Acupuncture for depression (Review)

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[Intervention Review]

Acupuncture for depression

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ABSTRACT

Background

There is interest from the community in the use of self help and complementary therapies for depression. This review examined the currently available evidence supporting the use of acupuncture to treat depression.

Objectives

To examine the effectiveness and adverse effects of acupuncture in the treatment for depression.

Search strategy

The following databases were searched: CCDAN-CTR, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE (1966 to Dec 2008), EMBASE (1980 to Dec 2008), PSYCINFO (1874 to Dec 2008), the Database of Abstracts of Reviews of Effectiveness (DARE), CINAHL (1980 to Dec 2008), Wan Fang database (to Dec 2008). The following terms were used: depression, depressive disorder, dysthymic disorder and acupuncture.

Selection criteria

Inclusion criteria included all published and unpublished randomised controlled trials comparing acupuncture with sham acupuncture, no treatment, pharmacological treatment, other structured psychotherapies (cognitive behavioural therapy, psychotherapy or counselling), or standard care. The following modes of treatment were included: acupuncture, electro acupuncture or laser acupuncture. The participants included adult men and women with depression defined by clinical state description, or diagnosed by the Diagnostic and Statistical Manual (DSM-IV), Research Diagnostic Criteria (RDC), International Classification of Disease (ICD) or the Criteria for Classification and Diagnosis of Mental Diseases CCMD-3-R.

Data collection and analysis

Meta-analyses were performed using relative risk for dichotomous outcomes and standard mean differences for continuous outcomes, with 95% confidence intervals. Primary outcomes were reduction in the severity of depression, measured by self rating scales, or by clinician rated scales and an improvement in depression defined as remission versus no remission.

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Main results

This review is an update and now contains data from 30 studies. Following recent searches, 23 new studies have been added and a further 11 trials were excluded (due to suboptimal doses of medication, no clinical outcomes, insufficient reporting). Thirty trials with 2,812 participants are included in the meta-analysis.

There was a high risk of bias in the majority of trials. There was insufficient evidence of a consistent beneficial effect from acupuncture compared with a wait list control or sham acupuncture control. Two trials found acupuncture may have an additive benefit when combined with medication compared with medication alone. A subgroup of participants with depression as a co-morbidity experienced a reduction in depression with manual acupuncture compared with SSRIs (RR 1.66, 95%CI 1.03, 2.68) (three trials, 94 participants). The majority of trials compared manual and electro acupuncture with medication and found no effect between groups.

Authors' conclusions

We found insufficient evidence to recommend the use of acupuncture for people with depression. The results are limited by the high risk of bias in the majority of trials meeting inclusion criteria.

PLAIN LANGUAGE SUMMARY

Acupuncture for depression

Depression is widely experienced in our communities. In clinical depression, people report a lack of interest in life and activities which they otherwise normally enjoy. This can be accompanied by other symptoms including weight loss, over-eating, feelings of uselessness, sleep disturbance, self neglect and social withdrawal, insomnia or hypersomnia (sleeping too much), loss of energy, low self esteem and poor concentration.

Acupuncture has a long history of use in China and Japan. Traditional Chinese medicine theory describes a state of health maintained by a balance of energy in the body. Acupuncture involves the insertion of fine needles into different parts of the body to correct the imbalance of energy in the body. There are a range of styles of acupuncture from traditional/classical acupuncture, auricular acupuncture, trigger point acupuncture, and single point acupuncture. Traditional Chinese Medicine (TCM) and Classical Acupuncture are based on theoretical concepts of Yin and Yang and the Five Elements and explain disease and physiological function. A westernised medical application of acupuncture involves the use of acupuncture using trigger points, segmental points and commonly used formula points. Medical acupuncture may involve the application of acupuncture based on the principles of neurophysiology and anatomy, rather than TCM principles and philosophy. Auricular therapy involves the use of the ear to make a diagnosis and subsequent needling to points on the ear.

There are studies indicating a preference for treatment with self-help and complementary therapies for depression. Thirty trials, and 2812 participants were included in the review and meta-analysis, however there was insufficient evidence that acupuncture can assist with the management of depression.

BACKGROUND

Description of the condition

Clinical depression is a syndrome characterised by a number of behavioural, cognitive and emotional features. Depressed patients often exhibit signs of dysphoric mood, loss of interest in normally enjoyable things, self neglect and social withdrawal, poor appetite or overeating, insomnia or hypersomnia, fatigue or loss of energy, low self esteem, poor concentration or difficulty making decisions, and feelings of hopelessness.

Depression is recognised as a major public health problem, which has a substantial impact on individuals and to society. Depressive disorders are common in the general population. In the United States life time prevalence of a major depressive disorder (MDD) has been reported at 16.2% (Kessler 2007). The World Health Organisation has described depression as an "unseen burden" (Murray

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1996). MDD is associated with a significant loss of work days (Kessler 2007), but also substantial role impairment in relation to household responsibilities, social life, and personal relationships (Kessler 2003). It has been demonstrated in the community that those who suffer depressive disorders experience reduced physical and mental functioning, similar to patients with chronic diseases such as diabetes (Hays 1995 and Wells 1989). Mood disorders have, in addition, been shown to have a greater impact on quality of life compared with conditions such as hypertension and cardiac disease (Spitzer 1995). In addition, depression has considerable financial costs to health services and to society. The economic burden in England is estimated to exceed £9 billion per annum with approximately £370 million going to direct costs of treatment (Thomas 2003).

Description of the intervention

The majority of depressed patients are managed in primary care and do not require hospitalisation. In primary care depression is most frequently treated with antidepressants (Goldman 1999). In addition, there are a range of psychological interventions, including cognitive behaviour therapies, interpersonal therapy, psychotherapy and counselling. Surveys in Australia have shown that Australians report a preference for self-help and complementary therapies for depression (Jorm 1997, Jorm 2000). In the United States, results from a survey indicate that people who are depressed have a higher use of complementary therapies (Kessler 2000).

Acupuncture has a long history of use in China and Japan. Traditional Chinese medicine theory describes a state of health maintained by a balance of energy in the body. Acupuncture involves the insertion of fine needles into different parts of the body to correct the imbalance of energy in the body. There are a range of styles of acupuncture from traditional/classical acupuncture, auricular acupuncture, trigger point acupuncture, and single point acupuncture. Traditional Chinese Medicine (TCM) and Classical Acupuncture are based on theoretical concepts of Yin and Yang and the Five Elements and explain disease and physiological function. A westernised medical application of acupuncture involves the use of acupuncture using trigger points, segmental points and commonly used formula points. Medical acupuncture may involve the application of acupuncture based on the principles of neurophysiology and anatomy, rather than TCM principles and philosophy. Auricular therapy involves the use of the ear to make a diagnosis and subsequent needling to points on the ear.

Acupuncture is not entirely free of adverse events. Two large prospective surveys have been undertaken in the United Kingdom (White 2001, MacPherson 2004). White 2001 reported an incidence of 684 adverse events per 10,000 consultations. The majority were minor events; for example: bleeding, needling pain, or aggravation of symptoms, a lower rate of significant adverse events of 14 per 10,000 were reported. MacPherson 2004 reported a rate of 107 per 1000 patients (95% CI 100 to 115). Three patients reported a serious adverse event. The most common events reported were severe tiredness and exhaustion, pain at the site of needling, and headache. A review of the range and incidence of adverse events associated with acupuncture has been summarised by White 2004. Twelve prospective studies undertaken in the UK, Germany, Singapore, Japan and Sweden, surveyed more than a million treatments and found the risk of a serious adverse event with acupuncture was estimated to be 0.05 per 10,000 treatments, and 0.55 per 10,000 individual patients. From these studies it appears that the risks associated with acupuncture are low, a point reinforced by Vincent 2001 who concluded that acupuncture is safe in competent hands.

How the intervention might work

The rationale of treatment will determine the needling details (for example selection or points, number of needles used) or method of stimulation (for example use of electro-acupuncture which involves passing a pulsed current through body tissues via acupuncture needles), and laser acupuncture (the use of low power laser to stimulate the acupuncture point) . It is possible that these different styles of acupuncture may differ in their effectiveness, although there is little research examining this question.

The effects of acupuncture are mediated in part through the autonomic nervous system. Manual acupuncture causes a broad range of central nervous system responses involving the amygdala, hippocampus, hypothalamus, cerebellum and other limbic structures seen on functional magnetic resonance imaging and EEG (Napadow 2005).

Why it is important to do this review

There is an increasing body of research assessing the effectiveness of acupuncture. In 2005 we published the first version of this systematic review and concluded there was insufficient evidence to determine the efficacy of acupuncture. Since that time, new trials have been published and we have been able to comprehensively access a large literature from China.

OBJECTIVES

To examine the effectiveness and adverse effects of acupuncture in the treatment of depression.

1. To determine whether acupuncture is more effective than sham acupuncture and no treatment with treating depression and improving quality of life;

2. To assess the effectiveness of acupuncture versus standard treatment (defined as medication, and or psychological intervention) with treating depression and improving quality of life;

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3. To determine the adverse events of acupuncture compared with sham acupuncture, no treatment and standard treatment (defined as medication, psychological intervention) with the treatment of depression.

METHODS

Criteria for considering studies for this review

Types of studies

All published and unpublished randomised and quasi randomised controlled trials comparing acupuncture with a control (sham or placebo acupuncture), no treatment, pharmacological treatment, other structured psychotherapies (cognitive behavioural therapy, psychotherapy or counselling), or standard care. Cross over trials were excluded due to uncertainty regarding the period to allow for a washout for acupuncture treatment. Cluster randomised trials were excluded.

Types of participants

Adults with depression (or depression with a co-morbidity) diagnosed by the Diagnostic and Statistical Manual (DSM-IV, APA 1994), or the Research Diagnostic Criteria (RDC, Spitzer 1977), or the International Classification of Disease (ICD, WHO 1993), or the Criteria for Classification and Diagnosis of Mental Diseases CCMD-3-R (Chinese Psychiatric Society 2001).

Types of interventions

Active groups:

1. Manual acupuncture. Manual acupuncture involves the stimulation of anatomical points on the body through the penetration of the skin with thin, solid, metallic needles that are manipulated by the hands;
2. Electro acupuncture. Electro-acupuncture involves passing a pulsed current through the body using acupuncture needles;
3. Laser acupuncture. Laser acupuncture is the use of a low-level laser beam instead of an acupuncture needle to stimulate an acupuncture point.

Control groups:

There are four main categories of comparison groups in trials included within this review. The comparator group in each study was classified into one of the following:

1). Invasive acupuncture control. This includes sham acupuncture which is the insertion of a needle into a non acupuncture point, and minimal acupuncture in which needles are inserted into non acupuncture points, but more superficially, without stimulation or manipulation to avoid obtaining the needling sensation known as De Qi;
2) Non penetrating acupuncture control. Techniques include use of the placebo needle which is the use of a blunted needle which looks as if it is piercing the skin yet does not. Two forms have been developed (Park 2002, Streitberger 1998);
3) Mock electro-acupuncture. This involves use of a decommissioned acupuncture stimulation unit and fixing electrodes to the skin, the switch is turned off;
4) Mock laser acupuncture.
Other comparison or control groups include:
5) no treatment (waiting list, treatment as usual);
6) pharmacological treatment (standard medication to treat depression), medication is grouped into class of pharmacological management;
7) structured psychotherapies (cognitive behavioural therapy, psychotherapy, counselling);
8) other standard care as defined by the country-specific health care setting.
Comparisons with other acupuncture groups do not (for the purposes of this review) constitute an eligible control group.

Types of outcome measures

For inclusion, data on at least one primary outcome needed to be reported:

Primary outcomes

1. Reduction in the severity of depression, measured by self-rating scales such as the Beck Depression Inventory (Beck 1961), or by clinician-rated scales, such as the Hamilton Rating Scale for Depression (Hamilton 1960).
2. Improvement in depression measured as a dichotomous outcome, remission compared to no remission. The authors recognise that subjective assessment may give rise to a source of bias. If a difference was found in this outcome, preference was given to the validated scales.

Secondary outcomes

3. Quality of life indices (such as the Short Form 36 Health Status questionnaire (Ware 1994))
4. Change in use of medication or use of other support systems
5. Adverse events
6. Acceptability of acupuncture, electro acupuncture or laser acupuncture (assessed by questioning participants in the trial, or satisfaction measures).

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Short-term outcomes reported at the end of the trial intervention as well as long-term outcomes are reported separately.

Search methods for identification of studies

Electronic searches

CCDAN-CTR Trials Registers

The Cochrane Collaboration's Depression, Anxiety and Neurosis Review Group maintains two clinical trials registers at their editorial base in Bristol, UK. The CCDAN-CTR references register contains over 23,000 references to international trials (within the scope of CCDAN) and a studies register which contains over 11,000 individually coded trials.

References to trials for inclusion in the Group's registers are collated from routine generic searches of MEDLINE, EMBASE, PsycINFO and CENTRAL; annual searches of PSYNDEX and LILACS and review specific searches of CINAHL, AMED, the Chinese Biomedical Literature Database (CBM) and Wan Fang data. Details of trials are also sourced from international trials registers and hand searching of key journals and conference proceedings.

For this review, the Cochrane Depression, Anxiety & Neurosis Review Group registers were searched using the following terms: depress* or dysthymi* and acupuncture

Contact was made with the Cochrane Complementary Medicine field to search their database for potentially eligible trials.

The following databases were searched using the following items: depression, depressive disorder, dysthymic disorder and acupuncture.

Cochrane Central Register of Controlled Trials (CENTRAL)
MEDLINE (1966 to December 2008)
EMBASE (1980 to December 2008)
PSYCINFO (1874 to December 2008)
Database of Abstracts of Reviews of Effectiveness (DARE) (to December 2008)
CINAHL (January 1980 to present)
Wan Fang database (to December 2008)

Search terms for MEDLINE were as follows:

1. acupuncture.mp.
2. exp Depressive Disorder/
3. Depression/
4. (depress$ or dysthymi$).tw.
5. 1 and (2 or 3 or 4)
6. randomized-controlled-trial.pt.
7. controlled clinical trial.pt.
8. randomized controlled trial.sh.
9. random allocation.sh.
10. double blind method.sh.
11. single blind method.sh.
12. clinical trial.pt.
13. exp clinical trial/
14. (clin$ adj25 trial$).ti,ab.
15. ((singl$ or doubl$ or tripl$ or trebl$) adj25 (blind$ or mask$ or dummy$)).mp.
16. placebos.sh.
17. placebo$.ti,ab.
18. random$.ti,ab.
19. research design.sh.
20. comparative study.sh.
21. exp evaluation studies/
22. follow up studies.sh.
23. prospective studies.sh.
24. (control$ or prospectiv$ or volunteer$).ti,ab.
25. or/6-24
26. (animals not humans).sh.
27. 25 not 26
28. 27 and 5

Searching other resources

The reference lists of selected journals were inspected for more published reports and for citations of unpublished randomised controlled trials.

Personal Communication

The authors of significant papers, and other experts in the field were approached to ask if they knew of other relevant published or unpublished material for this review.

Data collection and analysis

Selection of studies

Translation of relevant Chinese language papers was undertaken. Abstracts of trials were evaluated for their appropriateness for inclusion based on trial design and meeting the criteria of the type of intervention by two authors (CS and PH). Where there was uncertainty about inclusion of the study, the full text was retrieved. The original author was contacted for further information if necessary. Reasons for excluding trials have been stated.

Data extraction and management

Following an assessment for inclusion, the methodology of the trial was assessed. Data were extracted on patients, methods, interventions, outcomes and results. The data were extracted onto hard copy data sheets. Data extraction and assessment of risk of

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bias were made by CS, PH and HM. Missing data or clarification on the study were sought from the respective authors by mail or email.

Assessment of risk of bias in included studies

The Cochrane risk of bias tool was used (Higgins 2008). The tool consists of six items. Two of these assess the strength of the randomisation with reducing selection bias. The third item relating to blinding aims to assess the influence of performance bias on the study results. The fourth item assess the likelihood of incomplete outcome data to assess the effect bias ion the effect estimate. The fifth item assesses selective reporting, and the tendency to preferentially report statistically significant outcomes (this requires a comparison with trial protocols if available). The final item refers to other sources of bias such as deviation form the study protocol, or imbalance at randomisation.

Two authors reviewed each article (CS/PH/HM). Disagreements between review authors that arose at any stage were resolved by email discussion or with a third party, when necessary. When inadequate details of allocation concealment or other aspects of the trial design were omitted, the authors were contacted by email or phone to obtain further additional information (this included translation of communications with Chinese authors).

Measures of treatment effect

Statistical analysis was performed using Review Manager (Revman 2005) software.

We undertook a statistical summary of the data and expressed dichotomous data as a Relative Risks with corresponding 95% confidence intervals (95% CIs). We expressed continuous data as mean difference (MD) with 95% CIs, or as standardised mean difference if outcomes were conceptually the same but measured in different ways, for example the use of different instruments e.g. the Beck Depression Inventory and the Hamilton Rating Scale.

Unit of analysis issues

Trials with multiple arms were included and are described in the Characteristics of included studies. For example, acupuncture might be compared with sham acupuncture and with another arm where no acupuncture was delivered. If there were two acupuncture groups, data from both treatment arms were combined into one group. For studies with a sham control and no treatment control group, the shared intervention was divided evenly between groups as described in the Cochrane Handbook (Higgins 2008). Where outcomes were repeated measures, analysis of outcomes was undertaken at the end of the intervention.

Dealing with missing data

No trialist reported undertaking a intention to treat analysis. We did not impute data for missing data but we did report the proportion lost to follow up and analysed per protocol.

Assessment of heterogeneity

Heterogeneity between studies was investigated by the I^2 statistic (I^2 to or more than 50% was considered indicative of heterogeneity) and the p value from the χ^2 test , and by visual inspection of the forest plots. The interpretation of the I^2 was as follows:

- 10-40% might not be important;
- 30-60% may represent moderate heterogeneity;
- 50-90% may represent substantial heterogeneity;
- 75-100% considerable heterogeneity.

Data synthesis

A random effects model was used to pool the results of all studies, because this model is more conservative than fixed effects model and incorporates both within-study and between-study variance. This was a change from the original protocol due to the heterogeneity of the studies.

Subgroup analysis and investigation of heterogeneity

Pre-specified subgroup analysis aimed to examine the effects of different styles of acupuncture (for example classical/traditional acupuncture versus single point therapy, or auricular acupuncture). Other subgroup analyses planned to explore the effects of treatment in people with different diagnoses (for example, major depression and dysthymia), and in people of different ages (less <65 years and > 65 years).

Sensitivity analysis

A priori, it was planned to perform sensitivity analyses on results to look at the possible contribution of: (1) differences in methodological quality on the robustness of the results, for example, excluding trials with unclear concealment of random allocation, or (2) excluding trials of drop out greater than 20%.

RESULTS

Description of studies

See: Characteristics of included studies; Characteristics of excluded studies; Characteristics of studies awaiting classification.

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Results of the search

The original review included seven trials, and two trials were excluded. This update identified 32 potential trials for assessment. This update includes 30 trials, and excluded 11 trials. See Characteristics of included studies, Characteristics of excluded studies, Characteristics of studies awaiting classification, Characteristics of ongoing studies.

Included studies

Design

A parallel group design was used in all trials. Twenty trials had two groups (acupuncture plus a control group), and nine trials had three arms (Allen 1998, Allen 2006, Cheng 2007, Dong 2007, Duan 2008, Fan 2005, Fu 2008, Luo 1998, Roschke 2000). Trials with multiple arms and the unit of analysis adjusted based on the description in the methods included: Allen 1998, Allen 2006, Dong 2007, Duan 2008, Fan 2005 and Luo 1998.

Eight trials used sham controls. Sham techniques varied. Stimulation of active acupuncture points not used to treat depression was used in two trials (Allen 1998,Allen 2006). Invasive insertion of a needle into non acupuncture points with minimal or no stimulation was reported in five trials (Eich 2000, Fan 2005, Fu 2008, Roschke 2000, Whiting 2008). An inactive laser was used in the Quah Smith 2005 trial. Comparison with a medication or standard care group was reported in 24 trials, placebo medication was reported in the Luo 1998 trial, and no treatment was used in the Tang 2003b trial.

Sample sizes

Studies included in this review were relatively small, ranging from 19 (Whiting 2008) to 460 (Zhang 2003).

Setting

Twenty four studies were undertaken in China, two in the United States of America, two in Germany, and one each in Australia and the United Kingdom.

The majority of studies (16) recruited participants from an inpatient hospital setting, ten trials recruited from both in and outpatients, three trials recruited participants from the community via newspapers, and one trial from primary care.

Participants

Trials recruited participants with country specific diagnostic criteria of depression using the DSM-IV, or the CCMD2/3. A score of >18 was specified in 18 trials. The Eich 2000 trial used ICD 10 F32.0, or 32.1, and Quah Smith 2005 used the BDI with a score of 12-30. Clinical depression was diagnosed using an alternative Chinese diagnotic framework in the He 2005 trial. All other trials solely specified the CCMD-3.

Interventions

The acupuncture delivered in the trials varied in terms of point selection, frequency of treatments and total number of treatments administered. The majority of trials (19) used a standardised treatment protocol with a fixed selection of points administered at each acupuncture session. The selection of points varied and included acupuncture points located on the arms, legs, abdomen and head. Seven trials used a semi-standardised treatment protocol consisting of a pre-defined set of acupuncture points used in combination with acupuncture points selected on the basis of diagnosis and the identification of a symptomatic patterns (Duan 2008, He 2005, Khang 2002, Quah Smith 2005, Wang 2006, Whiting 2008 and Zhang 2003). The treatment protocol was unclear for one study (Han 2002). An individualised treatment for study participants based on their diagnosis was administered in three trials (Allen 1998, Allen 2006 and Wenbin 2002).

Twenty trials reported a needling duration of between 20-30 minutes. The duration of needling was 45 minutes in three trials (Han 2002, Khang 2002 and Luo 1998), and 60 minutes in two trials (Yan 2004, Zhang 2003). No details were reported in five trials (Allen 1998, Eich 2000, Luo 1985, Xiujuan 1994 and Quah Smith 2005). The number of treatment sessions was greater than 30 in 17 trials. One trial was less than ten sessions (Allen 2006 8 sessions), six trials were between 10-20 (Allen 1998, Eich 2000, Tang 2003b, Whiting 2008, Zhang 2003, Zhuang 2004), and two trials delivered between 20 and 30 treatments (Cheng 2007, Wang 2006). The frequency of treatment was daily in most of the longer duration trials. Most trials started with more frequent treatments before reducing frequency to weekly sessions.

Outcomes

The majority of trials assessed depression using the Hamilton Rating Scale for Depression. The Beck Depression Inventory was used in four trials (Allen 2006, Fu 2008, Quah Smith 2005 and Whiting 2008. The Clinical Global Improvement scale was used in six studies (Eich 2000, Han 2002, Luo 1985, Luo 1988, Luo 1998 and Roschke 2000). The Ashberg scale was used in four trials (Han 2002, Luo 1985, Luo 1988, Luo 1998). The instrument used in the Shen 2005 trial was unclear, although they initially assessed eligibility using the Hamilton Rating Scale.

Four trials assessed the outcome at weekly intervals in addition to reporting the main outcome at the end of the intervention. The timing of data collection was unclear in the Whiting 2008 trial, which reported data collection after 12 sessions.

There was variation in the frequency of measurement. Twenty trials measured the outcome of depression at the end of the intervention. Outcome was assessed weekly in addition to the end of the

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intervention in two trials (Khang 2002, Xiujuan 1994), and periodically at pre-specified weekly intervals in six trials (Allen 1998, Allen 2006, Cheng 2007, Ding 2003, Han 2002, and Quah Smith 2005).

Adverse events were reported in four trials (Ding 2003, Duan 2008, Fu 2008, and Zhang 2007). Mean dosage change in medication was reported in Roschke 2000. Quality of life outcomes were reported in three trials (Tang 2003b, Wang 2006, and Whiting 2008).

Excluded studies

Eleven trials were excluded (see Characteristics of excluded studies). Seven studies did not meet the inclusion criteria for the control group, either due to a sub optimal dose of medication, or the fact that a non specified control group was used (He 2007b, Huang 2004, Huang 2005, Lu 2004, Song 1999, Wang 2004, Wang 2005). Two trials contained data from participants who did not meet the diagnosis for depression (Chang-du 1994, Zhou 2007). One trial (Gallagher 2002) did not report on clinical outcomes by group in a follow period to the Allen 1998 trial. No relevant clinical outcomes were reported in the Agelink 2003 trial. Further background information on these trials are presented in the Characteristics of excluded studies.

Risk of bias in included studies

See Figure 1 and Figure 2 for a graphical summary of the risk of bias assessments made by authors for the 30 included studies, based on the six risk of bias domains.

Figure 1. Methodological quality graph: review authors' judgements about each methodological quality item presented as percentages across all included studies.

