EBM Journal reading: Dysmenorrhea and Acupuncture

BY R2 侯耀華

指導主治 陳星諭醫師

Outline

- Background: Dysmenorrhea
- EBM methods:
  - Ask (PICO)
  - Acquire (Searching)
  - Appraisal (Criticize)
  - Apply (Integrate)
  - Audit (Evaluate)
- Discussion
- Conclusion

Dysmenorrhea

- **Primary** dysmenorrhea refers to recurrent, crampy lower abdominal pain that occurs during menstruation in the absence of pelvic pathology. It is the most common gynecologic complaint among adolescent females.
- **Secondary** dysmenorrhea refers to painful menstruation in the presence of pelvic pathology. It is more common among women in the fourth and fifth decades of life.

Mechanisms of Primary Dysmenorrhea

- Dysmenorrhea appears to be caused by excess production of PGF2 alpha or an elevated PGF2 alpha:PGE2 ratio.
  - These compounds can cause dysrhythmic uterine contractions, hypercontractility, and increased uterine muscle tone leading to uterine ischemia.
- They also can account for nausea, vomiting, and diarrhea via stimulation of the gastrointestinal tract.

痛經中醫診斷要點

- 實證:氣滯血瘀，寒凝胞中，溼熱下注。
  - 衝任、胞宮氣血運行不暢-> 不通則痛。
- 虛證:氣血虛弱，或肝腎虧虛。
  - 衝任、胞宮失於濡養-> 不榮而痛。
- 性質
  - 寒:絞痛；小腹熱敷、吃高卡路里食物減輕為寒。
  - 熱:灼痛；熱敷、吃高卡路里食物加劇為熱。
- 病位
  - 氣:脹多於痛。
  - 血:痛多於脹，刺痛，血塊出而痛減輕者。

KNOWN OF PRIMARY DYSMENORRHEA

- 1. Occurs in up to 50% of menstruating females, and causes absenteeism and a significant disruption in the quality of life.
- 2. Primary dysmenorrhea is a crampy, suprapubic pain that begins between several hours before and a few hours after the onset of menstrual bleeding.
- 3. Dysmenorrhea is commonly treated with NSAIDs, prostaglandin antagonists, and anti-spasmodic drugs.
- 4. Acupuncture is recommended as a safe treatment that has a low risk for serious side effects and has long been indicated for dysmenorrhea in China.

5 Steps to practice EBM (5A)

- 1. Formulate an answerable question. (Ask: PICO)PICO
  - 由個案的臨床資料形成可回答的臨床問題
- 2. Track down the best evidence. (Acquire)
  - 尋找最佳的實證〔各種文獻及資料庫，包括發表及未發表的資料〕
- 3. Critically appraise the evidence for validity, impact, and applicability. (Appraisal)
  - 評估各種醫學報告的可信度、臨床重要性，及可應用性
- 4. Integrate with our clinical expertise and patient values. (Apply)
  - 整合並應用於實際患者的治療決策〔臨床應用〕
- 5. Evaluate our effectiveness and efficacy. (Audit)
  - [效果評估] 以病人可以聽懂的語言，告知各種處置之可能利益與風險？

