI: 10.1002/14651858.CD001942.pub3]

Yanagihara 1988

Yanagihara N. Incidence of Bell's palsy. *Annals of Otolaryngology and Laryngology* 1988;**137**(Supplement):3-4. [MEDLINE: 89075616]

* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Li 2005

Methods	Randomised design. Sample size = 94 (withdrawals: unclear). Experimental Group: 48 acupuncture. Control Group: 46 manipulation. Treatment follow up: after the fourth treatment session. Treatment duration: 7 x 4 days.	
Participants	Inclusion: participants with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity. Aged from 6 to 65, mean age: unclear. Male 43, female 51.	
Interventions	Experimental group: treatment with acupuncture, five days per week with two rest days. Control group: treatment with manipulation, five days per week. Size of needles: unclear. Total number of sites: 11. Length of application: 20 minutes. Length of session: 1 week. Total number of treatment sessions:4.	
Outcomes	Cured (disappearance of all signs and symptoms, the facial symmetry and the function of mimetic muscle were fully restored after treatment). Markedly effective (the facial symmetry was normal in repose, however, during movement, low-grade paralysis persisted after treatment). Improved (the facial symmetry was improved, however, during movement, paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).	
Notes	Experimental group: Cured: 30; Markedly effective:12; Improved:6; No effect:0. Control group: Cured: 29; Markedly effective: 13; Improved: 4; No effect:0.	
Risk of bias		
Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Liu 1996

Methods	Randomised design. Sample size = 130 (withdrawals: unclear). Group 1: 65 participants treated with acupuncture. Group 2: 65 participants treated with drug treatment. Follow-up: after 10 days treatment. Treatment duration: 10 x 1 day.	
Participants	Inclusion criteria: participants with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity within 14 days from onset. Age 8 to 75, mean 38.5 years. Males 70, females 60.	
Interventions	Group 1: treatment with acupuncture (multiple superficial needling). Group 2: treatment with drugs. Size of needles: 30 x 45 mm. Drugs: dexamethasone 20 mg three times a day, Vitamin B and Dibazol. The Vitamin B and Dibazol prescriptions were unclear. Total number of sites: 12. Length of application: 30 minutes. Length of session: 10 days. Total number of treatment sessions: 1.	
Outcomes	Cured (disappearance of all signs and symptoms, the facial symmetry and the function of mimetic muscle were fully restored after treatment). Improved (the facial symmetry was improved or restored, but some paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).	
Notes	Experimental group: Cured: 48 participants; Improved: 15 participants; No effect: 2 participants. Control Group: Cured: 30 participants; Improved: 20 participants; No effect: 15 participants.	
<i>Risk of bias</i>		
Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Ma 2004

Methods	Randomised design. Sample size: 95 (withdrawals unclear). Experimental group: 48 acupuncture. Control group: 47 drugs (Vitamin B1, Vitamin B12). Treatment follow up: after the sixth treatment session. Treatment duration: 7 x 6 days.
Participants	Inclusion: HIV antibody positive people with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity. Age from 15 to 48, mean age: unclear. Male 46, female 49.
Interventions	Experimental group: treatments with acupuncture, five days per week with two rest days. Control group: treatments with drugs, five days per week. Size of needles: 40 mm length. Drugs: Vitamin B1, Vitamin B12, Prescriptions: Vitamin B1 100 mg plus Vitamin B12 500 ug, intramuscular injection once a day. Total number of sites: 13. Length of application: unclear. Length of session: 1 week. Total number of treatment sessions: 6.
Outcomes	Cured (disappearance of all signs and symptoms, the facial symmetry and the function of mimetic muscle were fully restored after treatment). Improved (the facial symmetry was improved or restored, however, during movement, paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).
Notes	Experimental group: Cured: 30; Improved: 13; No effect: 5. Control group: Cured: 8; Improved: 19; No effect: 20.

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Shao 1999a

Methods	Randomised design. Sample size: 108 (withdrawals unclear)
Participants	Inclusion criteria: participants with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity within 14 days from onset. Group 1: aged from 42 to 78, mean : 57 years.

Shao 1999a (Continued)

	Males 45, females 13. Group 2: aged from 43 to 77, mean: 56 years. Males 35, females 15.
Interventions	Group 1: 3 treatments of acupuncture combined with drugs, at 4-day intervals. Group 2: 3 treatments with drugs, at 4-day intervals. Size of needles: unclear. Drugs: Dexamethasone, vitamin B1, vitamin B12, CDP-vitamin Bp and ribavirin. The prescriptions were unclear. Total number of sites: 5 to 7. Length of application: unclear. Length of session: 15 days. Total number of treatment sessions: 3.
Outcomes	Cured (disappearance of all signs and symptoms: facial symmetry and the function of mimetic muscle were fully restored after treatment.). Markedly effective (the facial symmetry was normal in repose, but during movement, low-grade paralysis persisted after treatment). Improved (the facial symmetry was improved, however, during movement, paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).
Notes	Experimental group: Cured: 30 participants; Markedly effective: 15 participants; Improved: 12; No effect: 1. Control group: Cured: 6 participants; Markedly effective: 27 participants. Improved: 10 participants. No effect: 7 participants.