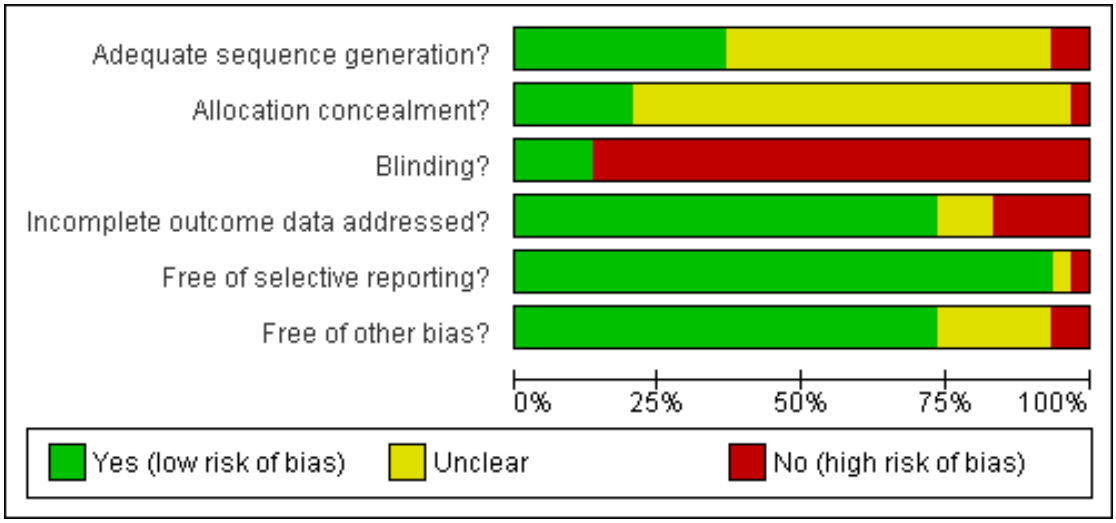

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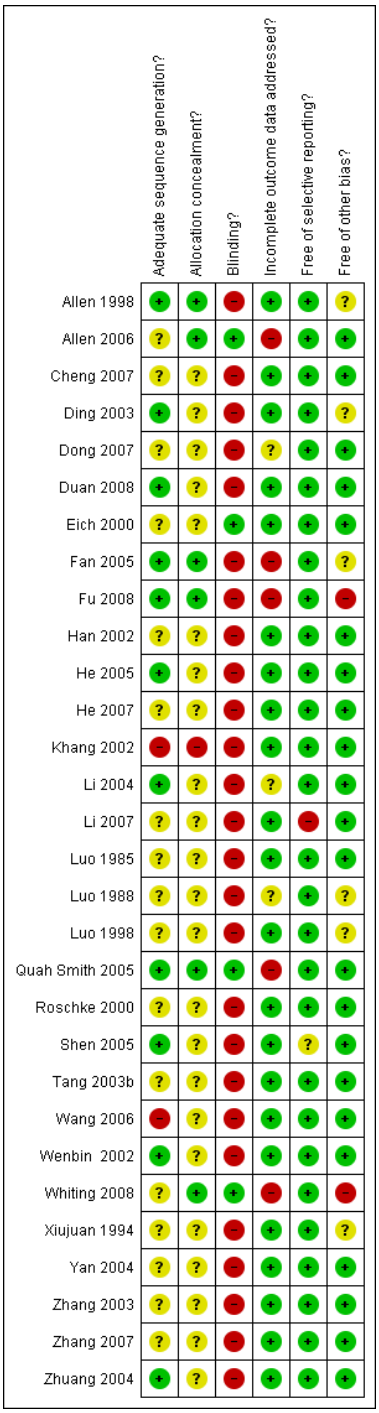
Figure 2. Review authors' judgements about each 'risk of bias' domain for each included study.



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All trials were described as randomised.

Allocation

Using the Cochrane criteria which rates the adequacy of the random allocation concealment, most of the trials were rated as unclear (n=16) or at a high risk of bias in two trials (Khang 2002, Wang 2006. The allocation sequence was assessed as being at a low risk of bias in 11 (30%) trials.

Sequence was computer generated in the Allen 1998, Ding 2003, Duan 2008, Fan 2005, Fu 2008, He 2005, Li 2004, Shen 2005, and Wenbin 2002 trials. The Zhuang 2004 trial used random number tables. The Quah Smith 2005 trial used coin tossing and lot drawing.

Allocation concealment was assessed as being at a low risk of bias in six trials. Central randomisation was undertaken in the Allen 1998, Allen 2006 and Whiting 2008 trials. Fan 2005 and Fu 2008 reported concealment of the allocation using opaque envelopes. Quah Smith 2005 used coded beans. The method of allocation was not reported, or was assessed as unclear, for 24 trials.

Blinding

Blinding was assessed as being at low risk of bias in four trials (13%) (Allen 2006, Eich 2000, Quah Smith 2005, Whiting 2008). Many of the comparisons in this review were of acupuncture versus medication and could not be blinded. For those studies comparing acupuncture with a sham control, we sought evidence of verification of blinding of participants. The outcome assessors were blind in 12 trials Allen 1998, Allen 2006, Duan 2008, Eich 2000, Fan 2005, Fu 2008, He 2007, Khang 2002, Quah Smith 2005, Roschke 2000, Whiting 2008, and Yan 2004.

Incomplete outcome data

Ouctome reporting was assessed as being at a low risk in the majority of trials 22 (73%) trials. Five trials were at high risk due to drop out or in complete data (Allen 2006, Fan 2005, Fu 2008, Quah Smith 2005, Whiting 2008), and reporting bias was unclear in three trials (Dong 2007, Li 2004,Luo 1985).

Selective reporting

The risk of bias from selective reporting was rated as low as the most important outcome measures were always presented and consistent. The study protocol was not available for all studies. In one studyShen 2005comes were assessed by clinical staff. The instrument was not reported but most likely the instrument used to assess eligibility (Shen 2005). Data were not reported on all outcomes used in the study by Li et al (Li 2007).

Other potential sources of bias

The risk of bias from other sources of bias was rated as low for the majority of trials. An imbalance at randomisation was assessed in eight trials (Allen 1998, Ding 2003, Fan 2005, Fu 2008, Luo 1988, Luo 1998, Whiting 2008, Xiujuan 1994).

Effects of interventions

Overall 30 trials contributed data to the meta analysis. The trials contained a total of 2,812 participants. The results are presented by manual acupuncture, electro-acupuncture, laser acupuncture and for a population of patients with depression following a stroke by mode of stimulation, and by comparison by control group (medication type, sham acupuncture, wait list etc).

1) Manual acupuncture versus control

Efficacy outcomes were available from nine trials of acupuncture compared with medication, and two trials reported respectively on quality of life and adverse events. Medication was grouped by the same class of drug.

1.1) Outcome: reduction in the severity of depression

(Figure 3, Analysis 1.1).

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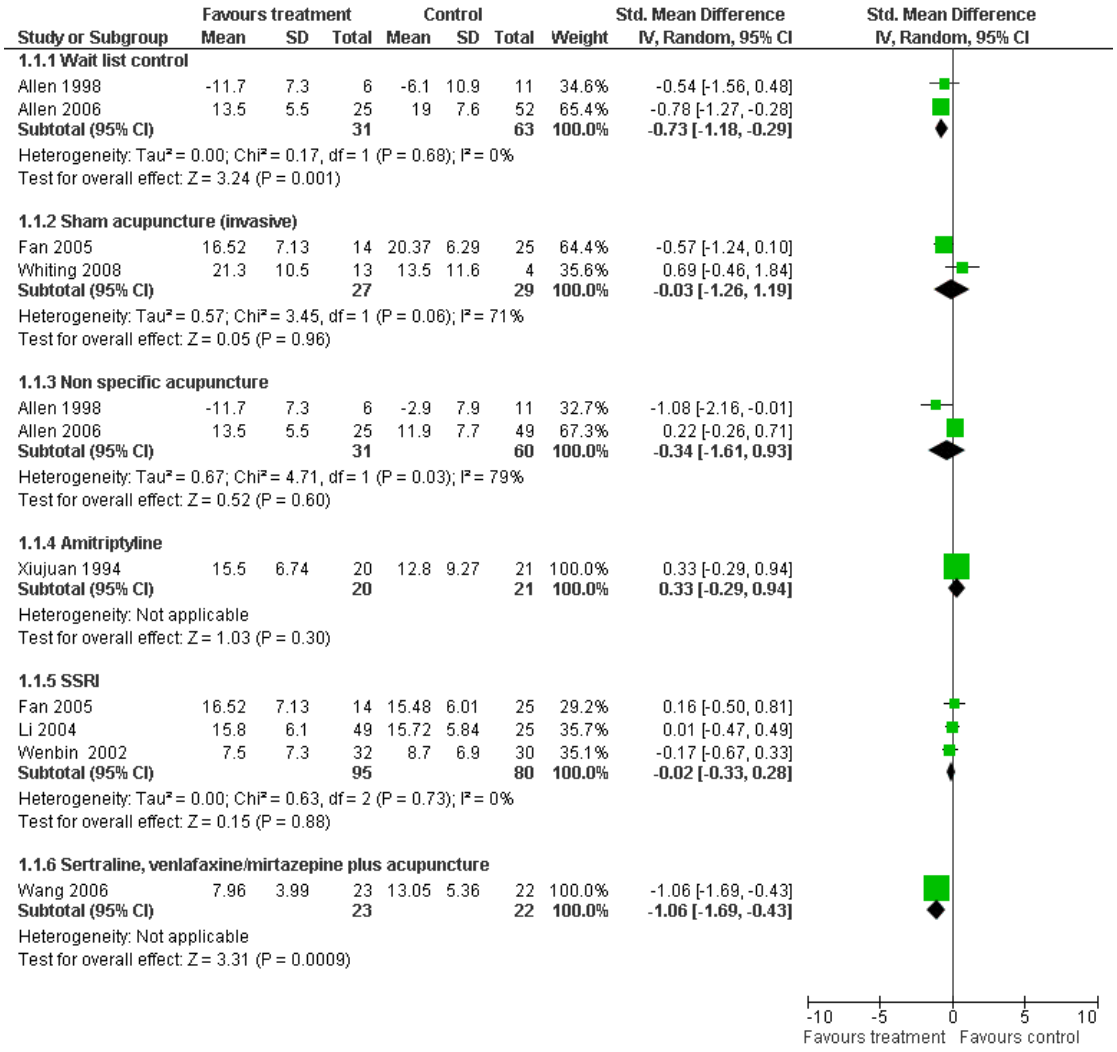
Figure 3. Forest plot of comparison: 1 Manual acupuncture versus control, outcome: 1.1 Reduction in the severity of depression.



1.1.1) Wait list control

Two trials (94 participants) compared acupuncture with a wait list control. There was evidence of a reduction in the severity of depression for participants in the acupuncture group (SMD -0.73, 95%CI -1.18, -0.29) ($I^{2=}$ 0%).

1.1.2) Sham acupuncture

Two trials (56 participants) found no evidence of a reduction in the severity of depression between groups (SMD -0.03, 95%CI -1.26, 1.19) (I^2=71%). There was significant heterogeneity, clinically different points were used and the treatment frequency varied markedly between trials.

1.1.3) Non-specific acupuncture

Two trials (94 participants) found no evidence of a reduction in the severity of depression between groups (SMD -0.34, 95%CI -1.61, 0.93) (I^2=79%). Athough the study protocols of these two studies were similar, there was heterogeneity in the methods with a greater risk of bias in the Allen 2006 trial, although the sample size was larger.

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1.1.4) Amitriptyline

One trial of 41 participants compared acupuncture with amitriptyline. There was no evidence of a difference between acupuncture and amitriptyline (SMD 0.33, 95% CI -0.29, 0.94).

1.1.5) SSRI

Three trials (175 participants) compared acupuncture with fluoxetine, or Prozac, all given within the therapeutic range. There was no evidence of a difference in the reduction in the severity of depression between acupuncture and SSRIs (SMD -0.02, 95%CI -0.33, 0.28).

1.1.6) Sertraline, venlafaxine/mirtazepine

One trial (45 participants) compared acupuncture plus sertraline, venlafaxine/mirtazepine to a combination of sertraline, venlafaxine/mirtazepine alone. There was evidence of a reduction in the severity of depression for participants in the acupuncture plus medication group (SMD -1.06, 95%CI -1.69, -0.43).

B) Outcome: improvement in depression

(see Figure 4, Analysis 1.2)

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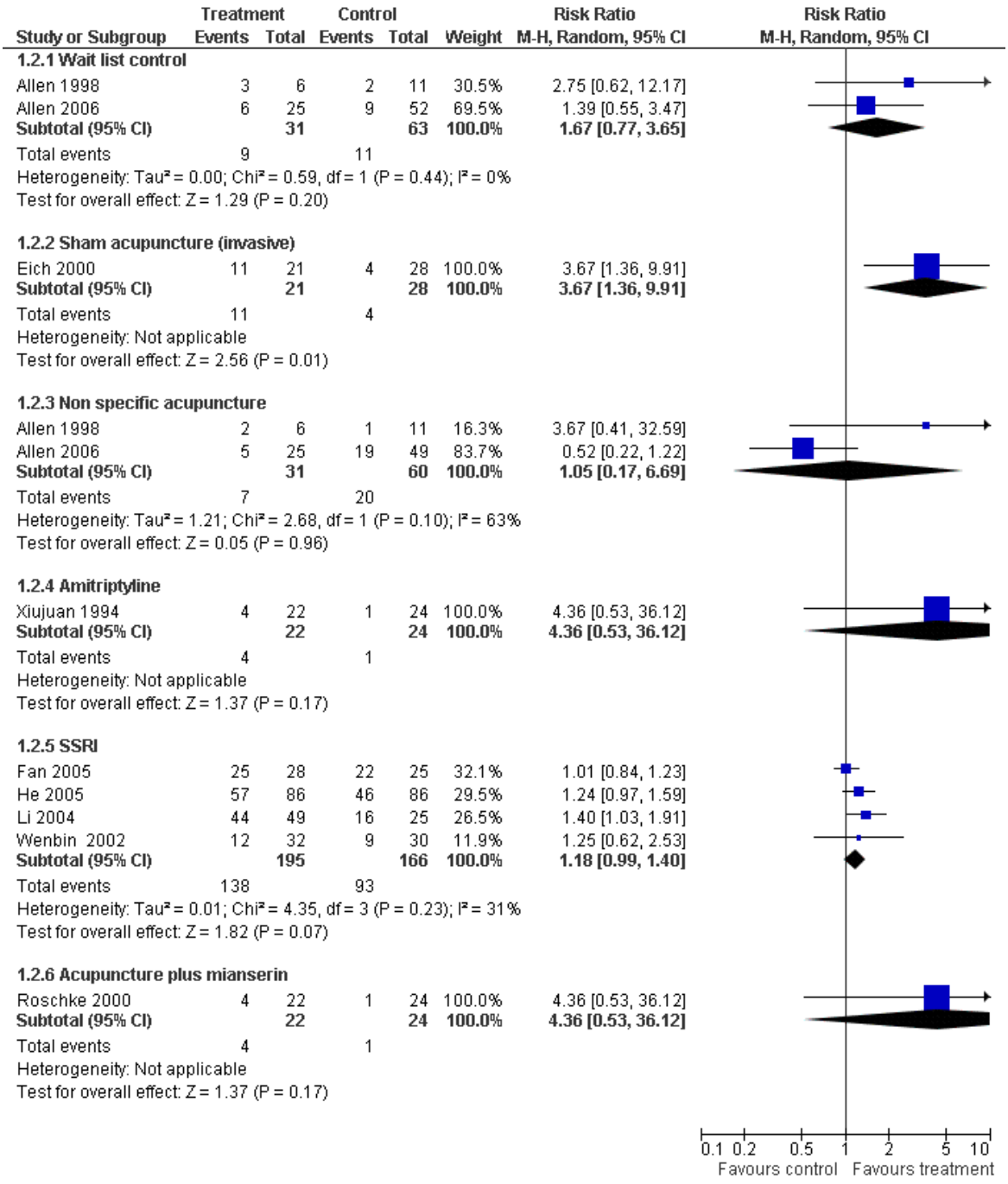
Figure 4. Forest plot of comparison: 1 Manual acupuncture versus control, outcome: 1.2 Improvement in depression.



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1.2.1) Wait list control

Two trials (94 participants) found no evidence of an improvement in depression between groups (RR 1.67, 95% CI 0.77, 3.65,) (I^2=0%).

1.2.2) Sham acupuncture

One trial (49 participants) found acupuncture improved depression compared with sham acupuncture (RR 3.67, 95%CI 1.36, 9.91).

1.2.3) Non specific acupuncture

Two trials (91 participants) found no evidence of an improvement in depression between groups (RR 1.05, 95% CI 0.17, 6.69) (I^2= 63%).

1.2.4) Amitriptyline

One trial (46 participants) found no evidence of an improvement in depression from acupuncture compared with amitriptyline (RR 4.36, 95% CI 0.53, 36.12).

1.2.5) SSRI

There was no evidence of an improvement in depression for participants receiving acupuncture compared with medication, four trials (361 participants), RR 1.18, 95% CI 0.99, 1.40). There was some evidence of statistical heterogeneity (I^2=31%).

1.2.6) Acupuncture plus mianserin

One trial (46 participants) found no evidence of an improvement in depression from acupuncture plus mianserin compared with mianserin (RR 4.36, 95% CI 0.53, 36.12).

C) Outcome: Quality of life-sleep

(Analysis 1.3)

1.3.1 Sertraline, venlafaxine/mirtazepine

One trial (45 participants) of sertraline venlafaxine or mirtazepine plus acupuncture compared with medication alone found acupuncture improved sleep compared with medication (MD-4.62 95%CI -6.93, -2.31).

D) Outcome: Quality of life-emotional

(Analysis 1.4).
One trial (17 participants) found no evidence of an improvement in quality of life emotional domain MD -0.50, 95%CI -36.47, 26.47).

E) Outcome: Adverse events

(see Analysis 1.5).
One trial (17 participants) reported on adverse events. There was no evidence of a difference in the occurrence of adverse events between groups (RR 2.50, 95%CI 0.15, 40.37).

2) Electro- acupuncture versus control

Efficacy outcomes on depression were available from ten trials of acupuncture compared with medication. No other outcomes were reported. Medication was grouped by the same class of drug.

A) Outcome Reduction in the severity of depression

(see Figure 5, Analysis 2.1).

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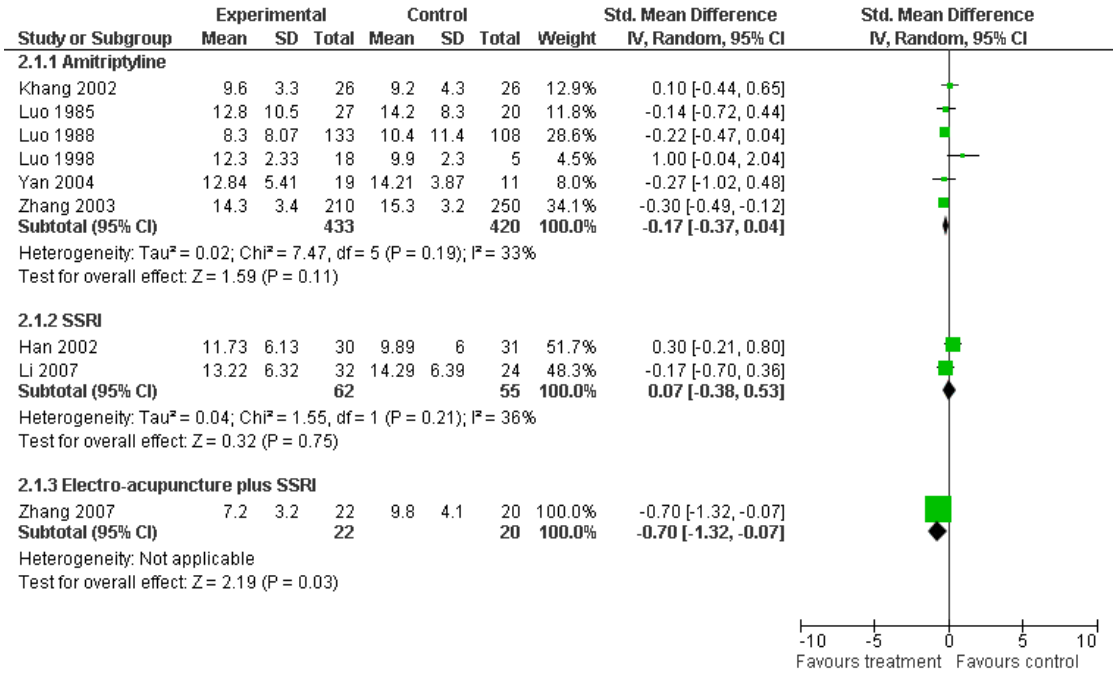
Figure 5. Forest plot of comparison: 2 Electro-acupuncture versus control, outcome: 2.1 Reduction in the severity of depression.



2.1.1) Amitriptyline

Six trials (853 participants) found no evidence of a reduction in the severity of depression between groups (SMD-0.17, 95% CI-0.37, 0.04). There was some statistical heterogeneity I^2=33%, and clinical heterogeneity evident with use of standardised and few acupuncture points, to more comprehensive treatments involving points described in semi-structured treatment protocols.

2.1.2) SSRI

Two trials (117 participants) found no evidence of a reduction in the severity of depression between electro-acupuncture and SSRI (SMD 0.07, 95%CI -0.38, 0.53) I^2=36%).

2.1.3) Electro-acupuncture plus SSRI

One small trial (42 participants) found a reduction in the severity of depression in the electro-acupuncture plus medication group compared with medication alone (SMD 0.70, 95% CI -1.32, -0.07).

B) Outcome: Improvement in depression

(see Figure 6, Analysis 2.2).

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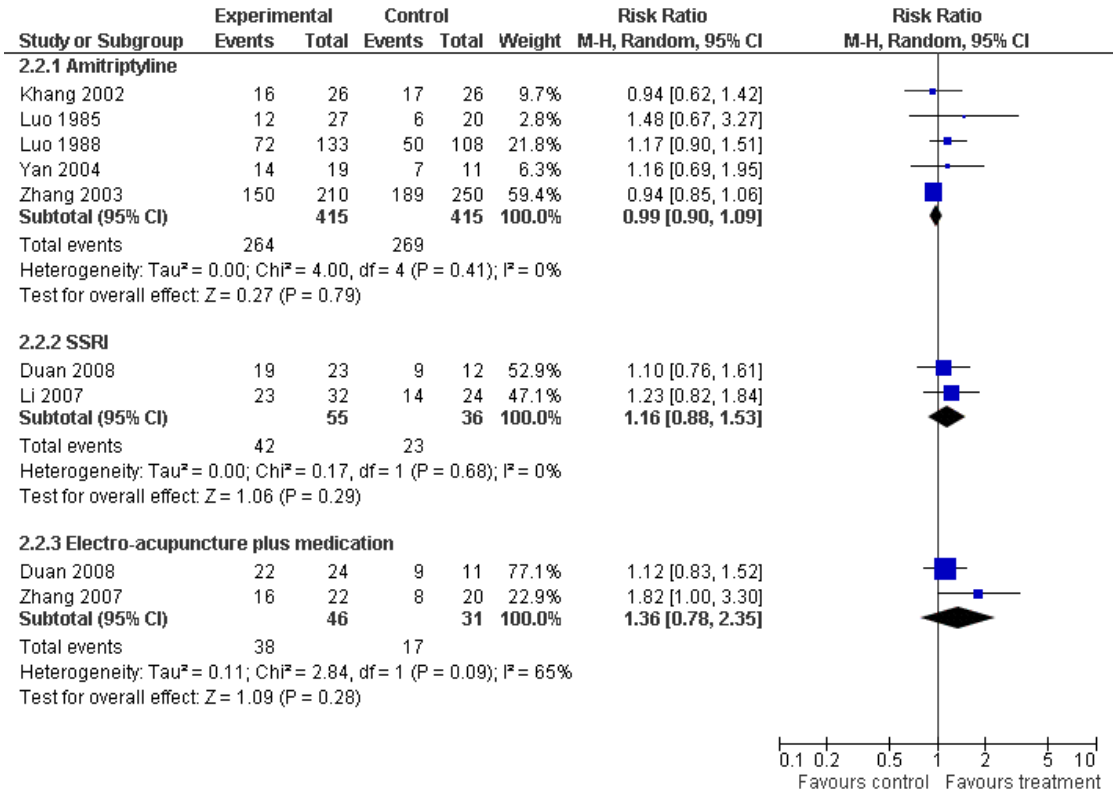
Figure 6. Forest plot of comparison: 2 Electro-acupuncture versus control, outcome: 2.2 Improvement in depression.