PICO

- Patient
- Intervention
- Comparison
- Outcome

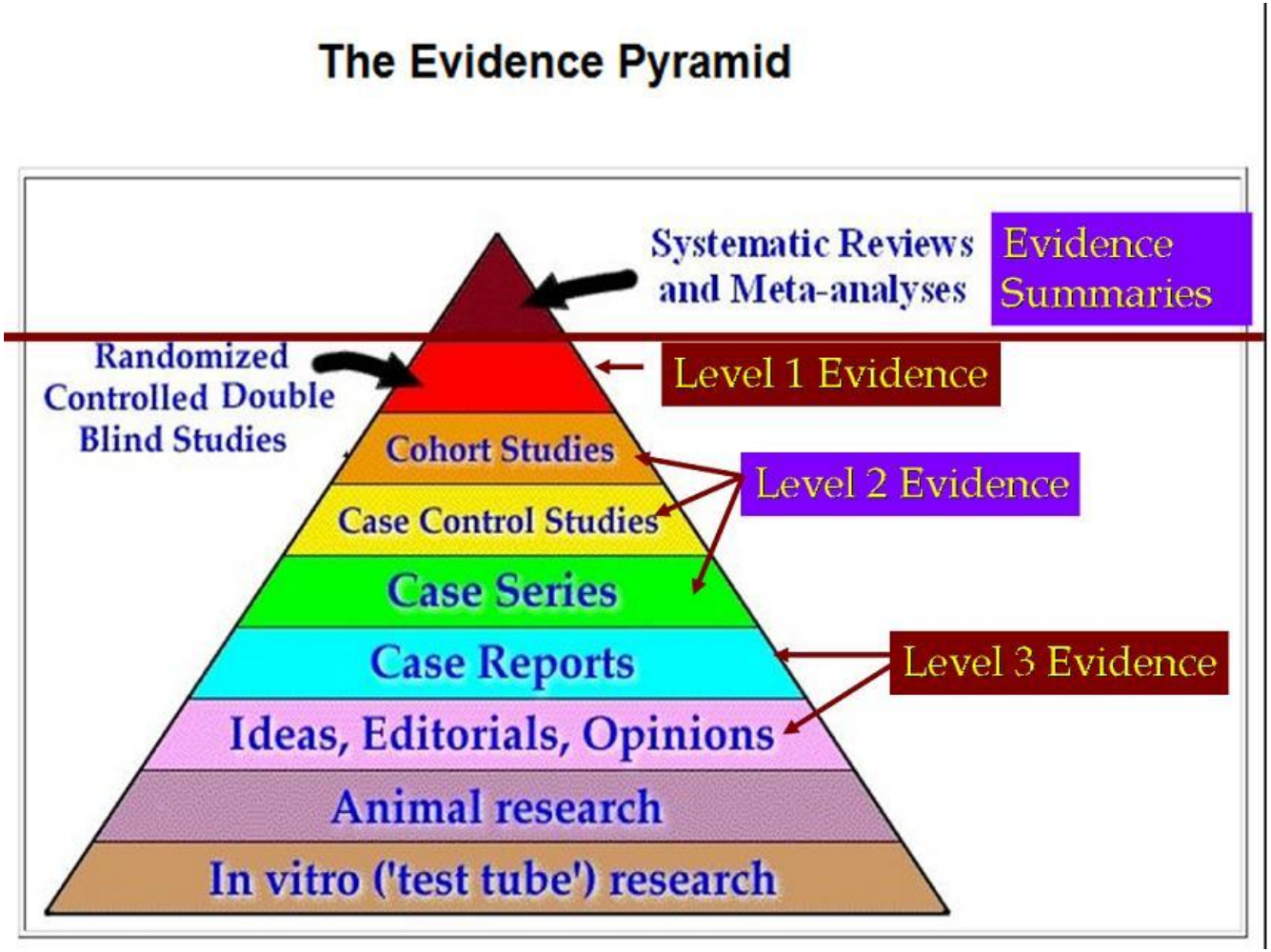
Question

- 針灸對於「原發性」痛經是否有效?

PICO

- Patient
  - Reproductive age women with primary dysmenorrhea
- Intervention
  - Acupuncture
- Comparison
  - Western medicine / Placebo
- Outcome
  - Efficacy

Evidence level



http://ls.qmedkf.org.in/e

Searching

- 1. Medline, PudMed
- 2. Systemic review

KEYWORDS

- Dysmenorrhoea and acupuncture (therapy)
  - "dysmenorrhoea"[All Fields] AND "acupuncture"[All Fields] OR "acupuncture therapy"[MeSH Terms]

=197 articles

KEYWORDS

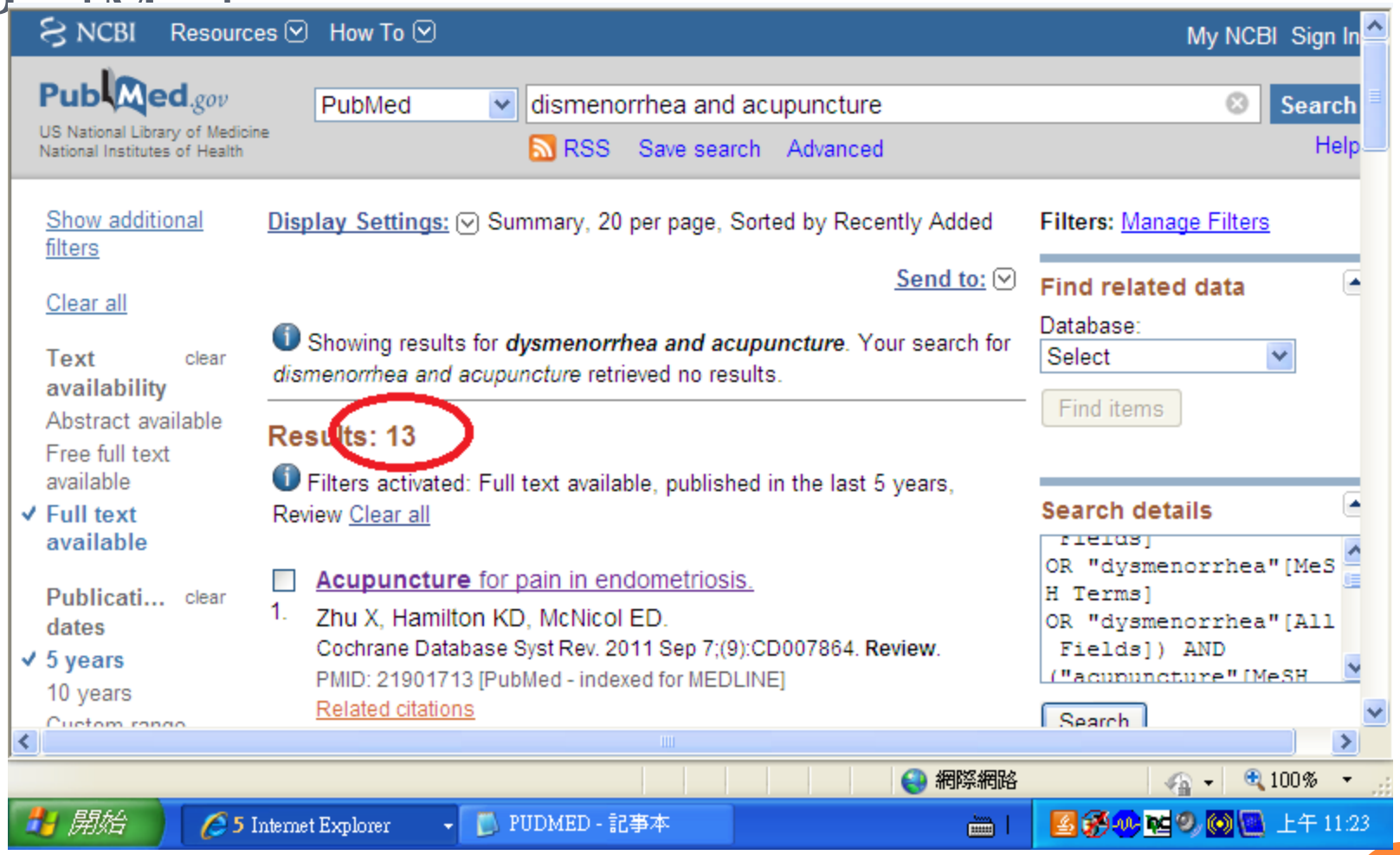
- Limitation: review system, full text, in 5 years, ("loattrfull text"[sb] AND "2007/09/21"[PDat] : "2012/09/18“[PDat] AND Review[ptyp])