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Yang 2001

Methods	Randomised design. Sample size: 60. (withdrawals: unclear). Control Group: 30 physical therapy apparatus treatment. Experimental Group: 30 acupuncture. Treatment follow up: 14th day and 21st day during the treatment. Treatment duration: 21 days.
---------	--

Yang 2001 (Continued)

Participants	Inclusion: participants with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity. Age from 15 to 58, mean age: unclear. Male 28, female 32.
Interventions	Control group: treatment with physical therapy apparatus, once a day. Experimental group: treatments with acupuncture, once a day. Size of needles: 40 mm length. Total number of sites: 11 Length of application: 30 minutes. Length of session: 10 days. Duration of treatment 21 days.
Outcomes	Cured (disappearance of all signs and symptoms, the facial symmetry and the function of mimetic muscle were fully restored after treatment). Improved (the facial symmetry was improved or restored, however, during movement, paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).
Notes	14th day after treatment. Control group: Cured: 7; Improved: 23; No effect: 0. Experimental group: Cured: 4; Improved: 26; No effect: 0. 21st day after treatment: Control group: Cured: 28; Improved: 2; No effect: 0. Experimental group: Cured: 27; Improved: 3; No effect: 0.

Risk of bias

Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Yu 1999

Methods	Randomised design. Sample size 50 (withdrawals: unclear). Group 1: 30 participants treated with acupuncture. Group 2: 20 participants treated with drug treatment. Follow-up: after the third treatment session. Treatment duration: 10 x 3 days.
Participants	Inclusion criteria: participants with Bell's palsy defined according to clinical diagnostic criteria of all degrees of severity. Age from 17 to 78, mean: 39.3 years. Males 29, females 21.

Yu 1999 (Continued)

Interventions	<p>Group 1: 3 treatments with acupuncture. Group 2: 3 treatments with drugs. Size of needles: 40 mm. Drugs: medicine, Vitamin B, and steroids. The prescriptions were unclear. Total number of sites: 8. Length of application: 20 minutes. Length of session: 10 days. Total number of treatment sessions: 3.</p>	
Outcomes	<p>Cured (disappearance of all signs and symptoms, the facial symmetry and the function of mimetic muscle were fully restored after treatment). Improved (the facial symmetry was improved or restored, however, during movement, paralysis persisted after treatment). No effect (signs and symptoms unchanged after treatment).</p>	
Notes	<p>Experimental group: Cured: 25 participants; Improved: 5 participants; No effect: 0. Control group: Cured: 9 participants; Improved: 2 participants; No effect: 9 participants.</p>	
Risk of bias		
Item	Authors' judgement	Description
Allocation concealment?	Unclear	B - Unclear

Characteristics of excluded studies [ordered by study ID]

Anon 1998	No randomisation.
Chen 2000	Acupuncture was applied in all groups.
Chen 2003	Acupuncture combined with herbs compared with Western medicine.
Chen 2004	Acupuncture was applied in both groups.
Diao 2002	Moxibustion was applied in the experimental group but not in the control group.
Diao 2003	Moxibustion was applied in the experimental group but not in the control group.

(Continued)

Gao 1998	Comparing different methods of acupuncture.
Huang 1999	Acupuncture plus Chinese herb compared with Western medicine.
Huang 2001	Acupuncture was applied in both groups.
Li 1987	Comparing different methods of acupuncture.
Li 1997	Comparing different methods of acupuncture.
Li 2002	Acupuncture was applied in both groups.
Li 2004a	Moxibustion was applied in the experimental group but not in the control group.
Li 2004b	Acupuncture was applied in both groups.
Liu 1995	No randomisation.
Liu 2001	Acupuncture was applied in both groups.
Liu 2005	Acupuncture was applied in both groups.
Pan 2004	Acupuncture was applied in both groups.
Peng 2002	Infra-red ray therapy apparatus was applied in the experimental group but not in the control group.
Ren 1987	No control group.
Shao 1999b	No randomisation.
Shui 1999	Acupuncture plus Chinese herb compared with Western medicine.
Wang 2003	Moxibustion was applied in the experimental group but not in the control group.
Wang 2004	Acupuncture was applied in both groups.
Wang 2005a	Acupuncture was applied in both groups.
Wang 2005b	Acupuncture was applied in both groups.
Wu 1987	No control group.
Xing 1997	Comparing different methods of acupuncture.
Yang 2002	Acupuncture was applied in both groups.
Yang 2003	Acupuncture was applied in both groups.

(Continued)

Ye 2003	Acupuncture was applied in both groups.
Yu 2003	Acupuncture was applied in both groups.
Zang 1999	Comparing different methods of acupuncture.
Zeng 2006	Acupuncture was applied in both groups.
Zhang 1997a	Comparing different methods of acupuncture.
Zhang 1997b	No control group.
Zhang 2003	Acupuncture was applied in both groups.
Zhang 2005	Acupuncture was applied in both groups.
Zhong 2005	Acupuncture was applied in both groups.
Zhou 2004	Acupuncture was applied in both groups.
Zhu 1995	No randomisation.