2.2.1) Amitriptyline

Five trials (830 participants) found no evidence of an improvement in depression between groups (RR 0.99, 95% CI 0.90, 1.09) (I^2=0%). Two trials may have used sub optimal doses (Luo 1985, Zhang 2003).

2.2.2) SSRI

Two trials (91 participants) found no evidence of an improvement in depression between groups (RR 1.16, 95%CI 0.88,1.53) (I^2= 0%).

2.2.3) Electro-acupuncture plus medication

Two trials (77 participants) found no evidence of an improvement in depression between groups (RR 1.36, 95%CI 0.78, 2.35).

C) Outcome: Adverse events

Limited data were reported on adverse effects. Han 2002 reported on adverse effects for the acupuncture group only, these included sleep disturbances 10%, headaches 7% and tiredness 7%. Adverse effects relating to dry mouth, constipation, heartburn, sleepiness and headaches were reported by the medicated group, although data were not presented. Luo 1988 reported that adverse effects in the amitriptyline group were significantly greater than in the acupuncture group. Luo 1998 reported 138 adverse events in the acupuncture group, with headaches (n=26), palpitations (n=16) and dryness of the mouth (n=16) the most common adverse effects. In the medicated group, 342 participants reported slight adverse effects, with palpitations (n=43), dryness of the mouth (n=42), and physical tiredness (n=38) most commonly reported.

3) Laser acupuncture versus control

A: Outcome reduction in the severity of depression

(Analysis 3.1).

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One trial (26 participants) found an improvement in the severity of depression for laser acupuncture compared with the sham control (MD -7.30, 95%CI -12.68, -1.92).

B: Outcome: Improvement in depression

(Analysis 3.2).

One trial (26 participants) found no evidence of an improvement in depression between groups (RR 2.0, 95%CI 0.66, 6.08).

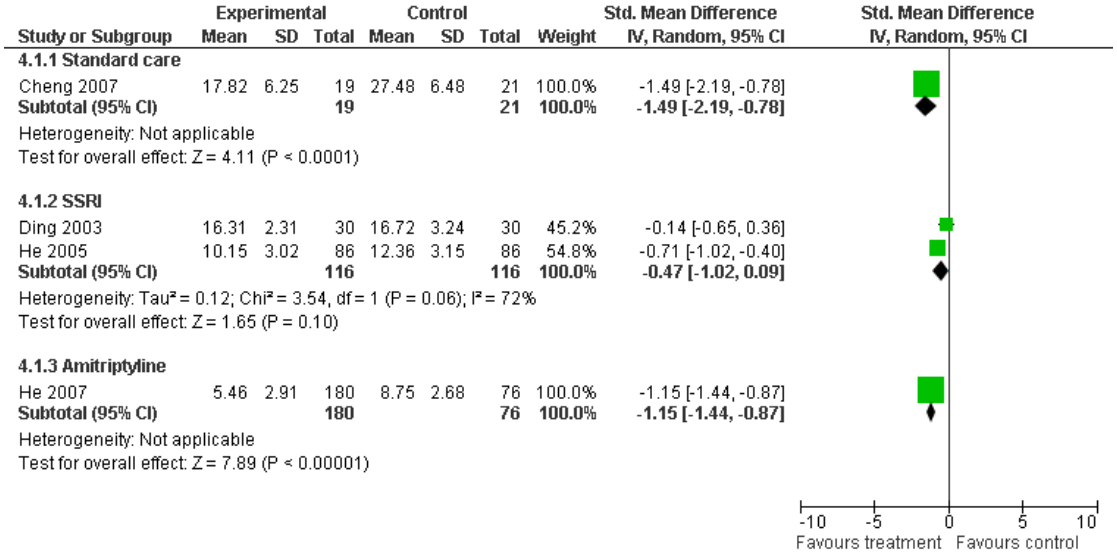
4) Manual acupuncture versus control for participants with depression as a co-morbidity.

Efficacy outcomes were available from five trials of acupuncture compared with medication. No other outcomes were reported. Medication was grouped by the same class of drug.

A) Outcome reduction in the severity of depression

(see Figure 7, Analysis 4.1).

Figure 7. Forest plot of comparison: 4 Manual acupuncture versus control for stroke patients, outcome: 4.1 Reduction in the severity of depression.



4.1.1 Standard care

One trial 40 participants found a reduction in the severity of depression for participants receiving manual acupuncture compared with standard care (SMD -1.49, 95%CI -1.49, -0.78).

4.1.2 SSRI

Two trials (232 participants) found a reduction in the severity of depression for participants receiving manual acupuncture compared with SSRIs (SMD -0.47, 95%CI -1.02, 0.09) (I^2=72%). There was statistical heterogeneity and clinical heterogeneity with the frequency of acupuncture sessions ranging from 30-48, and use of a standardised and semi-standardised treatment.

4.1.3 Amitriptyline

One trial (256 participants) found evidence of a reduction in the severity of acupuncture compared with amitriptyline (SMD -1.15, 95% CI -1.44, -0.87).

B) Outcome: Improvement in depression

(see Figure 8, Analysis 4.2)

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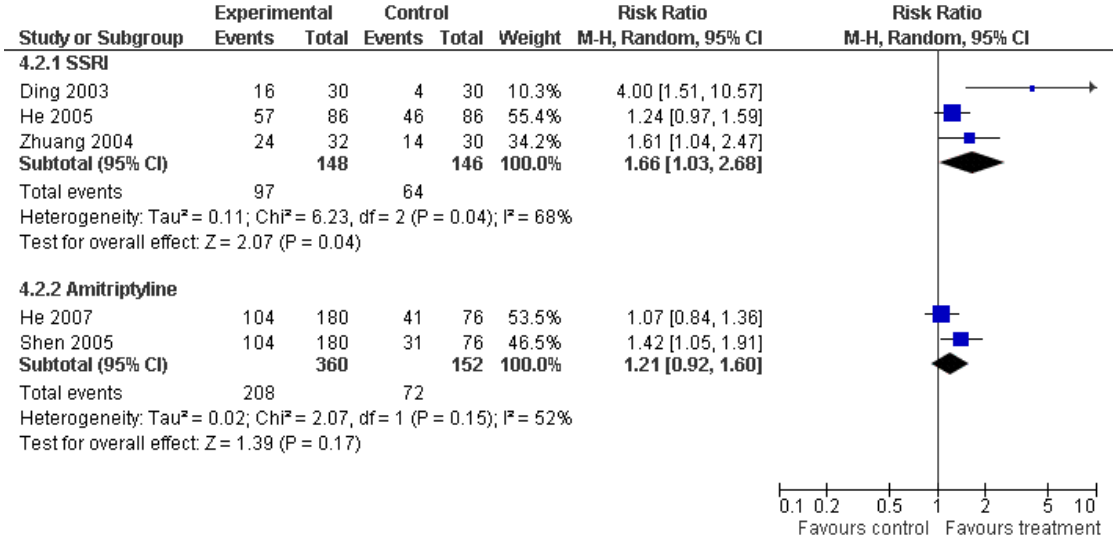
Figure 8. Forest plot of comparison: 4 Manual acupuncture versus control for stroke patients, outcome: 4.2 Improvement in depression.



4.2.1 SSRI

Three trials (294 participants) found evidence of an improvement in depression for the acupuncture group compared with the SSRI group (RR 1.66, 95%CI 1.03, 2.68).

4.2.2 Amitriptyline

Two trials (512 participants) found no evidence of an improvement in depression between electro-acupuncture and amitriptyline (RR 1.2, 95%CI 0.92, 1.60).

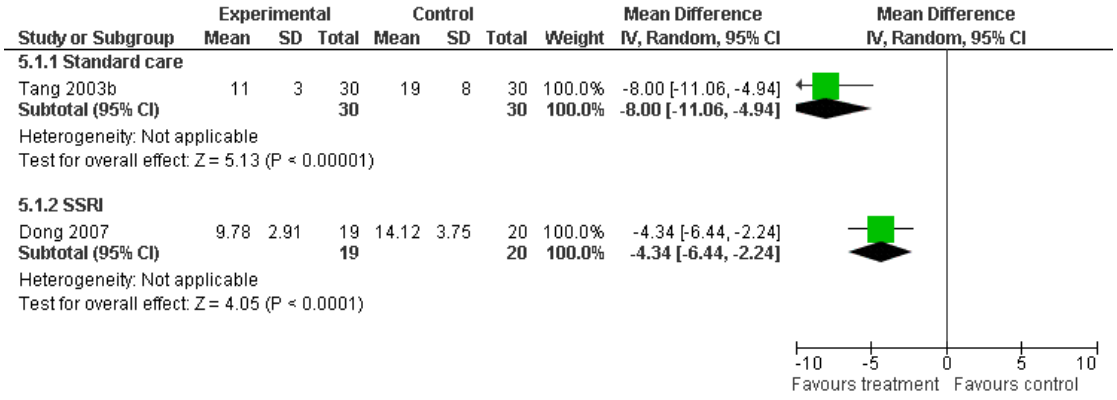
5) Electro-acupuncture versus control for participants with depression as a co-morbidity

Efficacy outcomes were available from two trials of electro-acupuncture compared with medication or standard care. One trial reported on quality of life outcomes.

A) Outcome: reduction in the severity of depression

(see Figure 9, Analysis 5.1)

Figure 9. Forest plot of comparison: 5 Electro-acupuncture versus control for stroke patients, outcome: 5.1 Reduction in the severity of depression.



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5.1.1 Standard care

One trial (60 participants) found evidence of a reduction in the severity of depression from electro-acupuncture compared with standard care (-8.00, 95% CI -11.06, -4.94).

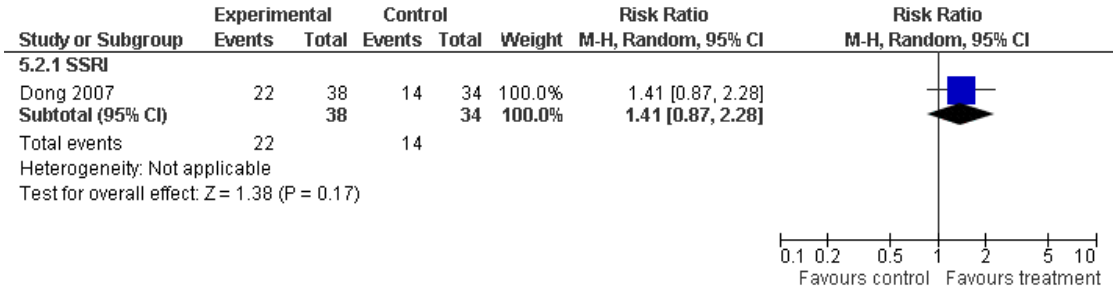
5.1.2 SSRI

One trial (39 participants) found evidence of a reduction in the severity of depression from electro-acupuncture compared with SSRI (SMD -4.34, 95% CI -6.44, -2.24).

B) Outcome: Improvement in depression

(see Figure 10, Analysis 5.2)

Figure 10. Forest plot of comparison: 5 Electro-acupuncture versus control for stroke patients, outcome: 5.2 Improvement in depression.



One trial 36 participants found no evidence of an improvement in depression between groups (RR 1.41, 95% CI 0.87, 2.28).

C) Outcome: quality of life

(Analysis 5.3)

One trial (60 participants) reported on the social domain for a quality of life assessment. There was no evidence of a difference between groups (MD 0.96, 95%-1.51, 3.43).

Comments on heterogeneity

Overall the acupuncture trials were clinically heterogenous. Electro acupuncture treatment duration ranged from three to six weeks, with treatment administered five to six days per week. Six trials stimulated local points only to treat depression, compared with three trials that used a combination of local points and additional points based on pattern differentiation (Duan 2008, Khang 2002, Zhang 2003). Manual acupuncture trials were equally diverse, treatment duration ranged from five to 12 weeks, and acupuncture was administered from twice a week to every day. In the comparison of manual acupuncture versus SSRI three of the acupuncture trials used standardised treatments, whilst one trial (Wenbin 2002) used a semi-standardised treatment. In this comparison the timing of the outcome measurement varied between two and four months and this may influence the effect size. Grouping of medication into class of drugs has reduced the heterogeneity of the trials involving comparison with medications. Sample size ranged from 17-460.

Sensitivity analysis

We proposed to undertake a sensitivity analyses on results to look at the possible contribution of: (1) differences in methodological quality on the robustness of the results, for example, excluding trials with unclear concealment of random allocation, or (2) excluding trials of drop out greater than 20%.These analyses were not performed because only six trials were at low risk due to adequate concealment (Allen 1998, Allen 2006, Fan 2005, Fu 2008, Quah Smith 2005, Whiting 2008) and little useful information would have been obtained. Only two trials reported drop out of greater

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than 20% (Allen 2006 and Whiting 2008) but were within a single or comparison of two trials and little additional information would have been obtained.

Subgroup analyses

The diversity in acupuncture practised within the trials included within this study obviated subgroup analysis by mode of stimulation category (i.e. manual acupuncture, and electro-acupuncture). Other subgroup analyses we planned (to explore the effects of treatment in people with different diagnoses (for example, major depression and dysthymia), and in people of different ages (<65 years and > 65 years)) were also not possible due to paucity of data.

DISCUSSION

Summary of main results

Thirty trials with 2,812 participants were included in the meta-analysis. There was wide diversity in the acupuncture interventions and comparator groups used in the evaluation of acupuncture to treat depression.

A number of single trials reported significant findings. In two small trials manual acupuncture reduced the severity of depression compared with a wait list control (WMD -0.73 95% CI -1.18, -0.29), however one of these trials had a high risk of bias. One trial of acupuncture compared with sham acupuncture found a reduction in depression (RR 3.67, 95%CI 1.36, 9.91). One small trial found a reduction in the severity of depression from laser acupuncture compared with sham laser but had a high risk of bias due to attrition. Two trials where acupuncture was used in combination with standard medication suggest some benefit with reducing symptoms of depression. One small trial of manual acupuncture plus sertraline, and/or venlafaxine/mirtazepine versus medication found a reduction in the severity of depression (SMD -1.06, 95%CI -1.69, -0.43). One small trial of electro-acupuncture plus SSRI compared with SSRI alone found a reduction in the severity of depression compared with medication alone (SMD -0.70, 95% -1.32, -0.07). The majority of trials comparing manual or electro acupuncture with medication found no evidence of a difference between groups with reducing symptoms of depression. Acupuncture appeared to perform as well as medication with reducing the severity of depression. Overall, given the small numbers of trials and participants studied there is currently insufficient evidence that acupuncture was more effective than sham acupuncture, or non specific acupuncture.

Participants with depression following a stroke were included as separate comparison within the review. Eight trials with 935 participants were included in the meta-analysis. There was evidence that acupuncture may benefit this sub clinical group of participants. Three trials (94 participants) found an improvement in depression for participants receiving manual acupuncture compared with SSRIs (RR 1.66, 95%CI 1.03, 2.68).

Although the comparisons between acupuncture and the control groups are not consistent in their findings, for those comparisons suggesting an effect from acupuncture, the potential for bias exists. Sources of bias have been highlighted throughout the review but the role of participants' expectations and their often unblinded status may also play a role.

The majority of included studies did not report on outcomes other than depression, and a small number of trials suggest there were no serious adverse events found in the review. Only a small number of trials were included for each per comparison. This limits the power of the review to detect meaningful differences between groups and analyses suggesting a benefit should be interpreted with caution.

Overall completeness and applicability of evidence

There are many styles of acupuncture, including individualised traditional Chinese medicine as illustrated by two trials (Allen 1998, Allen 2006), and those using standardised acupuncture points as used in the majority of trials in this review. The systematic review documented wide variation in the mode of stimulation, duration of needling, number of points used, depth of needling and duration of the trial. There was also diversity in the clinical settings from which participants were recruited, and the inclusion and exclusion criteria used. The majority of included trials were from China, with individual studies from Australia, Germany, United Kingdom, and United States. The trials from China largely recruited participants from an inpatient setting, whilst studies outside of China recruited participants from primary health care and community settings. It is unclear how representative the treatment protocols used in the research are generalisable to acupuncture as it is usually practiced. There was insufficient reporting of the rationale of the acupuncture used in the research setting. The variation may also reflect the context in which acupuncture is practiced. There is no evidence to suggest that manual, electro or laser acupuncture is more effective.

In a meta-analyses of clinical trials of anti-depressant medication in particular the new generation anti-depressants, treatment effects have been shown to be clinically significant only with extremely depressed patients (Kirsch 2008), and the pattern of treatment response has been attributed to a decrease in the response to placebo rather than an increase in the response to medication. A recent systematic review and meta-analysis confirmed that the placebo response in MDD is large regardless of the intervention (Brunoni 2009). Acupuncture has been described as a complex intervention and some of the components of the effect of treatment may also be associated with placebo effects.

It should also be noted that in the primary studies of comparisons between acupuncture and medication none of these studies

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reported the purpose of the research was to examine equivalence or non-inferiority, or superiority.

Quality of the evidence

The quality of the evidence has improved since the initial review was undertaken. However, the risk of bias table (Figure 1, Figure 2) demonstrates that, overall, acupuncture has not been subjected to consistently rigorous scientific study. The quality of reporting in general was poor with only a few authors detailing the method of randomisation, allocation concealment, and level of blinding. The chief investigators of most studies were contacted to provide additional methodological and statistical information; however, only a few responses were obtained.

No one trial was rated at a low risk of bias on all domains, and six (20%) trials were at a low risk of bias based on allocation concealment. Rates of follow up were high in the majority of trials, with only a small number of trials reporting a small loss of participants. For many studies the lack of blinding in relation to outcome assessment, or inadequate blinding of participants may have introduced a source of bias. Only four trials (13%) were at low risk of bias on this domain (this domain is problematic for acupuncture trials). A source of bias may also have arisen from the use of the poorly defined criteria for the outcome "improvement in depression".

The quality of evidence was affected by unexplained heterogeneity in some comparisons arising from the both the heterogeneity of the clinical interventions and study designs. The small number of studies within comparisons, and lack of high quality trials prevented further investigation of the heterogeneity and the impact on treatment effects. Overall, trials reported on one or two clinical outcomes only, and data on adverse effects, acceptability of the intervention and quality of life measures were scarce. The majority of studies were inadequately reported and the extent of bias was unknown. Design and reporting of trials should meet the contemporary standards of the CONSORT statement (Boutron 2008) and the STRICTA recommendations (MacPherson 2001). For comparisons showing a benefit from acupuncture the effect size was precise due to the narrow confidence intervals.

Potential biases in the review process

We attempted to minimise publication bias, although our search was comprehensive and we included studies identified in languages other than English, we cannot rule out the possibility that some studies have been missed. We are also aware that publication bias is a possibility, since this review did not include trials from China showing a negative treatment effect.

The variation in the duration, frequency, selection of acupuncture points suggests that the acupuncture may not have been therapeutically effective. For those trials involving comparisons with medication, no data was reported on compliance, therefore it is unclear if these study groups could have been affected by sub-optimal doses of medication.

Agreements and disagreements with other studies or reviews

There are three other systematic reviews of acupuncture to treat depression (Wang 2008, Leo 2007 and Mukaino 2005). Our review identified and included a greater number of trials compared with the other three which included between seven and nine trials. Our findings are similar to the (Mukaino 2005) review with respect to comparisons of acupuncture to sham and a wait list control. Our findings cover a broader range of comparisons than those of the more recent reviews (Wang 2008 and Leo 2007) which combined all modes of acupuncture stimulation in their meta-analysis and excluded comparisons with medication.

AUTHORS' CONCLUSIONS

Implications for practice

It is premature to draw any conclusions for practice. There are insufficient data to demonstrate whether acupuncture is more effective than non-specific or sham acupuncture control, a wait list control, or whether there is a additive benefit from acupuncture when used in combination with standard medication. However, the risk of bias was high in the majority of trials and recommendations for practice cannot be made until further high quality research has been undertaken.

Implications for research

Further randomised controlled trials are required to evaluate the effectiveness of acupuncture in the treatment of depression. All future randomised trials must be adequately powered and should consider other outcome measures as described in this review, in addition to clinical outcomes. Greater attention should be given to methodological design including randomisation, blinding of practitioners (where appropriate), outcome assessors and analysts. Attention needs to be given to the design of the treatment rationale, and the context of the treatment used in a research setting. There is also a need to improve the quality of reporting of future trials.

Future studies may need to consider the use of comparative designs using medication or structured psychotherapies (cognitive behavioural therapy, psychotherapy, counselling) or standard care, due to the ethics of administering this intervention to this study population. Future studies should also give consideration to including long-term evaluation of effectiveness and adverse effects of acupuncture.

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REFERENCES

References to studies included in this review

Allen 1998 *{published data only}*

* Allen JB, Schyner RN, Hitt SK. The efficacy of acupuncture in the treatment of major depression in women. *Psychological Science* 1998;**9**(5):397–401.

Allen 2006 *{published data only}*

Allen JJ, Schyner RN, Chambers AS, Hitt SK. Acupuncture for depression: a randomised controlled trial. *Journal of Clinical Psychiatry* 2006;**67**(11):1665–1673.

Cheng 2007 *{published data only}*

Cheng Y, Tang QS. Abdominal acupuncture in treating liver-qi stagnation and spleen deficiency in the elderly with post-stroke depression: A randomized and controlled observation. *Chinese Journal of Clinical Rehabilitation Tissue Engineering Research* 2007; **11**(39):7791–4.

Ding 2003 *{published data only}*

Ding Z, Yu X-G. Clinical study on treatment of post-stroke depression with acupuncture of Du meridian as main therapy. *Journal of Beijing University of TCM (Clinical Medicine)* 2003;**10** (3):31–33.

Dong 2007 *{published data only}*

Dong JP, Sun WY, Wang S, et al.Clinical observation on head point-through-point electroacupuncture for treatment of post stroke depression. *Chinese Acupuncture and Moxibustion* 2007;**27** (4):241–4.

Duan 2008 *{published data only}*

Duan M, Tu Y, Chen LP. Assessment of effectiveness of electroacupuncture and fluoxetine for treatment of depression with physical symptoms. *Chinese Acupuncture and Moxibustion* 2008;**28** (3):167–70.

Eich 2000 *{published data only}*

Eich H, Agelink MW, Lehman E, Lemmer W, Kliesser E. Acupuncture in patients with minor depression or generalized anxiety disorders- results of a randomized study. *Fortschritte Der Neurologie Psychiatrie* 2000;**68**:137–44.

Fan 2005 *{published data only}*

Fan L, Fu WB, Meng CR, Zhu XP, Mi JP, Li WX, Wen X. Effect of acupuncture at routine acupoint and no-acupoint on depressive neurosis evaluated by Hamilton depression scale. *Chinese Journal of Clinical Rehabilitation* 2005;**9**(28):14–16.

Fu 2008 *{published data only}*

Fu WB, Fan L, Zhu XP, et al.Acupuncture for treatment of depressive neurosis: a multi-centred randomized controlled trial. *Chinese Acupuncture and Moxibustion* 2008;**28**(1):3–6.

Han 2002 *{published data only}*

* Han C, Li XW, Luo HC. Comparative study of electro-acupuncture and maprotiline in treating depression. *Combined Chinese/Western Journal* 2002;**22**(7):512–4.

He 2005 *{published data only}*

He XJ, Tan JL, Wang BH, et al.Effects of acupuncture using Xingnao Kaiqiao (consciousness restoring resuscitation) needling method on acupuncture with post stroke depression. *Chinese Journal of Rehabilitation, Theory and Practice* 2005;**11**(6):467–68.

He 2007 *{published data only}*

He J, Shen PF. Clinical study on the therapeutic effect of acupuncture in the treatment of post-stroke depression. *Acupuncture Research* 2007;**32**:58–61.

Khang 2002 *{published data only}*

Kang B, Zhang PG, Xiong SC, et al.Control observation on Electroacupuncture and Amitriptyline for Treatment of Depression. *Chinese Acupuncture and Moxibustion* 2002;**22**(6):383–4.

Li 2004 *{published data only}*

Li GP, Du YH, Yan H, Zhang XiJ, Huang LF. Clinical effect of Tiaoshen Shugan acupuncture on Depression (Clinical observation on regulating mental activity and soothing liver (tiao shen su gan) needling method for treatment of depression). *Tianjin Journal of Traditional Chinese Medicine* 2004;**21**(4):382–385.

Li 2007 *{published data only}*

Li SJ, Liu T. Clinical observation on treatment of melancholia by acupuncture following principle of relieving depression and regulating mentality. *Chinese Journal of Integrated Traditional and Western Medicine* 2007;**27**:155–57.

Luo 1985 *{published data only}*

Luo HC, Yunkui J, Zhan L. Electro-acupuncture versus amitriptyline in the treatment of depressive states. *Journal of Traditional Chinese Medicine* 1985;**5**(1):3–8.