  + review = 27 articles (5+ full text)

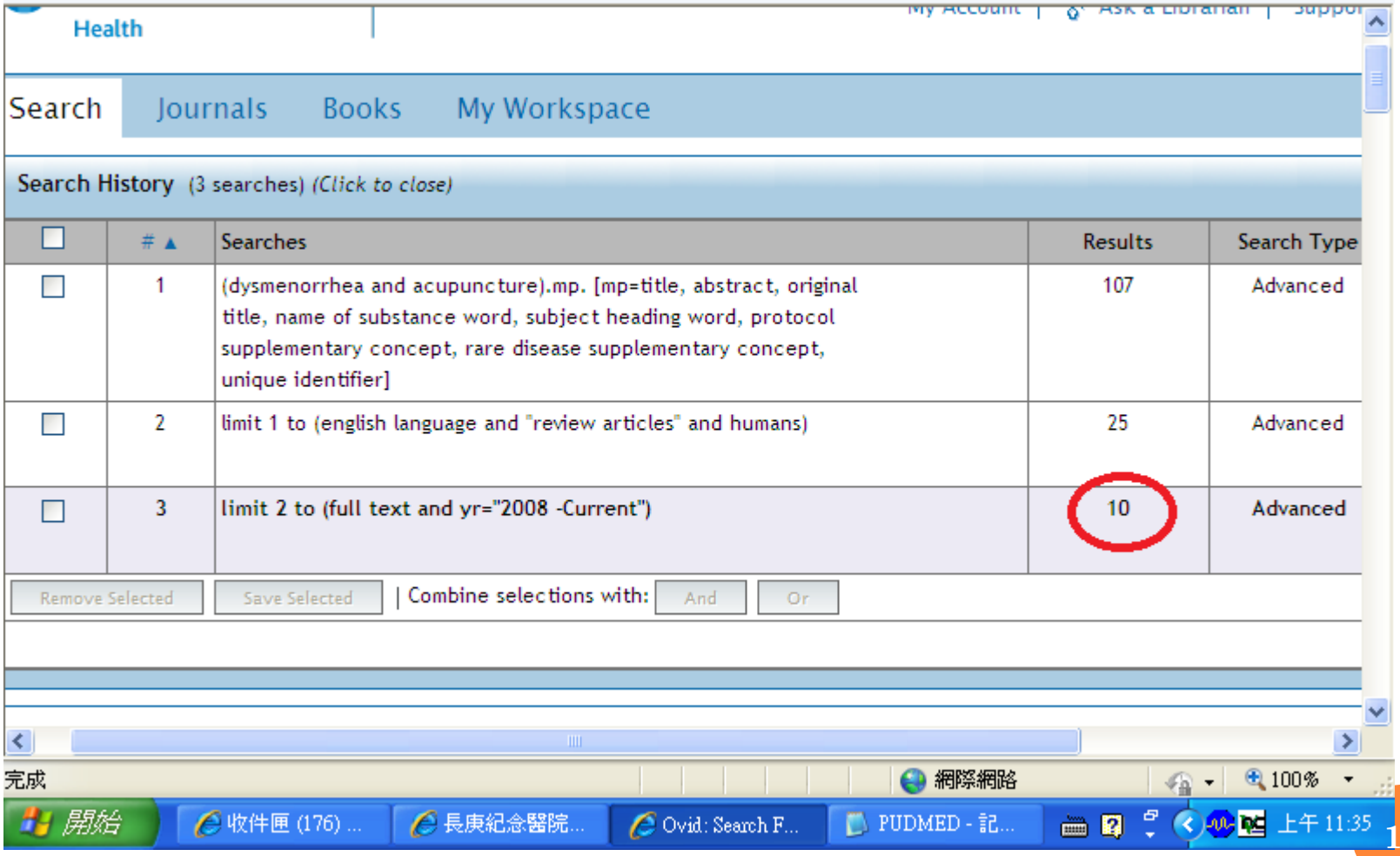
  + full text available = 19

  + 5 years = 13

P


NCBI Resources How To
My NCBI Sign In
PubMed.gov
US National Library of Medicine
National Institutes of Health
PubMed
dismenorrhea and acupuncture
Search
RSS Save search Advanced
Help
Show additional filters
Clear all
Text availability clear
Abstract available
Free full text available
Full text available
Publicati... clear dates
5 years
10 years
Display Settings: Summary, 20 per page, Sorted by Recently Added
Send to:
Showing results for dysmenorrhea and acupuncture. Your search for dismenorrhea and acupuncture retrieved no results.
Results: 13
Filters activated: Full text available, published in the last 5 years, Review Clear all
Acupuncture for pain in endometriosis.
1. Zhu X, Hamilton KD, McNicol ED.
Cochrane Database Syst Rev. 2011 Sep 7;(9):CD007864. Review.
PMID: 21901713 [PubMed - indexed for MEDLINE]
Related citations
Filters: Manage Filters
Find related data
Database:
Select
Find items
Search details
OR "dysmenorrhea"[MeSH Terms]
OR "dysmenorrhea"[All Fields]) AND
Search
網際網路
100%
開始
Internet Explorer
PUDMED - 記事本
上午 11:23

MEDLINE


Health
Search
Journals
Books
My Workspace
Search History (3 searches) (Click to close)
▲
Searches
Results
Search Type
1
(dysmenorrhea and acupuncture).mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier]
107
Advanced
2
limit 1 to (english language and "review articles" and humans)
25
Advanced
3
limit 2 to (full text and yr="2008 -Current")
10
Advanced
Remove Selected
Save Selected
Combine selections with:
And
Or
完成
網際網路
100%
開始
收件匣 (176) ...
長庚紀念醫院...
Ovid: Search F...
PUDMED - 記...
上午 11:35

MEDLINE


View Abstract
My Projects
4. Acupuncture for primary dysmenorrhoea. [Review]
Smith CA. Zhu X. He L. Song J.
Cochrane Database of Systematic Reviews. (1):CD007854, 2011.
[Journal Article. Meta-Analysis. Review]
UI: 21249697
--
Authors Full Name
Smith, Caroline A. Zhu, Xiaoshu. He, Lin. Song, Jing.
View Abstract