DATA AND ANALYSES

This review has no analyses.

APPENDICES

Appendix I. Ovid MEDLINE Search Strategy

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized controlled trials/
4. random allocation/
5. double-blind method/
6. single-blind method/
7. or/1-6
8. animals/ not humans/
9. 7 not 8
10. clinical trial.pt.
11. exp clinical trials/
12. (clin\$ adj25 trial\$).ti,ab.
13. ((singl\$ or doubl\$ or tripl\$ or trebl\$) adj25 (blind\$ or mask\$)).ti,ab.
14. placebos/
15. placebo\$.ti,ab.
16. random\$.ti,ab.
17. research design/
18. or/10-17
19. 18 not 8
20. 19 not 9
21. comparative study/
22. exp evaluation studies/
23. follow up studies/
24. prospective studies/
25. (control\$ or prospectiv\$ or volunteer\$).ti,ab.
26. or/21-25
27. 26 not 8
28. 27 not (9 or 20)
29. 9 or 20 or 28
30. exp Facial Nerve Diseases/
31. bell palsy/
32. facial paralysis/ or hemifacial spasm/
33. ((Bell\$ or facial\$ or hemifacial\$ or unilateral\$ or nerve\$ or cranial\$) adj3 (pals\$ or paralys\$ or paresi\$ or spasm\$)).mp. [mp=title, original title, abstract, name of substance word, subject heading word]
34. 30 or 31 or 32
35. 34 or 33
36. ACUPUNCTURE/
37. exp Acupuncture Therapy/
38. (acupunctur\$ or (needl\$ adj5 (point\$ or insertion\$))).mp. [mp=title, original title, abstract, name of substance word, subject heading word]
39. 36 or 37

40. 38 or 39
41. 35 and 40
42. 29 and 41

Appendix 2. Ovid EMBASE Search Strategy

1. Randomized Controlled Trial/
2. Clinical Trial/
3. Multicenter Study/
4. Controlled Study/
5. Crossover Procedure/
6. Double Blind Procedure/
7. Single Blind Procedure/
8. exp RANDOMIZATION/
9. Major Clinical Study/
10. PLACEBO/
11. Meta Analysis/
12. phase 2 clinical trial/ or phase 3 clinical trial/ or phase 4 clinical trial/
13. (clin\$ adj25 trial\$).tw.
14. ((singl\$ or doubl\$ or tripl\$ or trebl\$) adj25 (blind\$ or mask\$)).tw.
15. placebo\$.tw.
16. random\$.tw.
17. control\$.tw.
18. (meta?analys\$ or systematic review\$).tw.
19. (cross?over or factorial or sham? or dummy).tw.
20. ABAB design\$.tw.
21. or/1-20
22. human/
23. nonhuman/
24. 22 or 23
25. 21 not 24
26. 21 and 22
27. 25 or 26
28. exp Nerve Paralysis/
29. bell palsy/
30. facial nerve paralysis/ or hemifacial spasm/
31. ((Bell\$ or facial\$ or hemifacial\$ or unilateral\$ or cranial\$ or nerve\$) adj3 (pals\$ or paraly\$ or paresi\$ or spasm\$)).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
32. or/28-31
33. ACUPUNCTURE ANALGESIA/ or exp ACUPUNCTURE/
34. (acupunctur\$ or (needl\$ adj5 (point\$ or insertion\$))).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]
35. 33 or 34
36. 32 and 35
37. 27 and 36

WHAT'S NEW

Last assessed as up-to-date: 29 April 2006.

5 May 2008	Amended	Converted to new review format.
------------	---------	---------------------------------

HISTORY

Protocol first published: Issue 1, 2001

Review first published: Issue 1, 2004

16 August 2007	New citation required and conclusions have changed	Substantive amendment The searches for MEDLINE, EMBASE and the Cochrane Neuromuscular Disease Group Trials Register were updated in April 2006. Three new studies were identified.
----------------	--	---

CONTRIBUTIONS OF AUTHORS

LH designed the protocol, assessed study quality, undertook data collection and analysis and wrote the review.

MZ performed literature search, assessed study quality, undertook data collection and analysis.

DZ contributed to the protocol design and data analysis.

BW gave technical support on acupuncture.

NL assessed study quality and gave technical support on acupuncture.

SY contributed to data collection.

DZ contributed to literature search.

QF contributed to literature search.

JY contributed to study quality assessment.

XZ contributed to study quality assessment.

DECLARATIONS OF INTEREST

No conflict of interest reported.

SOURCES OF SUPPORT

Internal sources

- Cochrane Center, China.

External sources

- Chinese Medical Board of New York (CMB), USA.

INDEX TERMS

Medical Subject Headings (MeSH)

Acupuncture Therapy [*methods]; Bell Palsy [drug therapy; *therapy]; Combined Modality Therapy; Randomized Controlled Trials as Topic

MeSH check words

Humans