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Luo 1988 *{published data only}*

* Luo HC, Shen YC, Jia YK, Zhou D. Clinical study of electro-acupuncture on 133 patients with depression in comparison with tricyclic amitriptyline. *Chinese Journal of Modern Developments in Traditional Medicine* 1988;**8**(2):77–80.

Luo 1998 *{published data only}*

Luo H, Meng F, Jia Y, Zhao X. Clinical research on the therapeutic effect of the electro-acupuncture treatment in patients with depression. *Psychiatry and Clinical Neurosciences* 1998;**52**:338–40.

Quah Smith 2005 *{published data only}*

Quah-Smith JI, Tang WM, Russell J. Laser acupuncture for mild to moderate depression in a primary care setting. *Acupuncture in Medicine* 2005;**23**(3):103–111.

Roschke 2000 *{published data only}*

* Roschke J, Wolf C, Muller MJ, Wagner P, Mann K, Grozinger M, et al.The benefit from whole body acupuncture in major depression. *Journal of Affective Disorders* 2000;**57**:73–81.

Shen 2005 *{published data only}*

Shen PF, K L, Shi XM. Study on clinical therapeutic effect of activating brain and regaining consciousness needling method on post-stroke depressing and the mechanism. *Chinese Acupuncture and Moxibustion* 2005;**25**:11–13.

Tang 2003b *{published data only}*

Tang JX, Guan NH, Li L, Liu JF. Influence of electroacupuncture on the quality of life in patients with post apoplectic depression. *Shanghai J Acu-mox* 2003;**22**:12–14.

Wang 2006 *{published data only}*

Wang J. Clinical observation on Governor Vessel Daoqi method for treatment of Dyssomnia in the patient of Depression. *Chinese Acupuncture and Moxibustion* 2006;**26**:328–30.

Wenbin 2002 *{published data only}*

Wenbin F. Clinical Research on acupuncture treatment of depressive psychosis. *World Journal of Acupuncture-Moxibustion* 2002;**12**(3):13–16.

Whiting 2008 *{published data only}*

Whiting M, Leavey G, Scammell A, Au S, King M. Using acupuncture to treat depression: a feasibility study. *Complementary Therapies in Medicine* 2008;**16**:87–91.

Xiujuan 1994 *{published data only}*

* Xiujuan Y. Clinical observation on needling extrachannel points in treating mental depression. *Journal of Traditional Chinese Medicine* 1994;**14**(1):14–8.

Yan 2004 *{published data only}*

Yan M, Mao X, Wu JL. Comparison of electroacupuncture and amitriptyline in treating depression. *Chinese Journal of Clinical Rehabilitation* 2004;**18**:3548–9.

Zhang 2003 *{published data only}*

Zhang H, He J. Clinical observation of electro-acupuncture in treating depression. *Journal of Acupuncture and Tuina Science* 2003; **1**(4):24–26.

Zhang 2007 *{published data only}*

* Zhang GJ, Shi ZY, Liu S, Gong SH, Liu JQ. Clinical observation of treatment of depression by electro-acupuncture combined with paroxetine Clinical observations. *Journal Clin J Integ Med* 2007;**13** (3):228–30.

Zhuang 2004 *{published data only}*

Zhuang ZQ, Wang CR. Treatment of poststroke depression by Zhisanzhen combined with digital point pressure and massage. *Chinese Acupuncture and Moxibustion* 2004;**24**:800–2.

References to studies excluded from this review

Agelink 2003 *{published data only}*

* Agelink MW, Sanner D, Elch H, Pach J, Bertling R, Lemmer W, et al.Does acupuncture influence cardiac autonomic nervous system in patients with minor depression or anxiety disorders. *Fortschritte der Neurologie und Psychiatrie* 2003;**71**:141–9.

Chang-du 1994 *{published data only}*

* Chang-du L, Yong H, Ying-kun L, Ka-ming H, Zhen-ya J. Treating post stroke depression with "mind refreshing antidepressive": acupuncture therapy: a clinical study of 21 cases. *International Journal of Clinical Acupuncture* 1994;**5**(4):389–93.

Gallagher 2002 *{published data only}*

Gallagher SM, Allen JJB, Hitt SK, Schyner RN, Manber R. Six month depression relapse rates among women treated with acupuncture. *Complementary Therapies in Medicine* 2002;**9**: 216–218.

He 2007b *{published data only}*

He Q, Zhang J, Tang Y. A controlled study on treatment of mental depression by acupuncture plus TCM medication. *Journal of Traditional Chinese Medicine* 2007;**27**(3):166–69.

Huang 2004 *{published data only}*

Huang DH, Wang CY, Huang JH, Ye Y, Chen XH. Point injection therapy combining baihui acupuncture with parental solution of breviscapine for post cerebral infarction depression. *Chinese Journal of Chinese Rehabilitation* 2004;**28**(8):6132–3.

Huang 2005 *{published data only}*

Huang Y, Jing C, Jun Z. Effect of scalp acupuncture on post stroke depression. *Chinese Journal of Clinical Rehabilitation* 2005;**9**(40): 172–173.

Lu 2004 *{published data only}*

Lu M, Wang LL, Lui LY, Maho L. Clinical research on treatment of depression with electroacupuncture and SSRI. *Journal of Nanjing University of Traditional Chinese Medicine* 2004;**20**:149–51.

Song 1999 *{published data only}*

Song Y, Liang HR. Observation of the curative effect of scalp acupuncture on cerebral postapoplectic depression. *Shanghai Journal of Acupuncture-moxibustion* 1999;**18**(1):8–9.

Wang 2004 *{published data only}*

Wang Y, Zhao ZF, Wu Y. Clinical therapeutic effect of acupuncture on post stroke depression with insomnia. *Chinese Acupuncture and Moxibustion* 2004;**24**(9):603–6.

Wang 2005 *{published data only}*

Wang TJ. Clinical observation on acupuncture for treatment of depression. *Chinese acupuncture and moxibustion* 2005;**25**: 107–110.

Zhou 2007 *{published data only}*

Zhou SH. Acupuncture in the treatment of female climacteric depression in 60 cases. *Journal of Clinical rehabilitation Tissue Engineering Research* 2007;**11**(39):7817–7819.

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References to studies awaiting assessment

Tang 2003 *{published data only}*

Tang S, Xu Z, Tang P, et al.Clinical study on acupuncture of depressive neurosis. *Chinese Acupuncture and Moxibustion* 2003;**23**: 585–86.

Additional references

APA 1994

American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th Edition. Washington, DC: American Psychiatric Association, 1994.

Beck 1961

Beck AT, Ward CH, Medelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Archives of General Psychiatry* 1961;**4**:561–71.

Boutron 2008

Boutron I, Moher D, Altman DG, Schulz KF, Ravaud P, CONSORT Group. Explaining the consort statement to randomized controlled trials of non pharmacological treatments, explanations and elaborations. *Annals of Internal Medicine* 2008; **148**(4):295–309.

Brunoni 2009

Brunoni AR, Lopes M, Kaptchuk TJ, Freni F. Placebo response of non-pharmacological and pharmacological trials in major depression: a systematic review and meta-analysis. *PLoS One* 2009; **4**(3):e4824.

Chinese Psychiatric Society 2001

Chinese Psychiatric Society. The Chinese classification of mental disorders (3rd ed. [CCMD-3]).. *The Chinese classification of mental disorders [CCMD-3]*. 3rd Edition. Shandong: Shandong Publishing House of Science and Technology, 2001.

Goldman 1999

Goldman LS, Nielsen NH, Champion HC. Awareness, diagnosis and treatment of depression. *Journal of General Internal Medicine* 1999;**14**(9):569–89.

Hamilton 1960

Hamilton M. A rating scale for depression. *Journal of Neurosurgery & Psychiatry* 1960;**23**:56–62.

Hays 1995

Hays RD, Wells KB, Sherbourne CD, Rogers W, Spritzer K. Functioning and well-being outcomes of patients with depression compared with chronic general medical illnesses. *Archives of General Psychiatry* 1995;**52**:11–9.

Higgins 2008

Higgins JPT, Green S (editors). *Cochrane Handbook for Systematic Reviews in Interventions 5.0.0*. Cochrane Collaboration, February 2008.

Jorm 1997

Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P. Mental health literacy: a survey of the public's ability to recognise mental disorders and their belief about the effectiveness of treatment. *Medical Journal of Australia* 1997;**166**:182–86.

Jorm 2000

Jorm AF, Medway J, Christensen H, Korten AE, Jacomb PA, Rodgers B. Public beliefs about the helpfulness of interventions for depression: effects on actions taken when experiencing anxiety and depression symptoms. *Australia and New Zealand Journal of Psychiatry* 2000;**34**:619–26.

Kessler 2000

Kessler RC, Soukup J, Davis RB. The use of complementary and alternative therapies to treat anxiety and depression in the Unites States. *American Journal of Psychiatry* 2000;**158**:289–94.

Kessler 2003

Kessler RC, Berglund P, Demler O, Jin R, Koretz D, et al.The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). *JAMA* 2003; **289**:3095–105.

Kessler 2007

Kessler RC, Merikangas KR, Wang PS. Prevalence, comorbidity and service utilisation for mood disorders in the United States at the Beginning of the twenty first century. *Annual Review of Clinical Psychology* 2007;**3**:137–58.

Kirsch 2008

Kirsch I, Deacon BJ, Huedo-Medina TB, Scoboria A, Moore TJ, Johnson BT. Initial severity and anti-depressant benefits: a meta-analysis of data submitted to the Food and Drug Administration. *PLoS Medicine* 2008;**5**(2):260–67.

Leo 2007

Leo RJ, Ligot JS Jr. A systematic review of randomized controlled trials of acupuncture in the treatment of depression. *J Affect Disord* 2007;**97**:13–22.

MacPherson 2001

MacPherson H, White A, Cummings M, Jobst K, Rose K, Niemtzow R. Standards for reporting interventions in controlled trials of acupuncture: the STRICTA group. *Complementary Therapies in Medicine* 2001;**9**(4):246–9.

MacPherson 2004

MacPherson H, Scullion A, Thomas KJ, et al.Patient reports of adverse events associated with acupuncture treatment: a prospective national survey. *Quality and Safety in Health Care* 2004;**13**: 349–355.

Mukaino 2005

Mukaino Y, Park J, White A, Ernst E. The effectiveness of acupuncture for depression: a systematic review of randomised controlled trials. *Acupunct Med* 2005;**23**(2):70–6.

Murray 1996

Murray CJ, Lopez AD. *The global burden of disease*. Geneva: World Health Organisation and Harvard University Press, 1996.

Napadow 2005

Napadow V, Makris N, Liu J, et al.Effects of electroacupuncture versus manual acupuncture on the human brain as measured by MRI. *Human Brain Mapping* 2005;**24**:193–205.

Park 2002

Park J, White A, Stevinson C, et al.Validating a new non-penetrating sham acupuncture device: two randomised controlled trials. *Acupuncture in Medicine* 2002;**20**(4):168–174.

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Revman 2005
The Nordic Cochrane Centre, The Cochrane Collaboration. Review Manager (RevMan) Version 5.0. Cophenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration, 2005.

Spitzer 1977
Spitzer RL, Endicott J, Robins E. *Research Diagnostic Criteria (RDC) for a selected group of functional disorders*. 3rd Edition. New York, NY: Biometric Research, 1977.

Spitzer 1995
Spitzer RL, Kroenke K, Linzer M, Hahn SR, Williams JB, deGruy FV 3rd, et al.Health-related quality of life in primary care patients with mental disorders. Results from the PRIME-MD 1000 Study. *JAMA* 1995;**274**:1511–7.

Streitberger 1998
Streitberger K, Kleinhenz J. Introducing a placebo needle into acupuncture research. *Lancet* 1998;**352**:364–365.

Thomas 2003
Thomas C, Morris S. Cost of depression among adults in England in 2000. *British Journal of Psychiatry* 2003;**183**:154–9.

Vincent 2001
Vincent C. The safety of acupuncture. *BMJ* 2001;**323**:4467–8.

Wang 2008
Wang H, Qi H, Wang BS, Cui YY, Zhu L, Rong ZX, Chen HZ. Is acupuncture beneficial in depression: a meta analysis of 8 randomized controlled trials. *J Affect Disord* 2008;**111**(2-3): 125–34.

Ware 1994
Ware JE, Kosinski M, Keller SD. *SF36 physical and mental health summary scales: a users manual*. Boston, MA: Health Institute, New England Medical Centre, 1994.

Wells 1989
Wells KB, Stewart A, Hays RD, Burnam MA, Rogers W, Daniels M, et al.The functioning and well being of depressed patients: results from the Medical Outcomes Study. *JAMA* 1989;**262**:914–9.

White 2001
White A, Hayhoe S, Hart A, et al.Survey of adverse events following acupuncture (SAFA): a prospective study of 32,000 consultations. *Acupuncture in Medicine* 2001;**19**:84–92.

White 2004
White A. A cumulative review of the range and incidence of significant adverse events associated with acupuncture. *Acupuncture in Medicine* 2004;**22**(3):122–133.

WHO 1993
World Health Organisation. *The ICD-10 Classification of mental and Behavioural Disorders. Diagnostic Criteria for Research*. Geneva: World Health Organisation, 1993.

* *Indicates the major publication for the study*

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CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Allen 1998

Methods	Single blind randomised controlled trial of acupuncture, non specific acupuncture and a wait list control.
Participants	Thirty eight women aged 18 to 45 were recruited in the United States. Inclusion criteria were major depression as described by DSM IV. Exclusion criteria: dysthymia or chronic depression, history of psychosis or mania, substance abuse, current treatment, endocrine abnormalities, history of central nervous system lesions or any medical condition causing depression, pregnancy, suicide potential.
Interventions	Women were randomly allocated to acupuncture, non specific acupuncture and a wait list control for eight weeks.The wait list control received acupuncture at eight weeks. The eight week intervention involved two sessions a week for the first four weeks, followed by one session a week thereafter.
Outcomes	Participants completed the Hamilton Rating Scale for Depression (HRSD), and Beck Depression Inventory at baseline, 8 and 16 weeks.
Notes	A power calculation was not reported.

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	Randomisation was computer generated.
Allocation concealment?	Yes	Randomisation was undertaken centrally
Blinding? All outcomes	No	The participants in the two acupuncture groups, therapist and outcome assessor were blind. It remains possible that the acupuncture therapists developed some awareness between the treatments). It was unclear if the analyst was blind.
Incomplete outcome data addressed? All outcomes	Yes	Five women dropped out (13%), 2 from acupuncture group, 2 non specific acupuncture and one in wait list control
Free of selective reporting?	Yes	Study protocol unavailable but published report includes all expected outcomes.
Free of other bias?	Unclear	Insufficient information presented to examine other sources of bias for example im-

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		balance at randomisation.

Allen 2006

Methods	Single blind randomised controlled trial of acupuncture, non specific acupuncture and a wait list control.
Participants	157 participants from the United States were recruited to the trial from the community. Participants were male and female aged 18-65 years, meeting the DSM-IV criteria for major depressive disorder (MDD), and had a score of greater than 14 on the Hamilton Rating Scale for Depression. Exclusion criteria included: dysthymia or a chronic MDD over greater than 2 years, seasonal pattern, current axis 1 diagnosis besides MDD or axis II cluster B disorder, history of psychosis or mania, substance abuse or dependence within last 4 months, current relevant treatment, endocrine abnormalities, history of CNS involvement (seizures), medical condition believed to cause depression, active suicidal risk, pregnancy.
Interventions	Participants were randomised to three groups. The acupuncture group received individualised TCM treatment. Point selection used unilateral and bilateral points, 10-16 needles were used, the depth of needle insertion was based according to TCM principles, de qi sensation was obtained, needles were retained for 20 minutes. Treatment was administered twice a week for 4 weeks, followed by once per week for 4 weeks. No co-interventions were allowed. The acupuncture practitioners were NCCAOM board certified acupuncturists with a minimum of 4 years and in practice for 5 years. The control group consisted of an active comparator involving non specific acupuncture. Valid acupuncture points were used but not designed to treat depression. Points needled as above. Secondly, a wait list control was used.
Outcomes	All patients completed the Becks Depression Inventory at weekly intervals. Blinded outcome assessors used the Hamilton Rating scale at four weekly intervals.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	Method of generating randomisation schedule was not reported.
Allocation concealment?	Yes	The schedule was devised by the first author, and was only made available on completion of the assessments
Blinding? All outcomes	Yes	The participants and outcome assessors were blind to study group. The treating acupuncturists were blind to the study hypothesis. The nonspecific intervention in-

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		volved valid acupuncture points, and therapists administering acupuncture in this group would perceive they were providing a valid treatment. Therapists expectations was assessed, the blinding strategy suggests the acupuncturists may have developed some awareness, but there was no evidence this influenced the clinical outcome.
Incomplete outcome data addressed? All outcomes	No	Six participants (3.8%) were post randomisation exclusions. Valid intention to treat sample acupuncture=50, non specific acupuncture n=49, wait list control n=52. Twenty (13%) participants terminated treatment before completion of the intervention, but not differently between groups. A further 42 (28%) participants terminated treatment prior to 16 weeks.
Free of selective reporting?	Yes	Study protocol unavailable but published report includes all expected outcomes.
Free of other bias?	Yes	No imbalances at randomisation. The study appears free of other sources of bias.

Cheng 2007

Methods	Randomised controlled trial of abdominal acupuncture compared with electro-acupuncture and standard care.
Participants	Sixty participants who were inpatients at the Department of Neurology at the First Hospital Affiliated to Changchun China were recruited to the trial. Participants were aged 60-85 years, with a cerebral infarction or cerebral haemorrhage. Depression was diagnosed using the CCMD and DSM II. Other inclusion criteria were; no history of depression, or abuse of medication, or alcohol and no known allergies to medications, no severe heart, lung, liver or kidney disease, and no loss of speech. Exclusion criteria included; history of mental disorders, in the last 2 weeks have been taking antidepressants, severe depression HAMD >35, allergic to alcohol or medications, cardiovascular, cerebral, liver, kidney or blood pathology conditions, patients who do no meet the inclusion criteria or not taking the medication as advised or dropped out half way, fainting during acupuncture, or infection of acupuncture points.
Interventions	The treatment group received abdominal acupuncture, with stimulation to acupuncture points CV12 Zhong Wan, CV10 Xia Wan, CV6 Qi Hai, CV4 Guan Yuan, ST24 Hua Rou Men (on both sides), ST26 Wai Ling, and Tai Heng. Acupuncture needles were inserted perpendicular, and to a depth before the muscle layer. Needles were inserted quickly, only twirling no lifting, de qi sensation was not obtained. Needles were left in for 30 minutes, treatment was given every second day, a total of 21 treatments over 6

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	weeks. Needles used were of the Hwato brand, manufactured in Suzhouby Tai xin san li medical product company, H model, 0.35mmx40mm, 0.30x25mm, 0.30mm x 50mm. The second group received electro acupuncture to points DU 20 Baihui, DU24 Shen Ting, M-HN-3 Yintang, M-NH-1 Shishenchong, LIV 3 Taichong, and HT 7 Shenmen. Baihui was needled 1 cun parallel to the skin, Shenting needled 0.5cum parallel to the skin, Yintang needled 0.5 cun parallel to the skin, Shishenchong needled parallel to the skin, Taichong perpendicular 0.5 to 1 cun, Shenmen was needled perpendicular 0.5 cum. The electro acupuncture machine was connect to needles administered using a frequent pulse frequency at 4 Hz and intermittent pulse at 20Hz. Positive pulse amplitude at 50V and negative pulse amplitude at 35V. During treatment patients should feel an achy, numbness, a sensation of fullness or twitching of muscle. Needles were left in for 30 minutes, treatment was given every second day, for 21 minutes over six weeks. Electro machine model GD6805X, manufactured by Xia xi san yuan medical equipment company was used. The control was standard care for stroke rehabilitation.
Outcomes	The Hamilton Rating Scale for Depression was used to evaluate outcomes at 2, 4 and six weeks after the start of the study.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details were provided on randomisation.
Allocation concealment?	Unclear	No information could be obtain from the author.
Blinding? All outcomes	No	The participant and therapist were not blind, it was unclear if the analysts and outcome assessor were blind to group allocation.
Incomplete outcome data addressed? All outcomes	Yes	There were no losses to follow up. Data was analysed on all participants.
Free of selective reporting?	Yes	No protocol published. All scales were reported on in the paper and included additional scales measuring social disability.
Free of other bias?	Yes	There was no imbalance in randomisation at baseline between groups. The study appears free of other study biases.

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Ding 2003

Methods	Acupuncture versus standard medication (fluoxetine).
Participants	Sixty two participants diagnosed with post stroke depression were recruited from the Beijing Hospital of Integration of Chinese and Western Medicine. Participants were diagnosed using the DSM-II-R and HAMD scale. No exclusion criteria were specified.
Interventions	Acupuncture points on the Du meridian were needles including: DU 20 Baihui, DU 24 Shenting, DU 16 Feng fu. Additional points were used including : PC6 Neiguan(both sides), LI4 Hegu(both sides), GB20 Feng chi (both sides). Needles of 30 gauge needles, 1-1.5 cun long were used, and needled to a depth of 0.5-1 cun. Needles were manipulation using reinforcing reducing method. Once de qi was obtained needles were left in for 30 minutes. Four courses of treatment were given, with one course consisting of acupuncture for 10 days. A 2-3 days break was made between courses. The control group received medication including fluoxetine 20mg/d. for 60 days.
Outcomes	HAMD score sheets were filled in by observers before treatment, 30 days into treatment and 60 days into treatment. Two participants dropped out due to adverse effects.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Yes	The randomisation schedule was computer generated.
Allocation concealment?	Unclear	No information could be obtain from the author.
Blinding? All outcomes	No	The study participant and therapist were not blind and it was unclear if the outcome assessor, and analyst were blind to the study group.
Incomplete outcome data addressed? All outcomes	Yes	Two participants (one from each group) were excluded post randomisation with no details reported. Data was available on primary outcome for 60 participants
Free of selective reporting?	Yes	The study protocol was unavailable, but it appears the main relevant outcomes are reported.
Free of other bias?	Unclear	It was unclear if baseline characteristics were comparable.

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Dong 2007

Methods	Three arm randomised controlled trial of electro acupuncture versus acupuncture versus medication (fluoxetine), among participants with post stroke depression.
Participants	108 participants diagnosed with post stroke depression were recruited as either inpatients or day patients from the Heilongjiang Provincial Academy of TCM Hospitial, China. Participants were diagnosed with depression according to the DSM IV, CCMD-3 and a HAMD score of >20. Exclusion criteria included a severe health condition, pregnant or breast feeding, long term medicated, in the last 2 weeks have taken plasma 5 HT and SSRI type medications together, not willing or not suitable to be participants in this clinical trial, severely suicidal or behaviour that are not suitable to be medicated, and organic mental disorder, depression caused by psychoactive substances or non addictive medications.
Interventions	1. Electro acupuncture. Points stimulated included GB5 Xuan Lu, DU17 Nao Hu, GV18 Qiang Jian, GB15 Tou lin qi, GB14 Yang Bai, GB 8 Shuai Gu, GB 7 Qu Bin, GV24 Shen Ting, M-HN-3 Yin Tang. Each acupuncture needle was inserted to a depth of 40-50mm, stimulation used a fast but small angled twirling manipulation method, 200 twirls per minute, with each needle manipulated for one minute. Needles were then connected to electro acupuncture device, model G6805-I. A continuous pulse was used, with frequency set at 120-250 pulse per minute. The intensity was set to a level tolerable to the patient. Stimulation was given over 30 minutes, with needles retained for one hour. Treatment was given once a day, with three courses of 10 treatments per course. 2. Manual acupuncture of Non point-through-point (NON). Acupuncture was administered to points GV20 Baihui, M-HN-3 Yintang, M-HN-1 Shishencong, PC6 Neiguan, HT7 Shenmen, SP6 Sanyinjiao, LI4 Hegu and LIV3 Taichong. Needles were inserted and de qi obtained, needles were manipulated using either lifting twirling reinforcing-dispersing method or reinforcing-dispersing manipulation methods. Needles were retained for one hour, treatment was given once a day, with three courses of 10 treatments per course. Hwato acupuncture needles, manufactured by Suzhou medical product company, with dimensions 0.38mmx40mm-40mm were used. 3. The medication group received fluoxetine. Participants were given initially a 20mg/day dose, after 2 weeks with no severe side effects observed the dose was increase to 80mg/day.
Outcomes	Hamilton Rating Scale for Depression was used at 4 weeks..
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Unclear	No details on randomisation were reported.
Allocation concealment?	Unclear	No communication was received from authors in response to a letter requesting further details on the study methodology.