My Projects
5. Acupuncture to treat common reproductive health complaints: An overview of the evidence. [Review]
Smith CA. Carmady B.
Ovid Full Te
Abstract Re
Complete R
Find Similar
Find Citing A
Library Holc
Document D
Internet Res
Abstract Re
Complete R
網際網路
100%
開始
Internet Explorer
PUDMED - 記事本
上午 11:37

MEDLINE


7. A survey of acupuncture treatment for primary dysmenorrhea. [Review] [26 refs]
Zhao L. Li P.
Journal of Traditional Chinese Medicine. 29(1):71-6, 2009 Mar.
[Evaluation Studies. Journal Article. Research Support, Non-U.S. Gov't. Review]
UI: 19514193
--
Authors Full Name
Zhao, Li. Li, Pei.
+ My Projects
Complete R
Find Similar
Find Citing A
Full Text
Library Holc
Document D
Internet Res
8. Systematic review of clinical trials of acupuncture-related therapies for primary dysmenorrhea. [Review] [44 refs]
Yang H. Liu CZ. Chen X. Ma LX. Xie JP. Guo NN. Ma ZB. Zheng YY. Zhu J. Liu JP.
Acta Obstetricia et Gynecologica Scandinavica. 87(11):1114-22, 2008.
[Journal Article. Research Support, Non-U.S. Gov't. Review]
Abstract Re
Complete R
Find Similar
網際網路
100%
開始
Internet Explorer
PUDMED - 記事本
上午 11:39

MEDLINE


Zhao, Li. Li, Pei.
My Projects
8. Systematic review of clinical trials of acupuncture-related therapies for primary dysmenorrhea. [Review] [44 refs]
Yang H. Liu CZ. Chen X. Ma LX. Xie JP. Guo NN. Ma ZB. Zheng YY. Zhu J. Liu JP.
Acta Obstetricia et Gynecologica Scandinavica. 87(11):1114-22, 2008.
[Journal Article. Research Support, Non-U.S. Gov't. Review]
UI: 18951224
--
Authors Full Name
Yang, Huan. Liu, Cun-Zhi. Chen, Xu. Ma, Liang-Xiao. Xie, Jie-Ping. Guo, Nan-Nan. Ma, Zeng-Bin. Zheng, Yuan-Yuan. Zhu, Jiang. Liu, Jian-Ping.
View Abstract
My Projects
9. Chinese herbal medicine for primary dysmenorrhoea. [Review] [99 refs][Update of Cochrane Database Syst Rev. 2007;(4):CD005288; PMID: 17943847]
Abstract Re
Complete R
Find Similar
Find Citing A
Full Text
Library Holc
Document D
EBM Full Te:
Internet Res
Ovid Full Te
Abstract Re
網際網路
100%
開始
Internet Explorer
PUDMED - 記事本
上午 11:40