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Dong 2007 (*Continued*)

Blinding? All outcomes	No	Participants and therapists were not blind to their group allocation. No details were reported on the blinding status of the assessors and analyst.
Incomplete outcome data addressed? All outcomes	Unclear	Exclusions and loss of data are not explained. Data on one primary outcome is complete. Data on secondary outcomes incomplete
Free of selective reporting?	Yes	Protocol unavailable but appears complete with reporting of secondary outcomes including plasma 5-HT.
Free of other bias?	Yes	Groups were comparable at baseline. The study appears free of other sources of bias

Duan 2008

Methods	Randomised controlled trial of electro acupuncture, medication (fluoxetine) and electro acupuncture plus medication.
Participants	Seventy five participants who were either inpatient or day patients were recruited from the Department of Neurology, PLA General Hospital, Beijing, China. Participants were diagnosed using the CCMD-3. Inclusion criteria included aged 18-60 years, aged 18-60 years, a HAMD score in the range of 20-35, history of severe neurological or physical disease, no history of mental illness and willing to participate in this study. Exclusion criteria included suffering from schizophrenia and other mental disorders; central nervous system organic disease; pregnant women, lactating women or planning to fall pregnant during treatment, severe depression with a HAMD score of 35, suicidal individuals, and any know allergies to fluoxetine.
Interventions	The treatment group consisted of electro acupuncture plus medication. Acupuncture points Baihui DU 20, M-HN-3 Yintang were stimulated. Additional points were added based on a differential patterns: Liver qi stagnation type add LIV3 Taichong, LI4 Hegu; Fire due to qi stagnation type add LIV2 Xing jian; Melancholy injuring the spirit type add Anmian, Shenmen HT7, Neiguan PC6; heart and spleen deficiency add SP6 Sanyinjiao, Zhusanl ST36; Yin deficiency with excess fire type add KD3 Taixi and KD6 Zhaohai. GV20 Baihu and DU24 Shen ting were connect to electro acupuncture machine model G 6805-1, using continuous pulse, frequency set at 120-250 times per minute. Strength was set at a comfort level for the patients. Electro acupuncture was administered over 30 minutes and needles were retained for one hour. Treatment was given once per day, six days a week, over six weeks. Medication consisted of fluoxetine 20mg per day, administered over six weeks. Group 2 was administered electro acupuncture only, and group 3 medication only as previously described.

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Duan 2008 (*Continued*)

Outcomes	The Hamilton Rating Scale for Depression was used to measure outcomes on depression and side effects at six weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	The randomisation sequence was computer generated.
Allocation concealment?	Unclear	The allocation concealment was unclear.
Blinding? All outcomes	No	The participants and therapists were not blind to group allocation, the outcome assessor was blind and it was unclear if the analyst was blind to group allocation.
Incomplete outcome data addressed? All outcomes	Yes	Five (6%) participants dropped out from the trial, two in the medication group due to side effects, two in the electro-acupuncture group due to work commitments and a family member death, and one participant withdrew in the acupuncture plus medication group due to side effects attribute to the medication.
Free of selective reporting?	Yes	No protocol made available but reporting of outcome appears complete
Free of other bias?	Yes	There no imbalances in randomisation at baseline. The study appears free of other sources of bias

Eich 2000

Methods	Randomised placebo controlled trial of acupuncture versus sham acupuncture was undertaken.
Participants	Fifty six participants were randomised to the trial from inpatient and outpatient clinic setting in Germany. Forty three participants with minor depression (ICD 10F32.0, 32,1) and 13 patients with generalised anxiety disorder (ICD10 F41.1) were recruited to the trial. Participants were excluded if they were compulsory detained, had alcohol or drug intoxication, subcutaneous long acting medication administered in the previous 30 days, mania, bipolar disorder, schizophrenia, blood clot disorder, impaired wound healing, organic disease, seizures, pregnancy, breastfeeding, in a study in the last 30 days, and knowledge of acupuncture.

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Eich 2000 (*Continued*)

Interventions	Participants were administered body acupuncture using acupuncture points known from the literature to have a regulating effect. These included Du20 Baihui, Bl62 Shenmai, PC6 Naiguan, HT 7 Shenman, EX-HN1 Sishencong. The placebo group used sham points at non specific points with minimal insertion, located on the hand, head, foot. A total of 11 points were used for both groups. Treatment was administered once a day for two weeks. Prior to the intervention commencing a two week wash out was undertaken.
Outcomes	Outcome was assessed using the Global Clinical Improvement Scale.
Notes	Limited results could be included due to data presented in the paper was depression combined with general anxiety.

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details of the randomisation schedule were reported.
Allocation concealment?	Unclear	No details of the randomisation schedule were reported.
Blinding? All outcomes	Yes	The patient and outcome assessor were blind to group allocation, the therapist was aware of the group allocation. It was unclear if the analyst was blind to group allocation.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up.
Free of selective reporting?	Yes	No evidence of selective reporting.
Free of other bias?	Yes	No difference in baseline characteristics . The study appears free of other sources of bias.

Fan 2005

Methods	Randomised controlled trial of 81 participants allocated to acupuncture, medication (Prozac) and sham acupuncture.
Participants	Participants with depressive neurosis were recruited from Guangdong Hospital, Guangdong China. Participants were aged 18-65 years, diagnosed with depression using the CCMD-2, and needed not to have taken medication in the previous two weeks. Exclusion criteria included liver, kidney, blood, gastrointestinal disorders, infections diseases, currently pregnant or breastfeeding.

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Fan 2005 (*Continued*)

Interventions	Acupuncture was administered to four acupuncture points Baihi Du 20, M-HN-3 Yin-tang, four gates, ear seeds to auricular points liver and heart. These points were rotated between the left and right ear twice a week. Another points were retained for 30 minutes, and acupuncture was administered over three months. The first control group received 20mg of fluoxetine daily for three months. The second control group received sham acupuncture at non acupuncture points, the ear points were administered.
Outcomes	Hamilton rating scale of depression at 3 months
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	The randomisation sequence was computer generated.
Allocation concealment?	Yes	Randomisation was concealed using opaque envelopes.
Blinding? All outcomes	No	The participants and therapists were not blind to group allocation, the outcome assessor was blind and it was unclear if the analyst was blind to group allocation.
Incomplete outcome data addressed? All outcomes	No	Four participants (5%) withdrew from the study, due to side effects from the medication group.
Free of selective reporting?	Yes	No evidence of selective reporting
Free of other bias?	Unclear	Insufficient information reported to assess other sources of bias.

Fu 2008

Methods	Multi centred randomised controlled trial of acupuncture versus sham acupuncture versus medication (fluoxetine).
Participants	440 participants were recruited from 4 different hospitals between October 2004 and December 2006, in China. Inclusion criteria was based on a diagnosis of depression using the CCMD-2 and a score of >20 on the HAMD. To be include participants also needed to be conscious, no loss of speech, intelligence preserved, minimum primary education level, a TCM diagnostic criteria of 'yu bing' depressive disease due to liver qi stagnation or qi stagnation causing fire met, aged between 18-65 years, and not having taken any antidepressant medication in the previous two weeks. Exclusion criteria included: schizophrenia, organic or somatic disease that can trigger depression, <18 years of age

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	or > 65 years of age, severe cardiovascular, neurological, liver, kidney or blood function disease, pregnant, non cooperative during needling, not taking medication on time, and in the last 2 weeks have taken antidepressants.
Interventions	The treatment group received acupuncture administered to LIV3 Taichong, LI 4 Hegu, DU 20 Baihui and M-HN-3 Yin tang. The 4 gates were needled first, to a depth of 15mm, the needle was stimulated by lifting twirling manipulation until de qi was obtained. Bai hui was needled at a 30º angle in a quick motion. Yintang was needled by pinching the skin and then inserting to a depth of 15mm parallel to the surface of the skin. Baihui and Yintang were twirled until de qi was obtained. The needles were left in for 30 minutes. Two auricular acupuncture points were used, liver and heart points. Ear press tacks were placed on points secure with small strips of bandage. These points were left in for 3 days and then repeated using alternate ears. Acupuncture was administered twice a week for a total of 12 weeks. There were two control groups. The control group received fluoxetine 20mg/ day (Prozac capsule, manufactured by Eli Lilly and Company). These were taken orally once in the morning after meals 12 weeks in total. The sham acupuncture group involved needling of points in the region of Taichong, Baihui, Yintang, but roughly 0.5cun away from actual points. The needle was inserted and manipulated in the same way as the acupuncture group. The auricular acupuncture points were used in the same way as the active group.
Outcomes	Outcome measures included assessment using the HAMD, assessment of cure and marked effect >75% change from baseline at 12 weeks, and reports on adverse events.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	The randomisation allocation sequence was computer generated.
Allocation concealment?	Yes	The allocation sequence was concealed using opaque envelopes.
Blinding? All outcomes	No	The outcome assessor was blind, the blinding of participants in the acupuncture and sham group was unclear with no testing reported. The therapist was not blind to group allocation, and the blinding status of the analyst was unclear.
Incomplete outcome data addressed? All outcomes	No	Sixty four (15%) participants did not complete the trial. No further details were reported.

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Free of selective reporting?	Yes	Study protocol unavailable but all outcomes reported.
Free of other bias?	No	Potential bias with imbalance in characteristics at randomisation, including previous psychiatric medication use, history of psychiatric care, not adjusted for in the analysis.

Han 2002

Methods	Acupuncture versus standard medication (maprotiline).
Participants	Sixty six men and women aged 18-55 years were recruited to the trial from the Beijing University mental health institute, China. Inclusion criteria were ICD 10 and a score of greater than 20 on the Hamilton Depression Scale. Exclusion criteria were not specified.
Interventions	Participants were randomly allocated to receive electro-acupuncture or maprotiline. Electro-acupuncture was administered for 45 minutes, six times a week over six weeks, using an unspecified numerous standardised points. The medicated group received daily maprotiline with doses ranging from 75-250 mg, for six weeks.
Outcomes	Participants completed the Hamilton depression rating scale, clinical global impression scale and Ashberg rating scale for side effects. Outcome measurements were collated at baseline, 14, 28 and 42 days from trial entry.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details could be obtained from the author on how the allocation sequence was generated.
Allocation concealment?	Unclear	No details could be obtained from the author on the method of concealment.
Blinding? All outcomes	No	The study participant and therapist were not blind and it was unclear if the outcome assessor, and analyst were blind to the study group.
Incomplete outcome data addressed? All outcomes	Yes	Complete follow up was obtained.
Free of selective reporting?	Yes	All outcomes were reported.

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Free of other bias?	Yes	There was no imbalance in baseline characteristics between groups. Intention to treat analysis was performed. The study appears free of other sources.

He 2005

Methods	Manual acupuncture versus standard medication (fluoxetine).
Participants	One hundred and seventy participants who were inpatients with post stroke depression were recruited from Zhongshan Chinese Medicine Hospital, China. Inclusion criteria were: post stroke depression according to Chinese Neuroscience Society diagnostic guidelines. No other inclusion criteria specified. Exclusion criteria were serious heart, liver, kidney conditions or glaucoma
Interventions	The acupuncture intervention consisted of stimulation of the acupuncture points DU26 Ren Zhong, PC6 Neiguan, LIV3 Taichong, HT7 Shenmen, with xing nao kai qiao needling method, with dispersal and regulation of liver qi and calming shen. Additional acupuncture points were added according to diagnosis. If liver stagnation diagnosed points;TH6 Zhi Gou, LIV 14 Qi men were added. Qi stagnation with stagnation fire diagnosed points; LIV 2 Xing Jian, GB43 Jai xi were used to clear liver and purge fire. Heart and spleen deficiency diagnosed; points UB15 Xing Shu, UB20 Pi Shu, ST36 Zusanli, SP6 Sanyinjiao were used to strengthen spleen and nourish heart. If the spirit was depressed affecting shen, additional points ST36 Zusanli, SP6 Sanyinjiao, tong li HT5 were used to nourish heart and calm the shen. Ren zhong was needled towards the nose 5 fen deep use pecking dispersing method. Zhigou and Neiguan were needled perpendicular 1 cun, use lifting twirling dispersing method. Xing jian, Jaixi and Taichong were needled perpendicular 0.5 cun using twirling dispersing method. Tong li, Shenmen were needled perpendicular using reinforcing-reducing manipulation method. Qimen was needled perpendicular 1 cun using twirling dispersing method. Xingshu and Pishu were needled towards the spine 1 cun, after de qi use twirling dispersing method. Zusanli and Sanyinjiao were needle perpendicular one cun, using lifting twirling reinforcing method. Needles were retained for 30 min, 6 days a week. The control group received fluoxetine 20mg/d, taken in the morning. Treatment was given over eight weeks.
Outcomes	Participants completed the Hamilton Rating Scale, and rates of recovery were reported "cured", and "marked effects" at 8 weeks.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Yes	The randomisation schedule was computer generated

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He 2005 (*Continued*)

Allocation concealment?	Unclear	No additional details could be obtained from the author.
Blinding? All outcomes	No	The study participant, therapist and outcome assessor were not blind and it was unclear if the outcome assessor and analyst were blind to the study group.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up.
Free of selective reporting?	Yes	No protocol available but all outcomes reported.
Free of other bias?	Yes	There was no imbalance at randomisation. The study appears free of other sources of bias.

He 2007

Methods	Randomised controlled trial of acupuncture versus medication (amitriptyline).
Participants	Two hundred and fifty six participants were randomised to the trial. Participants were recruited as inpatients from The First Affiliated Hospital of Tianjin University of Chinese Medicine, China. Particpants were recovering from a stroke and depression was diagnosed using the (CCMD-3). This study clearly stated the criteria: dysphoria is the predominant symptom lasting a minimum of 2 weeks, and at the same time exhibits at least 4 of the following symptoms: 1. loss of interest, no feelings of pleasure; 2. reduced concentration and feel fatigued; 3. slow psychomotor activity; 4. low self evaluation or self blaming or feelings of guilt; 5. cognitive difficulties or self aware impairment of association; 6. repetitive thoughts of suicide or inflicting injury to oneself; 7. dyssomnia, e.g. insomnia, waking early or over sleeping; 8. reduction in appetite or obvious drop in body weight; 9. hypo sexuality. No exclusion criteria were stated.
Interventions	The experimental group received acupuncture. Acupuncture points were PC6 Neiguan, DU26 Shui guo, DU20 Baihui, M-HN-3 Yintang, SP6 Sanyinjiao were selected. Nei guan on both sides was needled perpendicular to a depth of 0.5-1cun, manipulated using lifting twirling dispersing method for one minute. For the first three days needling of Shui guo was towards the mid of the nose to a depth of 5 fen, using pecking manipulation method. After the first three days Baihui and Yintang were used. Baihui was needled towards the posterior side, to a depth of 5 fen, using a quick twirling tonifying method for one minute. Yin tang was needled with the skin pinched, to a depth of 5 fen, using a quick twirling tonifying method for one minute. Sanyinjiao was needled perpendicular to a depth of 0.5-1.2 cun, use a lifting twirling tonifying method for one minute. Each needle was retained in for 20 minutes, acupuncture was administered twice a day for one month. The control group received amitriptyline. For the first day amitriptyline 50mg was taken orally at night. Subsequently add 1 tablet (25mg per tablet) per day until 200 mg per

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He 2007 (*Continued*)

	day is reached.
Outcomes	Participants completed a self rating scale of depression and the Hamilton Rating Scale for Depression. Assessment was made at baseline and at four weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Unclear	No response was received from the author in reply to communication sent requesting further information on randomisation.
Allocation concealment?	Unclear	No response was received from the author in reply to communication sent requesting further information on randomisation.
Blinding? All outcomes	No	The participant, and therapist were not blind to study group. The blinding status of the analyst was unclear.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up. All participants were included in the analysis.
Free of selective reporting?	Yes	No study protocol was available. All outcomes reported.
Free of other bias?	Yes	There was no imbalance at randomisation. The study appears free of other sources of bias.

Khang 2002

Methods	Randomised controlled trial of electro-acupuncture compared with medication (amitriptyline).
Participants	Fifty two participants who were inpatients at a hospital in Jiangxi, China were recruited to the trial. Depression was diagnosed using the CCMD-2-R and a HAMD score of $\geq$18. Participants were ages 18-58 years and needed to have stopped using antidepressants for more than one week. Participants were excluded if they had serious heart, liver, or kidney conditions, dementia, or glaucoma.
Interventions	The study intervention was for six weeks. The electro-acupuncture group received stimulation to points: DU20 Baihui, M-HN-3 Yingtang, DU17 Naohu, DU21 Qian Ding. Secondary points were added based on a differential diagnosis: melancholy add DU15 Ya Men and Tian De, anxiety and agitation

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Khang 2002 (*Continued*)

	add DU11 Shen dao, SP6 Sanyinjiao and LIV3 Taichong, insomnia with lots of dreams add PC6 Neiguan, UB23 Shen shu and KD3 Taixi, inactivity add LU11 Shao Shang and Shi Xuan, and hallucination and guilt with strong suicidal add DU26 Shui guo. Electro acupuncture machine model G6805-I, was used with select intermittent frequency, and a current strong enough to observe muscles pulsating and stimulation within the patient comfort level. Needles number 26 and length of 1.5-2 inch were used. At each treatment the four main points were used and then additional points added based on the differential diagnosis. Treatment was given once a day, each lasting 45 minutes, administered six times a week. The control group received amitriptyline 150-300mg/d according to severity, medication was administered twice a day, for six weeks.
Outcomes	The HAMD scales was administered each weekly for six weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	No	The randomisation allocation sequence was generated by alternation using the day of admission.
Allocation concealment?	No	Randomisation was based on inadequate generation.
Blinding? All outcomes	No	The participant and therapist were not blind to group allocation. The outcome assessors were blind to group allocation, the status of the analyst was unclear.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up, all participants included in the analysis of outcomes
Free of selective reporting?	Yes	No protocol available. All outcomes reported.
Free of other bias?	Yes	The study appears free from other sources of bias. Baseline characteristics were not different between groups.

Li 2004

Methods	Single blind randomised controlled trial of acupuncture compared with medication (fluoxetine).

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Participants	One hundred and ten participants were recruited to the trial as inpatients at hospitals in the Tianjin District, China. Participants were diagnosed with depression using the Hamilton Rating Scale for Depression with a score of > 20 and the CCMD-3. Exclusion criteria included: a history of organic mental disorder, taking psychoactive drugs, schizophrenics and other mental disorders, or any heart, liver, kidney and glaucoma condition.
Interventions	The study was administered over six weeks. The aim of the treatment was to regulate mental activity and sooth the liver. Acupuncture points DU 20 Baihui, DU16 Fengfu, DU 26 Renzhong, M-HN-3 Yintang, M-HN-1 Shishengcong, LIV3 Taichong, UB18 Ganshu were used. Baihui was needled towards anterior, until 1.67-2.66cm of the needle was inserted. Fengfu was needled perpendicular to a depth of 1.67-3.33cm. A reinforcing-reducing method of needle manipulation was applied for one to two minutes. Renzhong was needled towards the nose to a depth of 1-1.67cm, using a twirling reducing needling method for one to two minutes. Shishengcong was needled towards Baihui 1.67-2.66cm, using twirling reinforcing method. Taichong was needled perpendicular to a depth of 1.67-3.33cm, and Ganshu was needled to a depth of 1.67-2.66cm, and stimulated using a twirling reducing method for one to three minutes. Acupuncture was administered once per day, five times per week, needled were retained for 30 minutes each time The treatment was compared to another acupuncture group, and to a standard medication group. The medication group received fluoxetine 20mg/day, administered in the morning after meals, for six weeks. Details were not reported on the active control acupuncture group due to this form of control not meeting the eligibility criteria of the protocol.
Outcomes	The Hamilton Rating Scale was used to assess depression outcomes at six weeks.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Yes	The allocation sequence was computer generated.
Allocation concealment?	Unclear	No details were reported on concealment of the allocation. No response received from letter sent to author.
Blinding? All outcomes	No	The study participant and therapist were not blind and it was unclear if the outcome assessor, and analyst were blind to the study group.
Incomplete outcome data addressed? All outcomes	Unclear	Seven (6.3%) cases dropped out of the trial. Acupuncture group - one participant dropped out due to work commitments. Second acupuncture group - one partici-

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Li 2004 (*Continued*)

		pant was hospitalised due to worsening of symptoms. Medication groups five participants dropped out sue to side effects of medication, high cost of treatment and one no reason given. Participants excluded from the analysis.
Free of selective reporting?	Yes	Additional data presented on levels of cortisol and ACTH.
Free of other bias?	Yes	Group characteristics similar at baseline. The study appears free of other sources of bias.

Li 2007

Methods	Electro acupuncture compared with standard medication (fluoxetine or paroxetine).
Participants	Fifty six participants were inpatients at The First Teaching Hospital of Tianjin Traditional Chinese Medicine College, China. Inclusion criteria were the Chinese Classification and Diagnostic criteria of Mental Health Disorders (CCMD-3), with mild depression: (HAMD score>20, BDI score 5-13), moderate depression: (HAMD score>26, BDI score 14-20), severe depression: (HAMD score>35, BDI score>21). No exclusion criteria were specified.
Interventions	Particpants were randomly allocated to receive electro-acupuncture or fluoxetine or paroxetine (adequate dose defined). The following acupuncture points were used: GB20 Feng chi, Anmien, M-HN-1 Shishencong, M-HN-3 Yintang, DU20 Baihui, Ht 7 Shenmen, PC5 Jian Shi, LI4 Hegu, LIV3 Taichong, SP6 Sanyinjiao, GB40 Quixu, GB 8 Shuaigu, ST36 Zhusanli. All needles are manipulated with a twirling method, a gentle insertion is applied on Shenmen. Zhong wan used a breathing purging method, electro acupuncture was applied to Yintang and Baihui, with the level of stimulation level determined by the participant. Needles were left in for 30 minutes, participants were needled once a day, two weeks was one course of treatment. Depending on severity of depression, the longest treatment duration was six weeks (3 courses of treatment). The control group received fluoxetine or paroxetine 20mg taken orally once a day in the morning. Six weeks was one course of treatment.
Outcomes	Participants completed the Hamilton Rating Scale, and rates of recovery were reported "cured", and "marked effects"at 18 weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description

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Adequate sequence generation?	Unclear	No information could be obtained from the author on how the allocation sequence was generated.
Allocation concealment?	Unclear	No response to letters sent to author.
Blinding? All outcomes	No	The study participant and therapist were not blind and it was unclear if the outcome assessor, and analyst were blind to the study group.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up, all participants were included in the analysis.
Free of selective reporting?	No	Data reported on the Hamilton Rating Scale but not the Beck Depression scale.
Free of other bias?	Yes	No imbalance in participant characteristics at baseline. The study appears free of other sources of bias.

Luo 1985

Methods	Electro acupuncture compared with amitriptyline.
Participants	Forty seven men and women were recruited to the trial. participants scored 20 or more on the Hamilton Rating Scale. No exclusion criteria were specified.
Interventions	Two acupuncture points were stimulated DU20 Baihui and M-HN-3 Yintang. Needles were stimulated using electro acupuncture. Participants received six sessions a week for five weeks. Participants taking their medication (amitriptyline) received an initial dose of 25mg three times a day for one week. The treatment dose was then increased to an average dose of 142mg.
Outcomes	The Hamilton Rating scale, Clinical Global Impression Chart, and the Rating scale for side effects (ASBERG) were interviewed by two psychiatrists at the beginning and end of the trial.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details were provided on randomisation. and blinding. reported and

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Luo 1985 (*Continued*)

Allocation concealment?	Unclear	No details were reported on randomisation.
Blinding? All outcomes	No	Participants were not blind to their group allocation. No other details were reported.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up, all participants were included in the analysis.
Free of selective reporting?	Yes	All outcomes were reported.
Free of other bias?	Yes	Baseline characteristics were similar between groups. The study appears free of other sources of bias.

Luo 1988

Methods	Electro acupuncture compared with amitriptyline.
Participants	Two hundred and forty one men and women were recruited from three psychiatric hospitals in China. Participants scored 20 or more on the Hamilton Rating Scale. No exclusion criteria were specified. Participants were aged 32-64 years.
Interventions	Two acupuncture points were stimulated DU20 Baihui and M-HN-3 Yintang. Needles were stimulated using electro acupuncture. Participants received six sessions a week for six weeks. Participants taking their medication received an initial dose of 25mg three times a day for one week. The treatment dose was then increased to 50 mg three times a day.
Outcomes	The Hamilton Rating scale, Clinical Global Impression Chart, and the Rating scale for side effects (ASBERG) were completed at the start and end of the trial.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details were provided on randomisation.
Allocation concealment?	Unclear	No details were provided on randomisation.
Blinding? All outcomes	No	Participants were not blind to their group allocation. No other details were reported.
Incomplete outcome data addressed? All outcomes	Unclear	There was no loss to follow up.

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Luo 1988 (*Continued*)

Free of selective reporting?	Yes	All outcomes were reported for the primary outcomes.
Free of other bias?	Unclear	It was unclear if the study was free of other sources of bias.

Luo 1998

Methods	Electro acupuncture plus placebo tablets compared with amitriptyline versus electro acupuncture and amitriptyline.
Participants	Twenty nine men and women were recruited to the trial. Participants were recruited from a closed ward at the Beijing Medical University Hospital. All participants were drug free for the week before commencing the trial. Participants scored 20 or more on the Hamilton Rating Scale. No exclusion criteria were specified.
Interventions	Two acupuncture points were stimulated DU20 Baihui and M-HN-3 Yintang. Needles were stimulated using electro acupuncture for 45 minutes, the current was 3-5mA at a frequency of 2Hz. Participants received six sessions a week for six weeks. Participants taking their medication received an average dose of 161 mg per day.
Outcomes	The Hamilton Rating scale, Clinical Global Impression Chart, and the Rating scale for side effects (ASBERG).
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details were provided on randomisation.
Allocation concealment?	Unclear	No details were provided on randomisation.
Blinding? All outcomes	No	Participants were not blind to their group allocation. Outcome assessors were blind to the study group, no other details were provided.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up, all participants were included in the analyses.
Free of selective reporting?	Yes	Data was presented on the study outcomes.

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Free of other bias?	Unclear	It was unclear if the study was free of other sources of bias.

Quah Smith 2005

Methods	Single blind randomised controlled trial of laser acupuncture compared with sham placebo acupuncture.
Participants	Thirty men and women were recruited to the study from a community setting in Australia. Inclusion criteria were: a clinical assessment of depression and a BDI score of 12-30. Participants were excluded if they were: suffering from chronic depression over two years, hypomania, psychosis or drug abuse, had been taking psychotropic drugs over the previous three months, were pregnant, a history of endocrine disorders, or were suicidal.
Interventions	Acupuncture was performed by a fellow of the Australian Medical Acupuncture College. Acupuncture treatment was administered based on TCM diagnosis, individualised and based on syndrome. Most common diagnosis pattern liver qi stagnation, or liver qi deficiency. Treatment individualised. Classical alarm points used Qi Men Liv 14 (on the right), CV14 Ju Que,15, HT 7 Shenmen, LIV 8 Qu Quan Other points included Kd10 Yin Gu, LI4 Hegu, SP6 San Yin Jao, GV20 Baihu. Twelve sessions were administered twice weekly for first four weeks then weekly. No co-interventions allowed. A low level laser unit was used. A flick switch was installed, numbered 1 and 2 by the manufacturer. The laser was applied to each point for five seconds, delivering 0.5J. Total delivered 3-4J per session. The placebo group received inactive laser. The laser unit beep and flashed for both groups.
Outcomes	Participants completed the BDI, and HAMDS if participant had anxiety, and an adverse events questionnaire. The BDI was completed at four, and eight, with follow up through a mail out at 12 and 20 weeks following randomisation.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Yes	Randomisation was generated from "lot drawing" based on equal numbers of red and green beans placed in a closed jar with a small hole in the lid. The research assistant randomly selected one bean to determine group allocation.
Allocation concealment?	Yes	The coding of the group allocation was determined by a flip of the coin and known only by the manufacturer until the data had been analysed.

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Quah Smith 2005 (*Continued*)

Blinding? All outcomes	Yes	The patient, acupuncturist, research assistant and analyst were blind to group allocation.
Incomplete outcome data addressed? All outcomes	No	Four (13%) participants discontinued intervention, two in each group, due to illness, decrease mood and relocation. One participant in control group lost to follow up. Date analysed 14/16 treatment, 12/14 control
Free of selective reporting?	Yes	No protocol available.
Free of other bias?	Yes	There were no imbalances at randomisation. There were no other sources of bias.

Roschke 2000

Methods	Single blind placebo controlled trial.
Participants	Seventy inpatients aged 20-70 years, in Germany were randomised to the trial. Patients were eligible if diagnosed with clinical depression equating to DSM IV and a score of greater than 18 on the Hamilton depression scale. Patients were excluded if suicidal, a diagnosis of schizophrenia or bipolar affective disorders, or delusions. Patients with coagulation disease, wound healing disease, emphysematous thorax, abnormal blood cell count, serious liver and kidney disease and epilepsy were excluded. Participants were aged 20-70 years.
Interventions	Participants were randomised to three study groups. Mianserin (90-120 mg/day, mianserin (90-120 mg/day) plus verum acupuncture, mianserin (90-120 mg/day) plus placebo acupuncture). Up to 20 mg/day Diazepam was allowed if required. A standardised acupuncture treatment was applied three times a week over four weeks.
Outcomes	The Global assessment scale, Melancholia scale, Clinical global impressions scale were used to assess depression. Mean dosage of medication was collected and a self report of improvement.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details could be obtained from the author on how the allocation sequence was generated.
Allocation concealment?	Unclear	No details could be obtained from the author.

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Roschke 2000 (*Continued*)

Blinding? All outcomes	No	The study participant and therapist were not blind and it was unclear if the analyst was blind.The outcome assessors were blind. No data was provided to verify if participants were blind to being allocated to acupuncture or placebo acupuncture.
Incomplete outcome data addressed? All outcomes	Yes	There were no losses to follow up. All participants were included in the analysis.
Free of selective reporting?	Yes	No evidence of selective reporting.
Free of other bias?	Yes	.There was no imbalance in baseline characteristics between groups. The study appears free of other sources of bias.

Shen 2005

Methods	Single blind randomised controlled trial of manual acupuncture versus medication (amitriptyline), among participants recovering from a stroke.
Participants	Two hundred and fifty six participants were recruited a hospital setting in Tian jin, China. Participants were diagnosed using the criteria of the CCMD. Participants were excluded if there was impairment of speech impaired consciousness or history of organic metal illness.
Interventions	The intervention of manual acupuncture points used points PC6 Nei guan, GV26 Shui guo, DU20 Baihui, M-Hn-3 Yintang, and SP6 Sanyinjiao. The form of needling stimulation was described as: locating Neiguan on both sides, perpendicular insertion of the needle to a depth of 13-25mm, the needles were manipulated with twirling lifting method for one minute. First the first three days acupuncture points Shui Gou was used, with needling towards the nose, using a pecking method of needle manipulation. The following three days stimulated the acupuncture points Yintang and Baihui. These points were needled towards the posterior side to a depth of 13mm. Manipulation of the needle used frequent twirling reinforcing method for one minute. Sanyinjiao was needled to a depth of 13-44mm, with a twirling reinforcing method for one minute. Needles were left in for 20 minutes, treatment was given, once per day, over 30 days. The control group received amitriptyline. A dose of 50mg/d was taken orally at night, three days later the dose was increased by 25mg everyday until a dose of 200mg was administered.
Outcomes	An assessment of improvement was made using cured, marked effect, improved, no effect at 8 weeks.
Notes	

Risk of bias

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Shen 2005 (*Continued*)

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	The allocation sequence was computer generated.
Allocation concealment?	Unclear	No response was received from the author in relation to a letter sent requesting further details on the methodology.
Blinding? All outcomes	No	Paricipants and the therapist were not blind and it was unclear if the outcome assessor and analyst were blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up.
Free of selective reporting?	Unclear	No protocol available, data was reported on study outcomes, however instrument used was unclear.
Free of other bias?	Yes	Baseline characteristics were similar. There were no other major sources of bias.

Tang 2003b

Methods	Randomised controlled trial of electro acupuncture versus no treatment.
Participants	Sixty participants were recruited from inpatients admitted to the hospital, with stroke, at the Third Hospital, Zhongshan, China. participants were eligible if they scored >8 on the HAMD. Participants were excluded if they were currently taking anti-depressants.
Interventions	Electro acupuncture was applied to acupuncture points DU20 Bai Hui, DU24 Shenting, M-HN-1Sishencong, PC6 Neiguan and HT7 Shenmen. Baihui, Shenting or Sishencong were needled on alternate days. Other additional points included ST36 Shusanli and LIV3 Taichong. Needles 0.35mm X 24mm-40mm gauge and length were used. De qi was achieved, and further manipulation of the needles was done using twirling reinforcing-reducing method for 15 minutes. Needles were then connect to the electro acupuncture machine (D8606-I series). An intermittent wave was set at 1.3Hz-1.6Hz frequency. Controls were set according to patients tolerance. Needles were left in for 30 minutes. Treatment was administered once per day, five times per week, and not at weekends. Treatment was administered over one month, consisting of 15-20 treatments. The control group received no treatment.
Outcomes	The Hamilton Rating scale for depression was used, and the social domain on the WHO quality of life instrument was reported at four weeks.
Notes	

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Tang 2003b (*Continued*)

Risk of bias		
Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	We were unable to establish further details on the trial methodology. No response received to communication made with the author.
Allocation concealment?	Unclear	No details could be obtained from the author.
Blinding? All outcomes	No	Participants and the therapist were not blind and it was unclear if the outcome assessor and analyst were blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	No attrition or exclusions reported, no missing data, all participants included in analysis.
Free of selective reporting?	Yes	No protocol available, data were reported on the study outcomes.
Free of other bias?	Yes	Baseline characteristics of participants were similar and there were no other sources of bias.

Wang 2006

Methods	Single blind randomised controlled trial of acupuncture compared with medication (sertraline).
Participants	Forty five participants were enrolled as inpatients at The Second Clinical Medical College of Nanjing University of TCM, China. Depression was diagnosed using the CCMD III category, and HAMD 17 questions score greater than 18. Exclusion criteria include serious heart, lung and kidney conditions. participants were aged 18-75 years.
Interventions	The main acupuncture points used were:- DU24 Shen ting, DU 20 Baihui, DU11 Shen dao, UB 67 Zhi yin. Other points were used according to differential diagnosis. These included; Heart and spleen deficiency add PC6 Neiguan, ST36 Zhusanli, Heart and gallbladder qi deficiency add HT7 Shenmen, Liver qi stagnation add LIV3 Taichong, SP6 Sanyinjiao, PC6 Neiguan, Qi stagnation resulting in fire add GB20 Feng chi, Phlegm heat add ST40 Feng long,SP6 Sanyinjiao. The needle was repeatedly lifted and twirled until the patient felt comfortable with a gentle long lasting sensation from the needle. The needling technique was gentle, low frequency, minimal angle change when twirling (no more then 90°). Each needle manipulation was for two to three minutes. Treatment was given once a day, for four weeks.

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Wang 2006 (*Continued*)

	The standard care group was as follows: for first time depression sufferers sertraline was used, starting with 50mg/day, after four to seven days increased to 100mg/day. For those participants experiencing a relapse venlafaxine or mirtazepine was used. Venlafaxine was started at 75mg/day, if no effect the dose was increase to 100mg/day. Mirtazapine was started with 15mg/day, if limited response the dose was increased to 45mg/day. Treatment was administered over four weeks. Note this dosage may be sub optimal.
Outcomes	Hamilton rating scale and the Pittsburg Sleep Quality Index were used at four weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	No	The allocation sequence was generated by date of admission.
Allocation concealment?	Unclear	It was unclear if concealment was adequate. No communication received from author requesting further details on randomisation.
Blinding? All outcomes	No	Participants and the therapist were not blind and it was unclear if the outcome assessor and analyst were blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	No withdrawal or loss to follow up, all participants included in analysis.
Free of selective reporting?	Yes	No evidence of selective reporting.
Free of other bias?	Yes	No imbalance in baseline characteristics between groups. The study appears free of other sources of bias.

Wenbin 2002

Methods	Randomsied controlled trial of acupuncture versus medication (fluoxetine hydrochloride). .
Participants	Sixty two participants were recruited to the trial with depressive psychosis from the in and outpatient departments of the Second Clinical Medical College of Guanzhou University of TCM, China. The clinical diagnosis of depression was made using the CCMD-2-R, and participants needed to score greater than 17 on the HAMD scale. Participants with severe organic disease were excluded from the trial. Participants were aged 19 to 51 years, with a duration of depression ranging from six months to six and half years.

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Wenbin 2002 (*Continued*)

Interventions	Participants receiving acupuncture based on TCM syndrome differentiation. The main syndromes were Heart and Spleen deficiency, Spleen and Kidney Yang deficiency, and a disorder of the Chong and Ren meridians. The main acupuncture points were Hegu LI4, Taichong LR 3, Baihui GV 20, Yintang EX-HN-3. Other adjunct points included Xinshu (Bl15), or Jueyinshu BL14(implanted intradermal needle). Ear points Xin (MA-IC), Dannang (EX-LE 6), and Ershenmen (MA-TF 1) implanted ring headed thumbtack needle for insomnia. Shenmen HT7, Sanyinjiao (SP6) was added for Heart and Spleen deficiency. Shenmen (HT 7) and Qiuxu (GB 40) was used for timidity due to heart qi deficiency. Sanyinjiao (SP 6) was added for liver qi stagnation and spleen deficiency. Taixi (KI 3), Daling (PC7) and Yinbai (SP1) were used for a disturbance of the mind by accumulated phlegm. Gongsun (SP4) and Lieque (LU7) supplemented a disorder of the Chong and Ren meridians. Qi was obtained. Needles were retained for 30 minutes, acupuncture was administered daily for eight weeks. The control group was administered fluoxetine hydrochloride 20mg per day for eight weeks.
Outcomes	Change in HAMD score. A score of cured was defined as greater than 75% improvement. Reduction in symptoms was described as the difference before and after treatment at 8 weeks.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	The randomisation sequence was generated by the study statistician, producing a computer-generated list.
Allocation concealment?	Unclear	No details on the allocation were reported.
Blinding? All outcomes	No	It was not feasible to blind the participant and therapist, and no details were provided on the blinding status of the outcome assessor and analyst.
Incomplete outcome data addressed? All outcomes	Yes	No participants were lost to follow up all participants were analysed.
Free of selective reporting?	Yes	None apparent
Free of other bias?	Yes	There was no imbalance in baseline characteristics. The study appears free of other sources of bias.

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Whiting 2008

Methods	This was a pilot randomised controlled trial of acupuncture compared to sham acupuncture.
Participants	Fifty nine participants with mixed anxiety and depression expressed an interest in the study, 23 were assessed for eligibility. Participants were recruited from seven general practices in the UK. participants needed to be at least 18 years with depression diagnosed using the Clinical Interview Schedule Revised. Exclusion criteria included: history of substance abuse, brain damage, other psychiatric disorder preceding the onset of depression, in receipt of concurrent alternative treatment, talking therapy for repression, or in receipt of pharmacological treatments for more than three months in the past year. Nineteen participants were randomised.
Interventions	Participants received either 12 sessions of acupuncture or 12 sessions of sham acupuncture, each session lasted 40 minutes by a TCM practitioner with 10 years clinical experience. A formula of points plus two discretionary points was used. Choice of points and needle depth was individualised according to TCM principles and body mass of the patient. Needles were retained for 20 minutes. The control group received sham acupuncture. Sham acupuncture involved actual shallow needling but at sites unrelated to depression. Points reported on web appendix. The was no needle stimulation and de qi was avoided. Needles were retained for 20 minutes, and 12 sessions administered
Outcomes	Beck Depression Inventory. RAND 36 Item Survey.
Notes	

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Unclear	It was unclear how the randomisation sequence was generated.
Allocation concealment?	Yes	The allocation sequence was concealed using off site central randomisation.
Blinding? All outcomes	Yes	participants, assessors and researchers were blind to group allocation. It was unclear if the analysts were blind to group allocation. Siubjects were asked about their perception of which group they were allocated to. Blinding was maintained.
Incomplete outcome data addressed? All outcomes	No	Five (26%) participants did not complete all the acupuncture sessions. Three (50%) participants did not comply with treatment in the sham group. Two participants were lost to follow up in the sham group.

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Whiting 2008 (*Continued*)

Free of selective reporting?	Yes	No protocol available, two scales described and data reported.
Free of other bias?	No	There were imbalances at randomisation between groups with regard to age and BDI. No other sources of bias.

Xiujuan 1994

Methods	Single blind randomised controlled trial of acupuncture compared with standard treatment amitriptyline.
Participants	Forty one participants with clinical depression diagnosed using the Hamilton Depression scale were recruited to the trial from in and out patient clinics at the Beijing Medical university, China. No exclusion criteria were reported.
Interventions	Participants were randomised to receive acupuncture or standard medical care using amitriptyline. Acupuncture points DU 24 Shenting, DU20 Baihui, DU14 Dazhui Du, DU12 Shenzhu, Conception Vessel 17 Shanzong, CV14 Juque Ren, GB 20 Fengchi, PC6 Neiguan. Additional acupuncture points were used depending on the Chinese medical diagnosis. For stagnation of Liver Qi ST23 Taiyi, SP6 Sanyinjiao and LIV3 Taichong were used. For Stagnation of Liver Blood LI4 Hegu, LIV3 Taichong, SP10 Xuehai were used. For Spleen and Heart Deficiency HT7 Shenmen, PC7 Daling, SP6 Sanyinjiao and ST36 Zusanli were used. For Spleen and Kidney Yang Deficiency KD3 Taixi, SP6 Sanyinjiao, ST36 Zusanli and CV4 Guanyuan were used. Needles were inserted bilaterally and stimulated manually except for DU 24 and DU 20 which were stimulated using electro acupuncture (frequency 80-100/second). Treatment was administered for six days over six weeks. The control group received 25 mg of amitriptyline on the first day, the dose was increased by 25-50 mg each day up to 150 mg. In the second week the dose was adjusted according to response and side effects but ranged from 150 mg to 300 mg daily.
Outcomes	The Hamilton Rating Scale for Depression was used to collect data once a week over six weeks. Data was also available on patients cured.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	It was unclear how the allocation sequence was generated.
Allocation concealment?	Unclear	It was unclear if there was adequate concealment of the randomisation schedule.

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Xiujuan 1994 (*Continued*)

Blinding? All outcomes	No	Participants and therapist were not blind to group allocation, and it was unclear if the outcome assessor and analyst were blind to group allocation.
Incomplete outcome data addressed? All outcomes	Yes	Follow up was complete, all participants were included in the analysis.
Free of selective reporting?	Yes	No evidence of selective reporting.
Free of other bias?	Unclear	Insufficent information to judge.

Yan 2004

Methods	Single blind randomised controlled trial of electro-acupuncture compared with medication (amitriptyline).
Participants	Thirty participants were inpatients at the Anning Hospital, Tianjin, China. Depression was diagnosed according to CCMD and with a HAMD score > 20. No exclusion criteria were reported.
Interventions	Electro acupuncture was administered to two acupuncture points: DU20, Baihui and M-NH-3 Yingtang. Needles were Inserted to a depth of one cun, and connected to the electro acupuncture machine model G605. A strong current was delivered to generate visible observation of muscle pulsation, with a threshold of frequency 80-90 times/min. Needles were retained for one hour, once per day, and 30 treatments were administered. The control group received amitriptyline. For the first week 250mg per day was administered, medication was taken three times a day, according to severity and side effects reported by the participant, and the dosage was adjusted accordingly. The. average dose was 130mg a day (sub optimal dose). Medication was administered over six weeks.
Outcomes	The severity of depression was measured using the HAMD at six weeks. The improvement in depression was measured subjectively reporting on the number of participants cured.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	It was unclear how the randomisation sequence was generated.
Allocation concealment?	Unclear	No response received from author requesting further details on randomisation.

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Yan 2004 (*Continued*)

Blinding? All outcomes	No	participants and the therapist were not blind, the outcome assessor was blind to group allocation, and it was unclear if the analyst was blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	There was no loss to follow up. All participants included in the analysis.
Free of selective reporting?	Yes	Study protocol unavailable, data was reported on study outcomes.
Free of other bias?	Yes	Groups were comparable at baseline. No other sources of bias apparent.

Zhang 2003

Methods	Randomised trial of 460 participants receiving electro acupuncture or medication (amitriptyline).
Participants	Participants were recruited to the trial from in and out patients from Sichuan Province, China. Depression was diagnosed according to CCMD-2. Inclusion criteria were a score of greater than 20 on the Hamilton depression scale. Age ranged from 12-50 years. The duration of depression ranged from six months to four years.
Interventions	Two primary groups of acupuncture points were administered to participants. Firstly, Baihui DU20, Laogong PC8, and Yongquan KI 1. Other points included: Shuugou DU26, Hegu LI 4, and Taichong LIV3. Additional combined points were administered. For participants with palpitations, insomnia, vexation, Xinshu Bl15, Fengchi GB20, Neiguan PC6, Shenmen HT7 were added. For participants with stomach ache, poor appetite, abdominal distension Zusanli ST36, Pishu BL20, and Weishu BL21 were added. The two groups of acupuncture points were used alternatively. Acupuncture needles were inserted to a depth 0.5-1.0cun. ML8804 electroacupuncture unit was applied at an output of 50-100Hz, wave width 200micros and a current of 2-3mA. The needles were stimulated until muscles trembled slightly. Needles manipulated using a reinforcing reducing technique for 30-60 minutes. Treatment was administered six out of seven days. For the medication group amitriptyline was given 25mg three times a day in the first week. Subsequent doses were modified after the first week, with an average dose of 150mg per day administered over three weeks. All patients received three weeks of treatment with psychological therapy.
Outcomes	The following outcomes were described. Cure clinical symptoms disappeared with no sign of relapse after 2-3 weeks. Marked effect: clinical symptoms eased with occasional emotional fluctuation. Improvement: clinical symptoms improved with some mental fluctuation. Failure, no improvement. The Hamilton Rating scale for depression was used at baseline and three weeks.
Notes	

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Zhang 2003 (*Continued*)

Risk of bias		
Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	No details were reported on the method of randomisation.
Allocation concealment?	Unclear	Unable to confirm details on randomisation from the author.
Blinding? All outcomes	No	The participant and therapist were not blind to group allocation. It was unclear if the outcome assessor and analyst were blind to group allocation.
Incomplete outcome data addressed? All outcomes	Yes	No loss to follow up and all participants were included in the analysis.
Free of selective reporting?	Yes	Protocol unavailable, data was available on study outcomes.
Free of other bias?	Yes	Groups were comparable at baseline.Study appears free of other sources of bias

Zhang 2007

Methods	Single blind randomised controlled trial of electro acupuncture plus medication (paroxetine) compared with medication for participants with clinical depression.
Participants	Forty two participants were recruited as inpatients at hospital in Hubei, China. Depression was diagnosed using the CCMD-3, and a HAMD score of greater than 17. Exclusion criteria included; participants with previous suicide attempts, pregnancy, breastfeeding, or dependence on drugs or alcohol.
Interventions	Participants in the treatment group received electroacupuncture: Dominant acupuoints were:- Baihui (DU20) and Yintang (EXHN3). Bilateral auxiliary points: were Neiguan (PC6) Waiguan (SJ5) Shenmen(HT7), Hegu (LI4), Taichong (LR3), Zusanli (ST36), Fenglong (ST40), Sanyinjiao(SP6), Taiyuan (LU9), etc (sic). Needles were connected to the electro-acupuncture machine type g6805, and needle stimulation was administered at 2Hz frequency, sparse-dense wave, 6 volts, applied to produce stimulation within patients comfort level. EA was applied 30 minutes once daily, six times per week, for six weeks. Both groups received medication. The control group received paroxetine, 10-40mg daily orally for six weeks as one therapeutic course.
Outcomes	The HAMD was used to assess depression outcomes and side effects were reported at 2, 4 and six weeks.