Review Papers

- 1. **Smith CA, Zhu X, He L, Song J, Acupuncture for dysmenorrhoea (Review),** Australia, 2012.
  - **Review content assessed as up-to-date:** 12 August 2010.
- S-H Cho, E-W Hwang, Acupuncture for primary dysmenorrhoea: a systematic review, 2010, Korea.
  - up to July 2008
- HUAN YANG, CUN-ZHI LIU, etc, Systematic review of clinical trials of acupuncture-related therapies for primary dysmenorrhea, Beijing, China, 2008.
  - Data collected up to 2006

Review Papers

- 2006

Abstract

Background. Acupuncture-related therapies might be an effective intervention for primary dysmenorrhea. *Objective.* To evaluate the effects of acupuncture-related therapies for treating primary dysmenorrhea. *Search Strategy.* A specified literature search was performed of the Cochrane Library, MEDLINE, EMBASE, CNKI, and CBM databases. *Selection criteria.* All clinical controlled trials pertaining to acupuncture-related therapies for primary dysmenorrhea were included, and the quality of the trials was assessed. *Data collection and analysis.* Two independent reviewers were responsible for data extraction and assessment. The original data of each trial were analyzed with software (Revman 4.2), but a meta-analysis could not be carried out because of the heterogeneity of the trials. *Main Results.* Thirty randomized controlled trails (RCTs) and two controlled clinical trials (CCTs) were identified. Most of the trials were of low methodologic quality (six trials were Grade B and 26 trials were Grade C). Data analysis indicated that there were conflicting results regarding whether acupuncture-related therapies were more effective than control treatments. However, there was a small, methodologic sound trial of acupuncture which suggested that acupuncture was more effective than control groups (placebo acupuncture: WMD = −0.57 and 95% CI = −0.76–0.38; standard control: WMD = −0.19 and 95% CI = −0.37–0.01; visitation control: WMD = −1.04 and 95% CI = −1.28–0.80). *Conclusions.* Because of low methodologic quality and small sample size, there is no convincing evidence for acupuncture in the treatment of primary dysmenorrhea. There is an urgent need for randomized, blinded, placebo-controlled trials to assess the effects of acupuncture.

Review Papers

- 2008

Main results Twenty-seven RCTs were systematically reviewed. Only nine of the 27 trials clearly described their methods of randomisation and none of the trials stated the methods of allocation concealment. Compared with pharmacological treatment or herbal medicine, acupuncture was associated with a significant reduction in pain. Three studies reported reduced pain within groups from baseline; however, two RCTs did not find a significant difference between acupuncture and sham acupuncture.

Author's conclusions The review found promising evidence in the form of RCTs for the use of acupuncture in the treatment of primary dysmenorrhoea compared with pharmacological treatment or herbal medicine. However, the results were limited by methodological flaws. The evidence for the effectiveness of acupuncture for the treatment of primary dysmenorrhoea is not convincing compared with sham acupuncture. Further rigorous nonpenetrating placebo-controlled RCTs are warranted.

Review Paper 1

- By **by JohnWiley & Sons, Ltd.**Published on 2012
- **Review content assessed as up-to-date:** 12 August 2010.

Acupuncture for dysmenorrhoea (Review)

Smith CA, Zhu X, He L, Song J

This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2012, Issue 2

http://www.thecochranelibrary.com

Appraisal (VIP)

- Validity 研究方法評析判斷結果之可信度
  - CAT (clinical appraisal tool)
- Importance 結果差異的重要性及對臨床意義
  - RRR (relative risk reduction)
  - NNT (number needed to treat)
- Practicability 可否用來解決當前病患問題
  - 我們的病人與研究中的病人是否非常不同，以致無法應用在研究結果?
  - 這個治療適用於我們的診療環境嗎？病患的配合度如何？醫療提供者的配合度及能力如何？

http://www.cebm.net/index.aspx?o=115

VALIDITY

- SYSTEMATIC REVIEW: Are the results of the review valid?
- 1.

What question (PICO) did the systematic review address?	
What is best?	Where do I find the information?
The main question being addressed should be clearly stated. The exposure, such as a therapy or diagnostic test, and the outcome(s) of interest will often be expressed in terms of a simple relationship.	The Title, Abstract or final paragraph of the Introduction should clearly state the question. If you still cannot ascertain what the focused question is after reading these sections, search for another paper!
This paper: Yes □ No □ Unclear □ Comment:	

THIS PAPER: YES

ABSTRACT

Background

This review examined the currently available evidence supporting the use of acupuncture to treat primary dysmenorrhoea.

Objectives

To determine the efficacy and safety of acupuncture in the treatment of primary dysmenorrhoea when compared with a placebo, no treatment, or conventional medical treatment (for example oral contraceptives and non-steroidal anti-inflammatory medication (NSAIDs)).

Search methods

The following databases were searched (from inception until March 2010): the Cochrane Menstrual Disorders and Subfertillity Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*), PubMed, CINAHL, PsycINFO, Chinese Biomedical Literature Database (CBM), Chinese Medical Current Content (CMCC), China National Knowledge Infrastructure (CNKI), VIP database, Dissertation Abstracts International, BIOSIS, AMED (The Allied and Complementary Medicine Database), Acubriefs, and Acubase.