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Zhang 2007 (*Continued*)

Notes		
Risk of bias		
Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Unclear	It was unclear how the randomisation sequence was generated.
Allocation concealment?	Unclear	It was not reported if there was adequate concealment of the allocation sequence.
Blinding? All outcomes	No	participants and the therapist were not blind, and it was unclear if the outcome assessor and analyst were blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	There were no losses to follow up.
Free of selective reporting?	Yes	One outcome measure was reported, no other information available from a study protocol
Free of other bias?	Yes	There were no differences in groups at baseline. The study appears free of other sources

Zhuang 2004

Methods	Single blind randomised controlled trial of acupuncture, plus massage compared with medication.
Participants	Sixty two participants who were day and in patients at the Guangzhou hospital China were recruited. participants had post stroke depression for greater than a year and diagnosed using the CCMD-R diagnostic criteria and a score of greater than 8 on the HAMD. Exclusion criteria included: no serious cardiovascular disease or an allergy to a sedative named "Dai an shen" containing flupentixol and melitracen
Interventions	"ZhisanZhen" included a combination of points including, GB13 Ben Shen, DU24 Shenting, PC6 Neiguan and SP4 Gongsun. The "Zhisanzhen" is needled using 25mm needles. PC6 was needled using 50mm needles, with deep needling. SP4 was needled towards SP3 Taibai, with de qi obtained, and the sensation of qi sensation moving towards chest. Needles are retained for 30 minutes. Participants were needled every second day, 15 treatments were given. In addition the group received finger point pressure and massage. The massage consisted of a) Head massage: massage on Tianmen points press Yingtang and stroke towards Shenting, repeated 5 times. Pressure applied to acupuncture points DU20 Baihui, M-NH-3 Yingtang, DU26 Shuigou and M-HN-9 Taiyang five times. Points GB20 Fengchi

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	and DU16 Feng fu were pressed three times. b) Abdominal massage: In a circular clockwise motion massage was applied to the abdomen 10 times. Pressure massage was applied to acupuncture points CV8 Shenque, CV4 Guanyuan, CV6 Qihai and CV17 Shanzhong 3-5 times. c) Tendon separating pressure was applied to acupuncture points ST36 Zhusanli, SP6 Sanyinjiao three times. Massage using a kneading technic was applied to KD3 Taixi, LIV3 Taichong, SP6 Sanyinjiao and PC6 Neiguan three times. Massage was applied once every second day, for 15 treatments. The control group received medication consisting of Dai an shen (contains flupenthixol and melitracen). Two tablets were taken once a day in the morning, for one month continuously. NOTE Flupenthixol is a antipsychotic drug, and melitracen is a tricyclic antidepressant.
Outcomes	The Hamilton Rating Scale for Depression was used at baseline and four weeks. Data was also available on patients cured, or for whom there was a marked effect.
Notes	

Risk of bias

Item	**Authors' judgement**	**Description**
Adequate sequence generation?	Yes	A random table was used to generate the allocation sequence
Allocation concealment?	Unclear	No response received from author requesting further details on randomisation.
Blinding? All outcomes	No	Participants and the therapist were not blind and it was unclear if the outcome assessor and analyst were blind to study group allocation.
Incomplete outcome data addressed? All outcomes	Yes	No attrition or exclusions reported, no missing data, all participants included in analysis.
Free of selective reporting?	Yes	No protocol available, data was available on study outcomes.
Free of other bias?	Yes	The study appears free of other sources

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Characteristics of excluded studies *[ordered by study ID]*

Agelink 2003	In this trial of depression and anxiety, the study aimed to evaluate the effect of acupuncture on cardiac autonomic nervous system function. Thirty six participants were randomly allocated to acupuncture or sham acupuncture. No clinically meaningful data were reported. Data were reported on cardio-vascular outcomes e.g heart rate variability.
Chang-du 1994	In this trial of trial of acupuncture, participants had experienced a stroke and reported post stroke depression. The depression was diagnosed as per our protocol and did not meet the criteria.Details on randomisation could not be confirmed. participants were allocated into three groups Xingnao acupuncture method, routine acupuncture plus medication (Doxepin) and routine acupuncture.No other details were reported. The outcome measure was unclear.
Gallagher 2002	The population, intervention and study outcomes are as reported in Allen 1998.This study reported on follow up data at 12 months on an earlier trial Allen 1998. We were unable however to obtain data reported separately by group.
He 2007b	Sixty one participants from China were diagnosed with depression using the CCMD. Participants were given acupuncture or Chinese herbal medicine. The control group was administered with Chinese herbs which did not meet our definition of standard care. Details on randomisation were unclear. The outcome measure used the Hamilton Rating Scale for depression.
Huang 2004	Eighty five participants with post stroke depression were recruited in China. Participants were allocated to acupuncture and point injection group, every second day for 12 days. The control group received amitriptyline 25-50mg 2-3 times per day. The outcome assessment used the Hamilton rating scale for depression. The study evaluated point injection therapy with parental solution of breviscapine which did not our criteria for inclusion.
Huang 2005	Ninety inpatients from a hospital in China were recruited to the trial. participants met the DSM-II R diagnostic criteria for depression. participants were randomly allocated to scalp acupuncture or routine acupuncture, administered six days a week for six weeks.The Hamilton Rating Sclae for Depression was used to measure outcomes. This study was excluded due to use of acupuncture as the control group.
Lu 2004	Sixty six participants with depression diagnosed using the CCMD III. participants were inpatients from a hospital in China. participants were randomised to acupuncture plus medication or medication only. Electro-acupuncture was administered five times a week for six weeks. Insufficient details on the dose of medication was reported in the manuscript. We were unable to confirm details from the author after extensive efforts. Outcome assessment used the Hamilton Rating Scale for Depression.
Song 1999	142 participants with a stroke a depression (score >7 on HAMD). Intervention group received scalp acupuncture once a day for 30 days Prozac 0.5mg administered once per day. Outcome measures: HAMD. A sub optimal dose of medication was administered in the control group, 0.5mg once a day. Clarification was sought from the author. No response was received after extensive efforts
Wang 2004	participants had depression following a stroke, and depression was diagnosed using the Hamilton Rating Scale for Depression. participants in the intervention group received acupuncture five times a week for four weeks. participants in the control group received Diazepam 2.5mg once a day, or Clozapine 25mg once a day for four weeks. Neither medication prescribed for the control group was to treat depression. The outcome measure used the Hamilton rating scale for depression.

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(*Continued*)

Wang 2005	Thirty four participants were recruited as inpatients at hospital in Malta. Diagnosis for depression did not meet our criteria. This study compared acupuncture to standard medication for depression. participants received electro-acupuncture twice a week for five weeks. The control group were administered Deanxit, during the first three weeks 2 tablets a day were given, during the last two weeks one tablet a day. No details were available on the dosage. However, we were unable to confirm through correspondence with the author if the study was a randomised controlled trial.
Zhou 2007	Participants with depression associated with the menopause. This trial did not have a clear definition using the HAMD to classify depression. The study also addressed defined a sub category of depression in post-menopausal women, a group not recognised in the West. The intervention consisted of acupuncture given once per day for 6 days a week, for six weeks. The control group received fluoxetine 20mg once per day for six weeks. Outcome measure s used the HAMD.

Characteristics of studies awaiting assessment *[ordered by study ID]*

Tang 2003

Methods	Single blind randomised controlled trial of acupuncture compared with standard medication
Participants	Forty one participants with depression diagnosed using the CCMD-2R
Interventions	Manual acupuncture of four points, treatment administered each day for 20 days. Medication was deanxin and insufficient details were reported on dose
Outcomes	HAMD
Notes	awaiting response from authors for further information on dose

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DATA AND ANALYSES

Comparison 1. Manual acupuncture versus control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reduction in the severity of depression	8		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 Wait list control	2	94	Std. Mean Difference (IV, Random, 95% CI)	-0.73 [-1.18, -0.29]
1.2 Sham acupuncture (invasive)	2	56	Std. Mean Difference (IV, Random, 95% CI)	-0.03 [-1.26, 1.19]
1.3 Non specific acupuncture	2	91	Std. Mean Difference (IV, Random, 95% CI)	-0.34 [-1.61, 0.93]
1.4 Amitriptyline	1	41	Std. Mean Difference (IV, Random, 95% CI)	0.33 [-0.29, 0.94]
1.5 SSRI	3	175	Std. Mean Difference (IV, Random, 95% CI)	-0.02 [-0.33, 0.28]
1.6 Sertraline, venlafaxine/mirtazepine plus acupuncture	1	45	Std. Mean Difference (IV, Random, 95% CI)	-1.06 [-1.69, -0.43]
2 Improvement in depression	9		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Wait list control	2	94	Risk Ratio (M-H, Random, 95% CI)	1.67 [0.77, 3.65]
2.2 Sham acupuncture (invasive)	1	49	Risk Ratio (M-H, Random, 95% CI)	3.67 [1.36, 9.91]
2.3 Non specific acupuncture	2	91	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.17, 6.69]
2.4 Amitriptyline	1	46	Risk Ratio (M-H, Random, 95% CI)	4.36 [0.53, 36.12]
2.5 SSRI	4	361	Risk Ratio (M-H, Random, 95% CI)	1.18 [0.99, 1.40]
2.6 Acupuncture plus mianserin	1	46	Risk Ratio (M-H, Random, 95% CI)	4.36 [0.53, 36.12]
3 Quality of life sleep	1		Mean Difference (IV, Random, 95% CI)	Subtotals only
3.1 Setraline, venlafaxine or mirtazepine	1	45	Mean Difference (IV, Random, 95% CI)	-4.62 [-6.93, -2.31]
4 Quality of life emotional	1		Mean Difference (IV, Random, 95% CI)	Subtotals only
4.1 Manual acupuncture	1	17	Mean Difference (IV, Random, 95% CI)	-5.0 [-36.47, 26.47]
5 Adverse events	1		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
5.1 Manual acupuncture	1	17	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.15, 40.37]

Comparison 2. Electro-acupuncture versus control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reduction in the severity of depression	9		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 Amitriptyline	6	853	Std. Mean Difference (IV, Random, 95% CI)	-0.17 [-0.37, 0.04]
1.2 SSRI	2	117	Std. Mean Difference (IV, Random, 95% CI)	0.07 [-0.38, 0.53]
1.3 Electro-acupuncture plus SSRI	1	42	Std. Mean Difference (IV, Random, 95% CI)	-0.70 [-1.32, -0.07]
2 Improvement in depression	8		Risk Ratio (M-H, Random, 95% CI)	Subtotals only

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2.1 Amitriptyline	5	830	Risk Ratio (M-H, Random, 95% CI)	0.99 [0.90, 1.09]
2.2 SSRI	2	91	Risk Ratio (M-H, Random, 95% CI)	1.16 [0.88, 1.53]
2.3 Electro-acupuncture plus medication	2	77	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.78, 2.35]

Comparison 3. Laser acupuncture versus control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reduction in the severity of depression	1		Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 Sham laser	1	26	Mean Difference (IV, Random, 95% CI)	-7.3 [-12.68, -1.92]
2 Improvement in depression	1		Risk Ratio (M-H, Fixed, 95% CI)	Subtotals only
2.1 Sham laser	1	26	Risk Ratio (M-H, Fixed, 95% CI)	2.0 [0.66, 6.08]

Comparison 4. Manual acupuncture versus control for stroke patients

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reduction in the severity of depression	4		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 Standard care	1	40	Std. Mean Difference (IV, Random, 95% CI)	-1.49 [-2.19, -0.78]
1.2 SSRI	2	232	Std. Mean Difference (IV, Random, 95% CI)	-0.47 [-1.02, 0.09]
1.3 Amitriptyline	1	256	Std. Mean Difference (IV, Random, 95% CI)	-1.15 [-1.44, -0.87]
2 Improvement in depression	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 SSRI	3	294	Risk Ratio (M-H, Random, 95% CI)	1.66 [1.03, 2.68]
2.2 Amitriptyline	2	512	Risk Ratio (M-H, Random, 95% CI)	1.21 [0.92, 1.60]

Comparison 5. Electro-acupuncture versus control for stroke patients

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Reduction in the severity of depression	2		Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 Standard care	1	60	Mean Difference (IV, Random, 95% CI)	-8.0 [-11.06, -4.94]
1.2 SSRI	1	39	Mean Difference (IV, Random, 95% CI)	-4.34 [-6.44, -2.24]
2 Improvement in depression	1		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 SSRI	1	72	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.87, 2.28]
3 Quality of life	1		Mean Difference (IV, Random, 95% CI)	Subtotals only
3.1 Standard care	1	60	Mean Difference (IV, Random, 95% CI)	0.96 [-1.51, 3.43]

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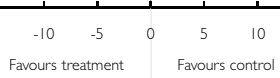
Analysis 1.1. Comparison 1 Manual acupuncture versus control, Outcome 1 Reduction in the severity of depression.

Review: Acupuncture for depression

Comparison: 1 Manual acupuncture versus control

Outcome: 1 Reduction in the severity of depression

Study or subgroup	Favours treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 Wait list control							
Allen 1998	6	-11.7 (7.3)	11	-6.1 (10.9)		34.6 %	-0.54 [-1.56, 0.48]
Allen 2006	25	13.5 (5.5)	52	19 (7.6)		65.4 %	-0.78 [-1.27, -0.28]
Subtotal (95% CI)	**31**		**63**			**100.0 %**	**-0.73 [-1.18, -0.29]**
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.17, df = 1 (P = 0.68); I^2 =0.0%							
Test for overall effect: Z = 3.24 (P = 0.0012)							
2 Sham acupuncture (invasive)							
Fan 2005	14	16.52 (7.13)	25	20.37 (6.29)		64.4 %	-0.57 [-1.24, 0.10]
Whiting 2008	13	21.3 (10.5)	4	13.5 (11.6)		35.6 %	0.69 [-0.46, 1.84]
Subtotal (95% CI)	**27**		**29**			**100.0 %**	**-0.03 [-1.26, 1.19]**
Heterogeneity: Tau^2 = 0.57; Chi^2 = 3.45, df = 1 (P = 0.06); I^2 =71%							
Test for overall effect: Z = 0.05 (P = 0.96)							
3 Non specific acupuncture							
Allen 1998	6	-11.7 (7.3)	11	-2.9 (7.9)		32.7 %	-1.08 [-2.16, -0.01]
Allen 2006	25	13.5 (5.5)	49	11.9 (7.7)		67.3 %	0.22 [-0.26, 0.71]
Subtotal (95% CI)	**31**		**60**			**100.0 %**	**-0.34 [-1.61, 0.93]**
Heterogeneity: Tau^2 = 0.67; Chi^2 = 4.71, df = 1 (P = 0.03); I^2 =79%							
Test for overall effect: Z = 0.52 (P = 0.60)							
4 Amitriptyline							
Xiujuan 1994	20	15.5 (6.74)	21	12.8 (9.27)		100.0 %	0.33 [-0.29, 0.94]
Subtotal (95% CI)	**20**		**21**			**100.0 %**	**0.33 [-0.29, 0.94]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.03 (P = 0.30)							
5 SSRI							
Fan 2005	14	16.52 (7.13)	25	15.48 (6.01)		29.2 %	0.16 [-0.50, 0.81]
Li 2004	49	15.8 (6.1)	25	15.72 (5.84)		35.7 %	0.01 [-0.47, 0.49]
Wenbin 2002	32	7.5 (7.3)	30	8.7 (6.9)		35.1 %	-0.17 [-0.67, 0.33]
Subtotal (95% CI)	**95**		**80**			**100.0 %**	**-0.02 [-0.33, 0.28]**
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.63, df = 2 (P = 0.73); I^2 =0.0%							



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Study or subgroup	Favours treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Test for overall effect: Z = 0.15 (P = 0.88)							
6 Sertraline, venlafaxine/mirtazepine plus acupuncture							
Wang 2006	23	7.96 (3.99)	22	13.05 (5.36)		100.0 %	-1.06 [-1.69, -0.43]
Subtotal (95% CI)	**23**		**22**			**100.0 %**	**-1.06 [-1.69, -0.43]**
Heterogeneity: not applicable							
Test for overall effect: Z = 3.31 (P = 0.00092)							

Analysis 1.2. Comparison 1 Manual acupuncture versus control, Outcome 2 Improvement in depression.

Review: Acupuncture for depression

Comparison: 1 Manual acupuncture versus control

Outcome: 2 Improvement in depression

Study or subgroup	Treatment n/N	Control n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
1 Wait list control					
Allen 1998	3/6	2/11		30.5 %	2.75 [0.62, 12.17]
Allen 2006	6/25	9/52		69.5 %	1.39 [0.55, 3.47]
Subtotal (95% CI)	**31**	**63**		**100.0 %**	**1.67 [0.77, 3.65]**
Total events: 9 (Treatment), 11 (Control)					
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.59, df = 1 (P = 0.44); I^2 =0.0%					
Test for overall effect: Z = 1.29 (P = 0.20)					
2 Sham acupuncture (invasive)					
Eich 2000	11/21	4/28		100.0 %	3.67 [1.36, 9.91]
Subtotal (95% CI)	**21**	**28**		**100.0 %**	**3.67 [1.36, 9.91]**
Total events: 11 (Treatment), 4 (Control)					
Heterogeneity: not applicable					
Test for overall effect: Z = 2.56 (P = 0.010)					
3 Non specific acupuncture					
Allen 1998	2/6	1/11		16.3 %	3.67 [0.41, 32.59]
Allen 2006	5/25	19/49		83.7 %	0.52 [0.22, 1.22]

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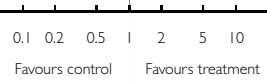
Study or subgroup	Treatment n/N	Control n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
Subtotal (95% CI)	**31**	**60**		**100.0 %**	**1.05 [0.17, 6.69]**
Total events: 7 (Treatment), 20 (Control)					
Heterogeneity: Tau^2 = 1.21; Chi^2 = 2.68, df = 1 (P = 0.10); I^2 =63%					
Test for overall effect: Z = 0.05 (P = 0.96)					
4 Amitriptyline					
Xiujuan 1994	4/22	1/24		100.0 %	4.36 [0.53, 36.12]
Subtotal (95% CI)	**22**	**24**		**100.0 %**	**4.36 [0.53, 36.12]**
Total events: 4 (Treatment), 1 (Control)					
Heterogeneity: not applicable					
Test for overall effect: Z = 1.37 (P = 0.17)					
5 SSRI					
Fan 2005	25/28	22/25		32.1 %	1.01 [0.84, 1.23]
He 2005	57/86	46/86		29.5 %	1.24 [0.97, 1.59]
Li 2004	44/49	16/25		26.5 %	1.40 [1.03, 1.91]
Wenbin 2002	12/32	9/30		11.9 %	1.25 [0.62, 2.53]
Subtotal (95% CI)	**195**	**166**		**100.0 %**	**1.18 [0.99, 1.40]**
Total events: 138 (Treatment), 93 (Control)					
Heterogeneity: Tau^2 = 0.01; Chi^2 = 4.35, df = 3 (P = 0.23); I^2 =31%					
Test for overall effect: Z = 1.82 (P = 0.069)					
6 Acupuncture plus mianserin					
Roschke 2000	4/22	1/24		100.0 %	4.36 [0.53, 36.12]
Subtotal (95% CI)	**22**	**24**		**100.0 %**	**4.36 [0.53, 36.12]**
Total events: 4 (Treatment), 1 (Control)					
Heterogeneity: not applicable					
Test for overall effect: Z = 1.37 (P = 0.17)					



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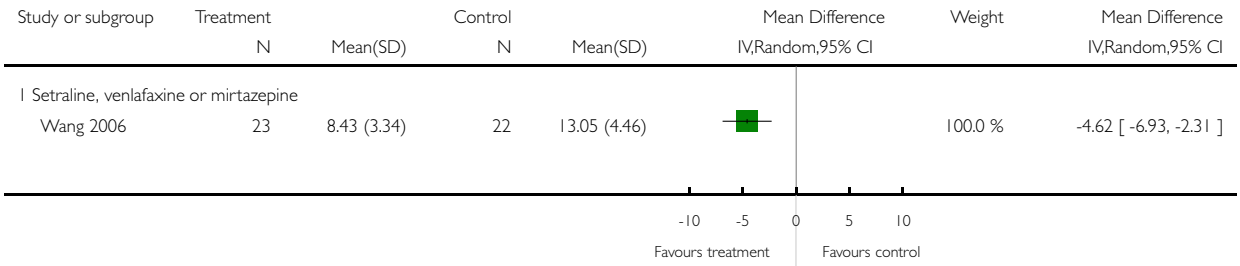
Analysis 1.3. Comparison 1 Manual acupuncture versus control, Outcome 3 Quality of life sleep.

Review: Acupuncture for depression

Comparison: 1 Manual acupuncture versus control

Outcome: 3 Quality of life sleep

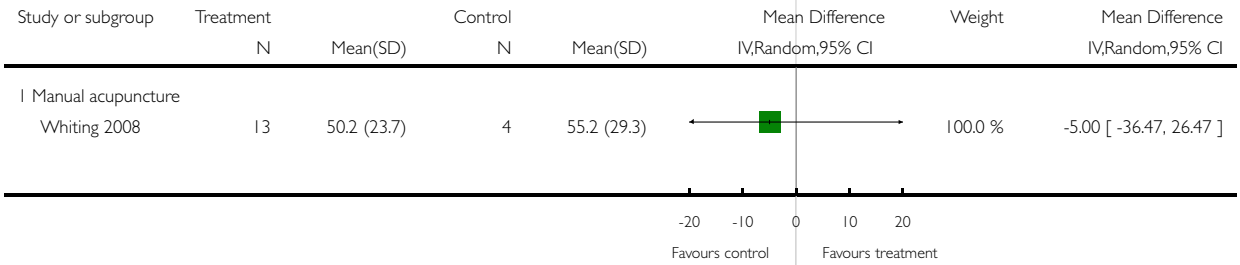


Analysis 1.4. Comparison 1 Manual acupuncture versus control, Outcome 4 Quality of life emotional.

Review: Acupuncture for depression

Comparison: 1 Manual acupuncture versus control

Outcome: 4 Quality of life emotional



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Analysis 1.5. Comparison 1 Manual acupuncture versus control, Outcome 5 Adverse events.

Review: Acupuncture for depression

Comparison: 1 Manual acupuncture versus control

Outcome: 5 Adverse events

Study or subgroup	Treatment n/N	Control n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
1 Manual acupuncture					
Whiting 2008	3/13	0/4		100.0 %	2.50 [0.15, 40.37]

Analysis 2.1. Comparison 2 Electro-acupuncture versus control, Outcome 1 Reduction in the severity of depression.

Review: Acupuncture for depression

Comparison: 2 Electro-acupuncture versus control

Outcome: 1 Reduction in the severity of depression

Study or subgroup	Experimental N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 Amitriptyline							
Khang 2002	26	9.6 (3.3)	26	9.2 (4.3)		12.9 %	0.10 [-0.44, 0.65]
Luo 1985	27	12.8 (10.5)	20	14.2 (8.3)		11.8 %	-0.14 [-0.72, 0.44]
Luo 1988	133	8.3 (8.07)	108	10.4 (11.4)		28.6 %	-0.22 [-0.47, 0.04]
Luo 1998	18	12.3 (2.33)	5	9.9 (2.3)		4.5 %	1.00 [-0.04, 2.04]
Yan 2004	19	12.84 (5.41)	11	14.21 (3.87)		8.0 %	-0.27 [-1.02, 0.48]
Zhang 2003	210	14.3 (3.4)	250	15.3 (3.2)		34.1 %	-0.30 [-0.49, -0.12]
Subtotal (95% CI)	**433**		**420**			**100.0 %**	**-0.17 [-0.37, 0.04]**
Heterogeneity: Tau^2 = 0.02; Chi^2 = 7.47, df = 5 (P = 0.19); I^2 =33%							
Test for overall effect: Z = 1.59 (P = 0.11)							
2 SSRI							
Han 2002	30	11.73 (6.13)	31	9.89 (6)		51.7 %	0.30 [-0.21, 0.80]

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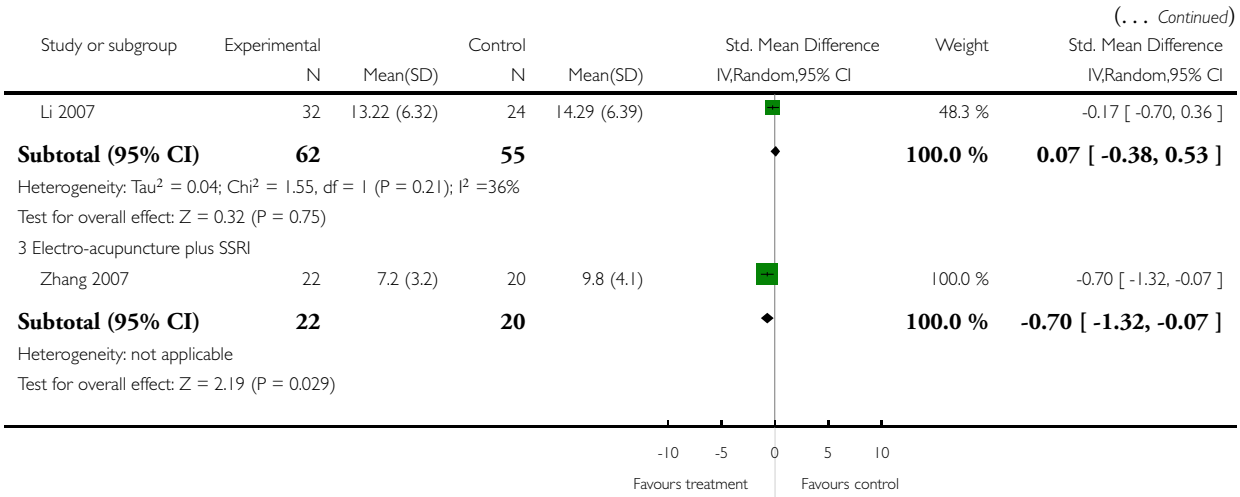
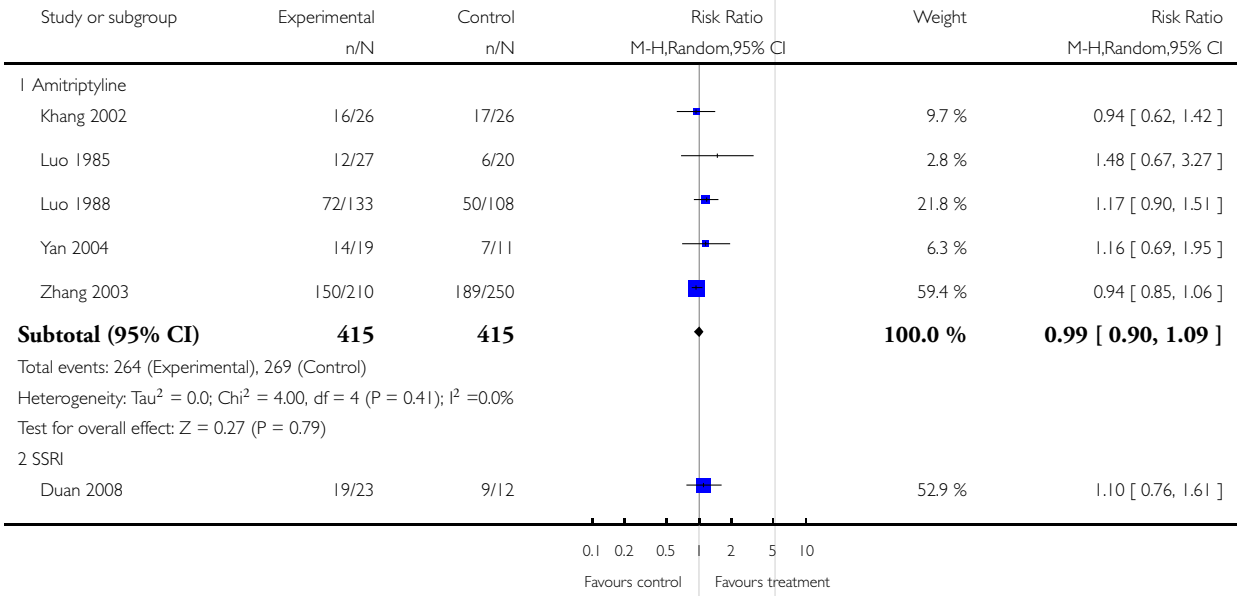


Analysis 2.2. Comparison 2 Electro-acupuncture versus control, Outcome 2 Improvement in depression.

Review: Acupuncture for depression

Comparison: 2 Electro-acupuncture versus control

Outcome: 2 Improvement in depression



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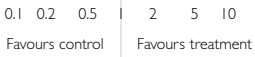
Study or subgroup	Experimental n/N	Control n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
Li 2007	23/32	14/24		47.1 %	1.23 [0.82, 1.84]
Subtotal (95% CI)	**55**	**36**		**100.0 %**	**1.16 [0.88, 1.53]**
Total events: 42 (Experimental), 23 (Control)					
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.17, df = 1 (P = 0.68); I^2 =0.0%					
Test for overall effect: Z = 1.06 (P = 0.29)					
3 Electro-acupuncture plus medication					
Duan 2008	22/24	9/11		77.1 %	1.12 [0.83, 1.52]
Zhang 2007	16/22	8/20		22.9 %	1.82 [1.00, 3.30]
Subtotal (95% CI)	**46**	**31**		**100.0 %**	**1.36 [0.78, 2.35]**
Total events: 38 (Experimental), 17 (Control)					
Heterogeneity: Tau^2 = 0.11; Chi^2 = 2.84, df = 1 (P = 0.09); I^2 =65%					
Test for overall effect: Z = 1.09 (P = 0.28)					



Analysis 3.1. Comparison 3 Laser acupuncture versus control, Outcome 1 Reduction in the severity of depression.

Review: Acupuncture for depression

Comparison: 3 Laser acupuncture versus control

Outcome: 1 Reduction in the severity of depression

Study or subgroup	Experimental N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Sham laser							
Quah Smith 2005	14	6.8 (5.2)	12	14.1 (8.2)		100.0 %	-7.30 [-12.68, -1.92]

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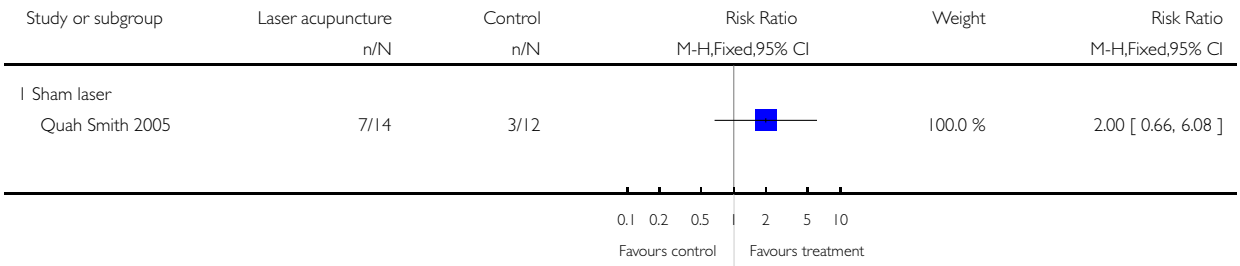
Analysis 3.2. Comparison 3 Laser acupuncture versus control, Outcome 2 Improvement in depression.

Review: Acupuncture for depression

Comparison: 3 Laser acupuncture versus control

Outcome: 2 Improvement in depression

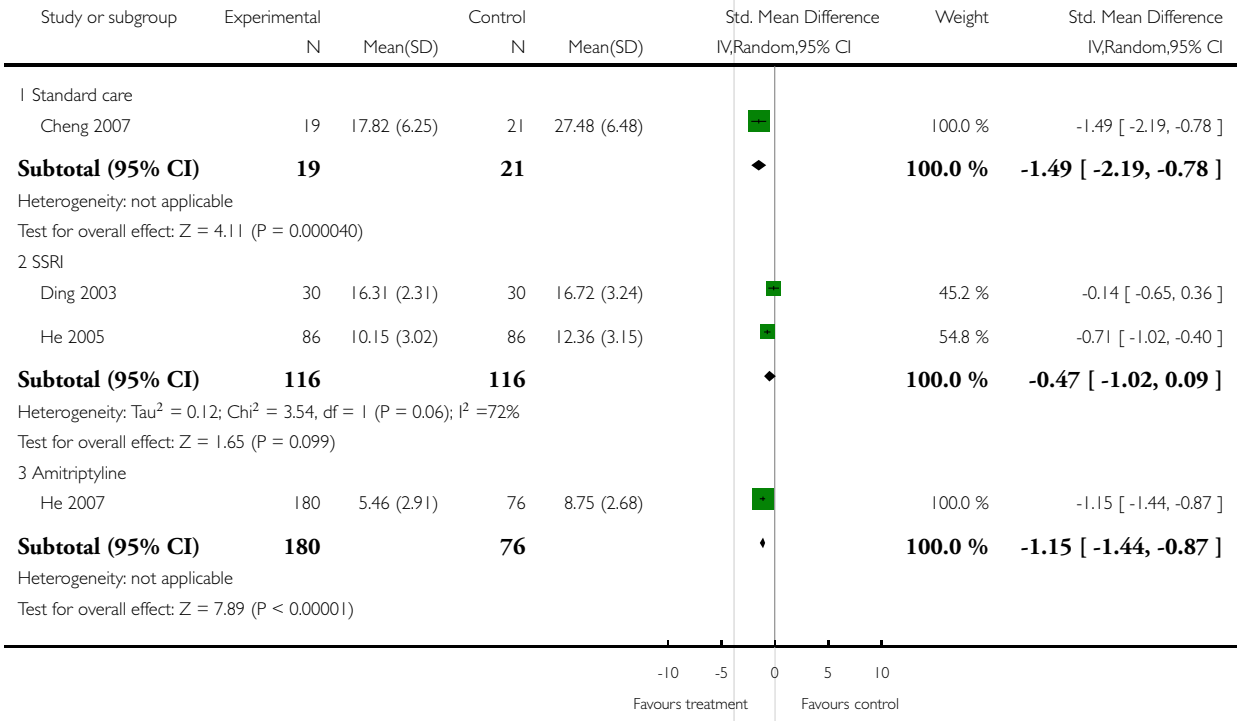


Analysis 4.1. Comparison 4 Manual acupuncture versus control for stroke patients, Outcome 1 Reduction in the severity of depression.

Review: Acupuncture for depression

Comparison: 4 Manual acupuncture versus control for stroke patients

Outcome: 1 Reduction in the severity of depression



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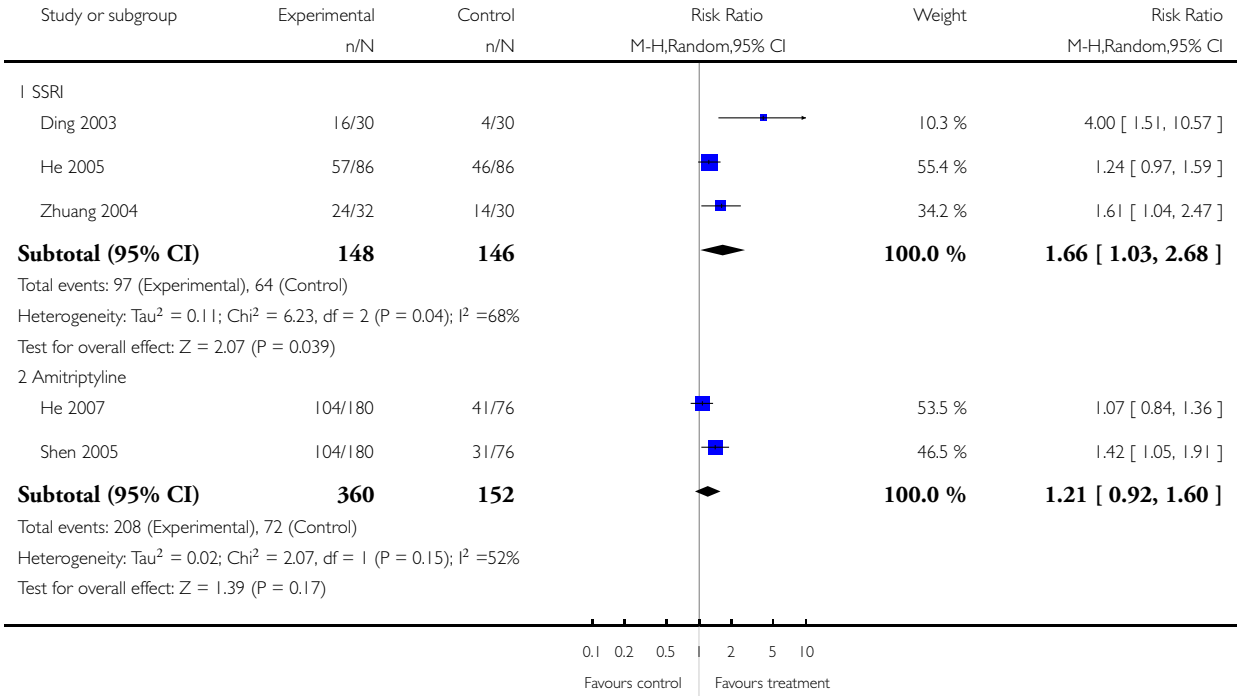
Analysis 4.2. Comparison 4 Manual acupuncture versus control for stroke patients, Outcome 2 Improvement in depression.

Review: Acupuncture for depression

Comparison: 4 Manual acupuncture versus control for stroke patients

Outcome: 2 Improvement in depression



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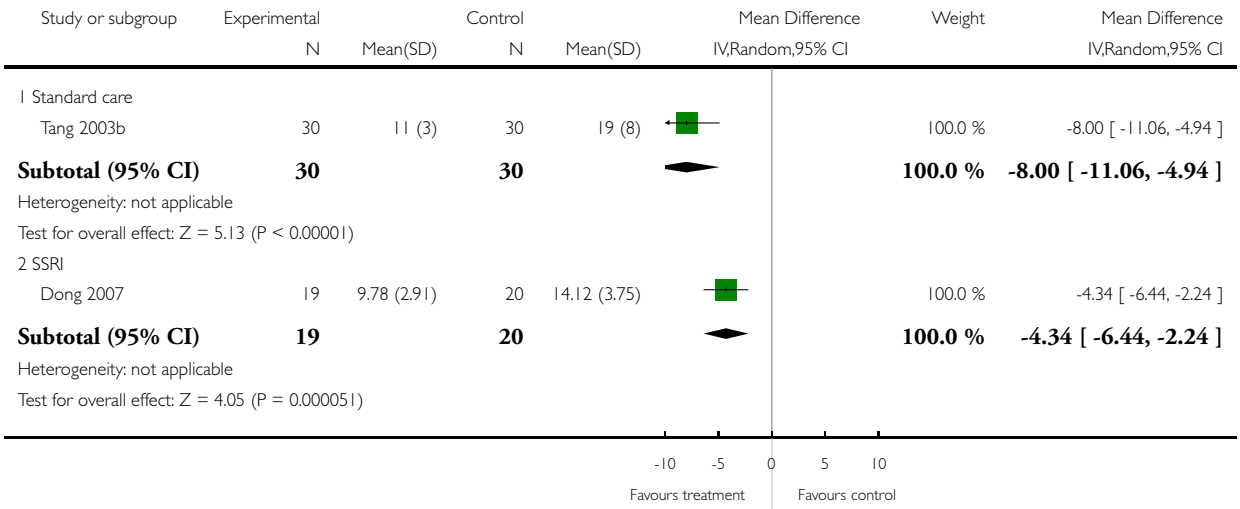
Analysis 5.1. Comparison 5 Electro-acupuncture versus control for stroke patients, Outcome 1 Reduction in the severity of depression.

Review: Acupuncture for depression

Comparison: 5 Electro-acupuncture versus control for stroke patients

Outcome: 1 Reduction in the severity of depression

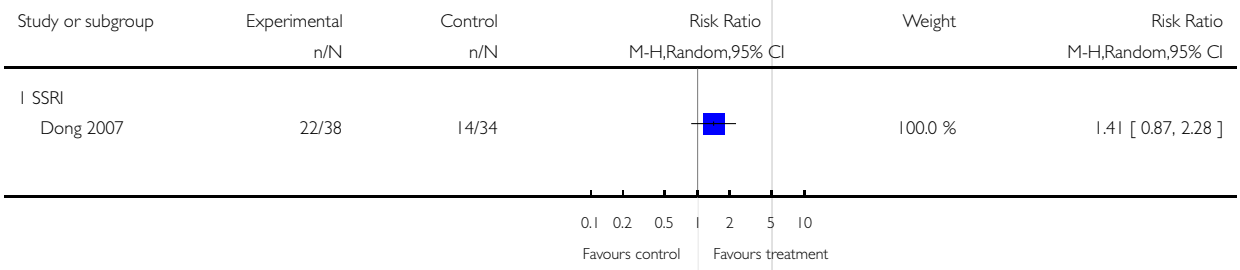


Analysis 5.2. Comparison 5 Electro-acupuncture versus control for stroke patients, Outcome 2 Improvement in depression.

Review: Acupuncture for depression

Comparison: 5 Electro-acupuncture versus control for stroke patients

Outcome: 2 Improvement in depression



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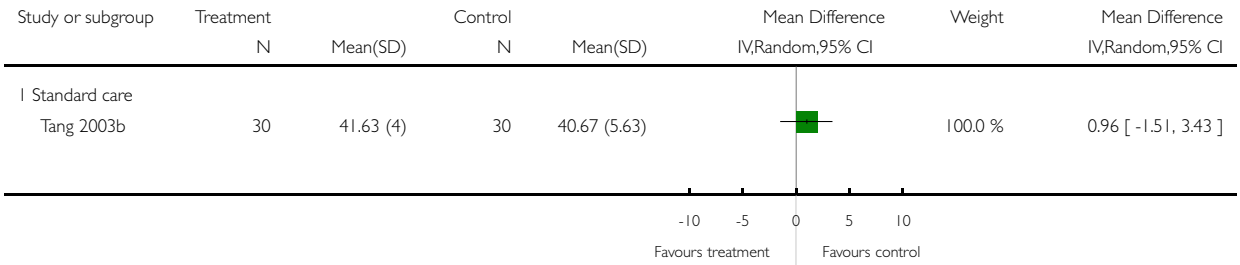
Analysis 5.3. Comparison 5 Electro-acupuncture versus control for stroke patients, Outcome 3 Quality of life.

Review: Acupuncture for depression

Comparison: 5 Electro-acupuncture versus control for stroke patients

Outcome: 3 Quality of life



APPENDICES

Appendix 1. Appendix 1 Risk of Bias

Criteria for judging risk of bias in the Risk of bias assessment tool

SEQUENCE GENERATION

Was the allocation sequence adequately generated?

Criteria for a judgment of 'YES' (i.e. low risk of bias).

The investigators describe a random component in the sequence generation process such as:

- Referring to a random number table;
- Using a computer random number generator;
- Coin tossing;
- Shuffling cards or envelopes;
- Throwing dice;
- Drawing of lots;

*Minimization may be implemented without a random element, and this is considered to be equivalent to being random.

Criteria for the judgment of 'NO' (i.e. high risk of bias).

The investigators describe a non-random component in the sequence generation process. Usually, the description would involve some systematic, non random approach, for example: sequence generated by odd or even date of birth; sequence generated by some rule based on date (or day) of admission; sequence generated by some rule based on hospital or clinic record number. Other non-random approaches happen much less frequently than the systematic approaches mentioned above and tend to be obvious. They usually involve judgement or some method of non-random categorization of participants, for example:

- Allocation by judgment of the clinician
- Allocation by preference of the participant
- Allocation based on the results of a laboratory or a series of tests
- Allocation by availability of the intervention.

Criteria for the judgement of "UNCLEAR" (uncertain risk of boas)

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Insufficient information about the sequence generation process to permit judgement "Yes" or "No".

ALLOCATION CONCEALMENT

Was allocation adequately concealed? (Short form: Allocation concealment?).

Criteria for a judgment of 'YES' (i.e. low risk of bias).

Participants and investigators enrolling participants could not foresee assignment because one of the following, or an equivalent method, was used to conceal allocation:

- Central allocation (including telephone, web-based, and pharmacy controlled randomisation;
- Sequentially numbered drug containers of identical appearance;
- Sequentially numbered, opaque, sealed envelopes.

Criteria for the judgment of 'NO' (i.e. high risk of bias).

Participants or investigators enrolling participants could possibly foresee assignments and thus introduce selection bias, such as allocation based on:

- Using an open random allocation schedule (e.g. a list of random numbers);
- Assignment envelopes were used without appropriate safeguards (e.g. if envelopes were unsealed or non opaque or not sequentially numbered);
- Alternation or rotation;
- Date of birth;
- Case record number;
- Any other explicitly unconcealed procedure

Criteria for the judgment of "UNCLEAR" (uncertain risk of bias)

Insufficient information about the sequence generation process to permit judgement "Yes" or "No". This is usually the case if the method of concealment is not described or not described in sufficient detail to allow a definitive judgement, for example if the use of assignment envelopes is described, but it remains unclear whether envelopes were \sequentially numbered, opaque and sealed.

BLINDING OF PARTICIPANTS, PERSONNEL AND OUTCOME ASSESSORS

Was knowledge of the allocated interventions adequately prevented during the study? (Short form: Blinding).

Criteria for a judgement of 'YES' (i.e. low risk of bias).

Anyone of the following:

- No blinding, but the review authors judge that the outcome and the outcome measurement are not likely to be influenced by lack of blinding;
- Blinding of participants and key study personnel ensured, and unlikely that the blinding could have been broken;
- Either participants and key study personnel were not blinded, but outcome assessment was blinded and the non-blinding of others unlikely to introduce bias.

Criteria for the judgment of 'NO' (i.e. high risk of bias).

Any one of the following:

- No blinding or incomplete blinding, and the outcome or outcome measurement is likely to be influenced by lack of blinding;
- Blinding of key study participants and personnel attempted, but likely that the blinding could have been broken;
- Either participants or some key study personnel were not blinded, and the non blinding or others likely to introduce bias.

Criteria for the judgment of "UNCLEAR" (uncertain risk of bias)

Any one of the following:

- Insufficient information to permit judgment of "yes" or "No";
- The study did not address this outcome.

INCOMPLETE OUTCOME DATA

Were incomplete outcome data adequately addressed? (Short form: Incomplete outcome data addressed?).

Criteria for a judgment of 'YES' (i.e. low risk of bias).

Anyone of the following:

- No missing data;
- Reasons for missing outcome data unlikely to be related to true outcome (for survival data, censoring unlikely to be introducing bias);
- Missing outcome data balanced in numbers across intervention groups, with similar reasons for missing data across groups;
- For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk not enough to have clinically relevant impact on the intervention effect estimate;

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- For continuous outcome data, plausible effect size (difference in means or standardized difference in means) among missing outcomes not enough to have a clinically relevant impact on observed effect size;
- Missing data have been imputed using appropriate methods.

Criteria for the judgment of 'NO' (i.e. high risk of bias).
Any one of the following:
- Reason for missing outcome data likely to be related to true outcome, with either imbalance in numbers or reasons for missing data across intervention groups;
- For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk enough to induce clinically relevant bias in the intervention effect estimate;
- For continuous outcome data, plausible effect size (difference in means or standardised difference in means) among missing outcomes enough to have a clinically relevant impact on observed effect size;
- "As treated" analysis done with substantial departure of the intervention received from that assigned at randomisation;
- Potentially inappropriate application of simple imputation.

Criteria for the judgment of "UNCLEAR" (uncertain risk of bias)
Any one of the following:
- Insufficient reporting of attrition/exclusions to permit judgement of "Yes" or "No" (e.g. number randomised not stated, no reasons for missing data provided);
- The study did not address this outcome.

SELECTIVE OUTCOME REPORTING
Are reports of the study free of suggestion of selective outcome reporting? (Short form: Free of selective reporting?).
Criteria for a judgment of 'YES' (i.e. low risk of bias).
Anyone of the following:
- The study protocol is available and all the study's pre-specifies (primary and secondary) outcomes that are of interest in the review have been reported in the pre-specified way;
- The study protocol is not available but it is clear that the published reports include all expected outcomes, including those that were pre-specified (convincing test of this nature may be uncommon);

Criteria for the judgment of 'NO' (i.e. high risk of bias).
Any one of the following:
- Not all of the study's pre-specified primary outcomes have been reported;
- One or more primary outcomes is reported using measurements, analysis methods or subsets of the data (subscales) that were not pre-specified;
- One or more reported primary outcomes were not pre-specified (unless clear justification for their reporting is provided, such as an unexpected adverse effect);
- One or more outcomes of interest in the review are reported incompletely so that they cannot be entered be entered in a meta-analysis;
- The study report fails to include results for a key outcome that would be expected to have been reported for such a study.

Criteria for the judgment of "UNCLEAR" (uncertain risk of bias)
Insufficient information to permit judgment of "yes" or "No". It is likely that the majority of studies will fall into this category.
OTHER POTENTIAL THREATS TO VALIDITY
Was the study apparently free of other problems that could put it at a risk of bias? (Short form: Free of other bias?).
Criteria for a judgment of 'YES' (i.e. low risk of bias).
The study appears free of other sources of bias.
Criteria for the judgment of 'NO' (i.e. high risk of bias).
There is at least one important risk of bias. For example, the study:
- Had a potential source of bias related to the specific design used; or
- Stopped early due to some data-dependent process (including a formal-stopping rule); or
- Had extreme baseline imbalance; or
- Has been claimed to have been fraudulent; or
- Had some other problem.

Criteria for the judgment of "UNCLEAR" (uncertain risk of bias)

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There may be a risk of bias, but there is either:

- Insuffiecient information to assess whether an important risk of bias exists; or
- Insufficent rationale or evidence that an identified problem will introduce bias.

WHAT'S NEW

Last assessed as up-to-date: 30 November 2008.

26 April 2009	New citation required and conclusions have changed	Undertook new search and updated review

HISTORY

Protocol first published: Issue 1, 2003

Review first published: Issue 2, 2005

1 November 2008	Amended	Converted to new review format
24 February 2005	Amended	Minor update
17 March 2004	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Caroline Smith conceptualised and took the lead in writing the protocol and review, performed initial searches of databases for trials, was involved in selecting trials for inclusion, performed data extraction and quality assessment of the included trials, was responsible for statistical analysis and interpretation of the data.

Phillipa Hay was involved with selecting trials for inclusion, performed data extraction and quality assessment of the included trials, interpretation of the data and commented on drafts of the protocol and review.

Hugh MacPherson performed data extraction and quality assessment of the included review, assisted with interpretation of data and commented on drafts of the updated review.

DECLARATIONS OF INTEREST

None known.

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DIFFERENCES BETWEEN PROTOCOL AND REVIEW

A random effects model was used to pool the results of all studies, because this model is more conservative than fixed effects model and incorporates both within-study and between-study variance. This decision was a change from the original protocol.

INDEX TERMS

Medical Subject Headings (MeSH)

*Acupuncture Therapy [methods]; Antidepressive Agents [therapeutic use]; Depression [drug therapy; *therapy]; Randomized Controlled Trials as Topic

MeSH check words

Female; Humans; Male

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