Selection criteria

Inclusion criteria included all published and unpublished randomised controlled trials comparing acupuncture with placebo control, usual care, and pharmacological treatment. The following modes of treatment were included: acupuncture, electro-acupuncture, and acupressure. Participants were women of reproductive age with primary dysmenorrhoea during the majority of the menstrual cycles or for three consecutive menstrual cycles, and moderate to severe symptoms.

Data collection and analysis

Is it unlikely that important, relevant studies were missed?

F - Is it unlikely that important, relevant studies were missed?	
What is best?	Where do I find the information?
The starting point for comprehensive search for all relevant studies is the major bibliographic databases (e.g., Medline, Cochrane, EMBASE, etc) but should also include a search of reference lists from relevant studies, and contact with experts, particularly to inquire about unpublished studies. The search should not be limited to English language only. The search strategy should include both MESH terms and text words.	The Methods section should describe the search strategy, including the terms used, in some detail. The Results section will outline the number of titles and abstracts reviewed, the number of full-text studies retrieved, and the number of studies excluded together with the reasons for exclusion. This information may be presented in a figure or flow chart.
This paper: Yes □ No □ Unclear □ Comment:	

THIS PAPER: YES

Objectives

To determine the efficacy and safety of acupuncture in the treatment of primary dysmenorrhoea when compared with a placebo, no treatment, or conventional medical treatment (for example oral contraceptives and non-steroidal anti-inflammatory medication (NSAIDs)).

Search methods

The following databases were searched (from inception until March 2010): the Cochrane Menstrual Disorders and Subfertillity Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*), PubMed, CINAHL, PsycINFO, Chinese Biomedical Literature Database (CBM), Chinese Medical Current Content (CMCC), China National Knowledge Infrastructure (CNKI), VIP database, Dissertation Abstracts International, BIOSIS, AMED (The Allied and Complementary Medicine Database), Acubriefs, and Acubase.

Selection criteria

Inclusion criteria included all published and unpublished randomised controlled trials comparing acupuncture with placebo control, usual care, and pharmacological treatment. The following modes of treatment were included: acupuncture, electro-acupuncture, and acupressure. Participants were women of reproductive age with primary dysmenorrhoea during the majority of the menstrual cycles or for three consecutive menstrual cycles, and moderate to severe symptoms.

Were the criteria used to select articles for inclusion appropriate?

A - Were the criteria used to select articles for inclusion appropriate?	
What is best?	Where do I find the information?
The inclusion or exclusion of studies in a systematic review should be clearly defined a priori. The eligibility criteria used should specify the patients, interventions or exposures and outcomes of interest. In many cases the type of study design will also be a key component of the eligibility criteria.	The Methods section should describe in detail the inclusion and exclusion criteria. Normally, this will include the study design.
This paper: Yes □ No □ Unclear □ Comment:	

THIS PAPER: YES

Search methods

The following databases were searched (from inception until March 2010): the Cochrane Menstrual Disorders and Subfertillity Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*), PubMed, CINAHL, PsycINFO, Chinese Biomedical Literature Database (CBM), Chinese Medical Current Content (CMCC), China National Knowledge Infrastructure (CNKI), VIP database, Dissertation Abstracts International, BIOSIS, AMED (The Allied and Complementary Medicine Database), Acubriefs, and Acubase.

Selection criteria

Inclusion criteria included all published and unpublished randomised controlled trials comparing acupuncture with placebo control, usual care, and pharmacological treatment. The following modes of treatment were included: acupuncture, electro-acupuncture, and acupressure. Participants were women of reproductive age with primary dysmenorrhoea during the majority of the menstrual cycles or for three consecutive menstrual cycles, and moderate to severe symptoms.

Data collection and analysis

Meta-analyses were performed using odds ratios (OR) for dichotomous outcomes and mean differences or standard mean differences (SMD) for continuous outcomes, with 95% confidence intervals (CI). Primary outcomes were pain relief and improved menstrual symptoms, measured by self-rating scales. Other outcomes included use of analgesics, quality of life, and absence from school or work.

Were the included studies sufficiently valid for the type of question asked?

A - Were the included studies sufficiently valid for the type of question asked?	
What is best?	Where do I find the information?
The article should describe how the quality of each study was assessed using predetermined quality criteria appropriate to the type of clinical question (e.g., randomization, blinding and completeness of follow-up)	The Methods section should describe the assessment of quality and the criteria used. The Results section should provide information on the quality of the individual studies.
This paper: Yes □ No □ Unclear □ Comment:	

THIS PAPER: YES

Search methods

The following databases were searched (from inception until March 2010): the Cochrane Menstrual Disorders and Subfertillity Group Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*), PubMed, CINAHL, PsycINFO, Chinese Biomedical Literature Database (CBM), Chinese Medical Current Content (CMCC), China National Knowledge Infrastructure (CNKI), VIP database, Dissertation Abstracts International, BIOSIS, AMED (The Allied and Complementary Medicine Database), Acubriefs, and Acubase.

Selection criteria

Inclusion criteria included all published and unpublished randomised controlled trials comparing acupuncture with placebo control, usual care, and pharmacological treatment. The following modes of treatment were included: acupuncture, electro-acupuncture, and acupressure. Participants were women of reproductive age with primary dysmenorrhoea during the majority of the menstrual cycles or for three consecutive menstrual cycles, and moderate to severe symptoms.

Data collection and analysis

Meta-analyses were performed using odds ratios (OR) for dichotomous outcomes and mean differences or standard mean differences (SMD) for continuous outcomes, with 95% confidence intervals (CI). Primary outcomes were pain relief and improved menstrual symptoms, measured by self-rating scales. Other outcomes included use of analgesics, quality of life, and absence from school or work.

Were the results similar from study to study?

T - Were the results similar from study to study?	
What is best?	Where do I find the information?
Ideally, the results of the different studies should be similar or homogeneous. If heterogeneity exists the authors may estimate whether the differences are significant (chi-square test). Possible reasons for the heterogeneity should be explored.	The Results section should state whether the results are heterogeneous and discuss possible reasons. The forest plot should show the results of the chi-square test for heterogeneity and if discuss reasons for heterogeneity, if present.

THIS PAPER: YES

Assessment of heterogeneity

We identified and measured heterogeneity by visually inspecting the overlaps of the CIs for the results of individual studies. If there was poor overlap, this was suggestive of statistical heterogeneity and we included a more formal Chi^2 test. A low P value (or a large Chi^2 statistic relative to its degree of freedom) provided evidence of heterogeneity of intervention effects (variation in effect estimates beyond chance).

We measured inconsistency across trials in the meta-analysis using the I^2 statistic. This describes the percentage of total variation across studies that is due to heterogeneity rather than chance (Higgins 2008). The interpretation of the I^2 statistic was as follows:

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

Assessment of reporting biases

We planned to investigate potential biases of publication using the funnel plot or other analytical method (Egger 1997).

RESULTS

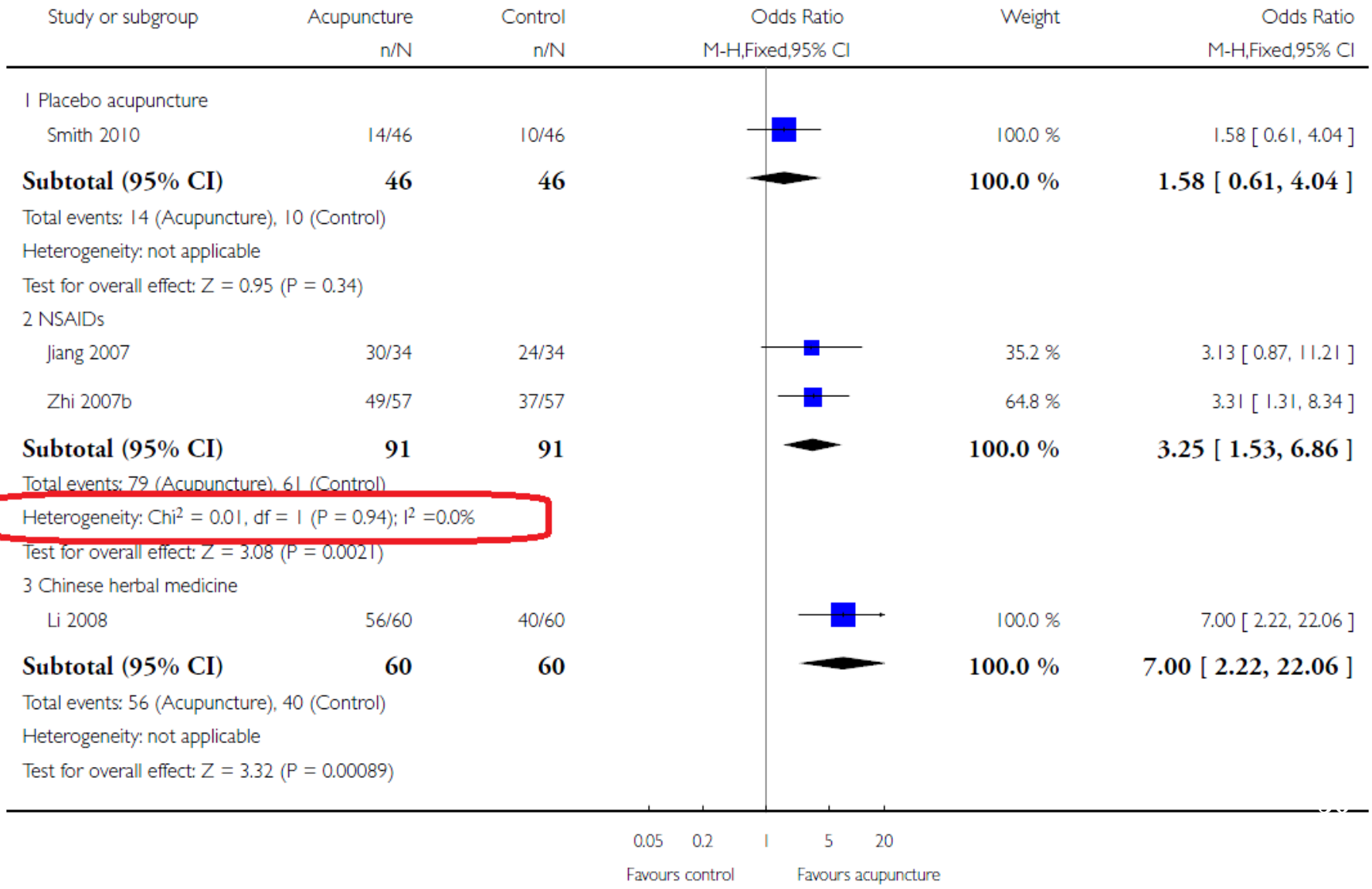
Description of studies

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

See Characteristics of included studies, Characteristics of excluded studies, Characteristics of ongoing studies, and Characteristics of studies awaiting classification.

Results of the search

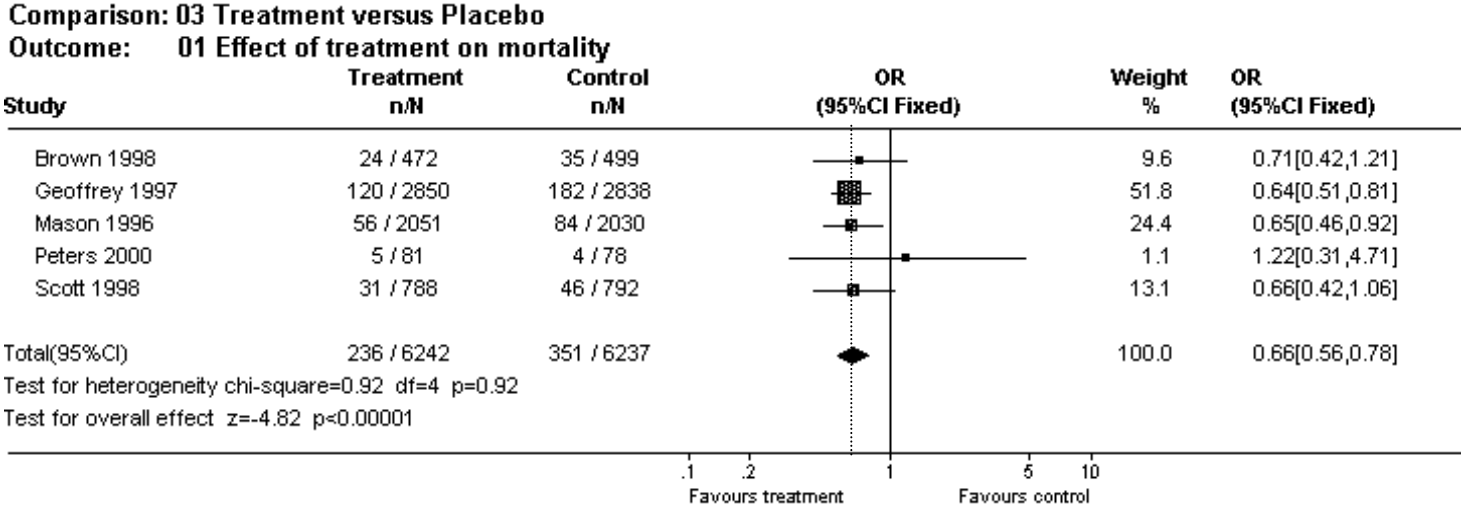
The original review included TENS and acupuncture (one trial). This updated review includes acupuncture and acupressure trials only: 10 trials (1025 women) were included and 24 excluded. See Characteristics of included studies, Characteristics of excluded studies, Characteristics of studies awaiting classification, and Characteristics of ongoing studies.


Study or subgroup
Acupuncture n/N
Control n/N
Odds Ratio M-H,Fixed,95% CI
Weight
Odds Ratio M-H,Fixed,95% CI
1 Placebo acupuncture
Smith 2010 14/46 10/46 100.0 % 1.58 [0.61, 4.04]
Subtotal (95% CI) 46 46 100.0 % 1.58 [0.61, 4.04]
Total events: 14 (Acupuncture), 10 (Control)
Heterogeneity: not applicable
Test for overall effect: Z = 0.95 (P = 0.34)
2 NSAIDs
Jiang 2007 30/34 24/34 35.2 % 3.13 [0.87, 11.21]
Zhi 2007b 49/57 37/57 64.8 % 3.31 [1.31, 8.34]
Subtotal (95% CI) 91 91 100.0 % 3.25 [1.53, 6.86]
Total events: 79 (Acupuncture), 61 (Control)
Heterogeneity: Chi² = 0.01, df = 1 (P = 0.94); I² =0.0%
Test for overall effect: Z = 3.08 (P = 0.0021)
3 Chinese herbal medicine
Li 2008 56/60 40/60 100.0 % 7.00 [2.22, 22.06]
Subtotal (95% CI) 60 60 100.0 % 7.00 [2.22, 22.06]
Total events: 56 (Acupuncture), 40 (Control)
Heterogeneity: not applicable
Test for overall effect: Z = 3.32 (P = 0.00089)
0.05 0.2 1 5 20
Favours control
Favours acupuncture

How are the results presented?

How are the results presented?

A systematic review provides a summary of the data from the results of a number of individual studies. If the results of the individual studies are similar, a statistical method (called meta-analysis) is used to combine the results from the individual studies and an overall summary estimate is calculated. The meta-analysis gives weighted values to each of the individual studies according to their size. The individual results of the studies need to be expressed in a standard way, such as relative risk, odds ratio or mean difference between the groups. Results are traditionally displayed in a figure, like the one below, called a forest plot.



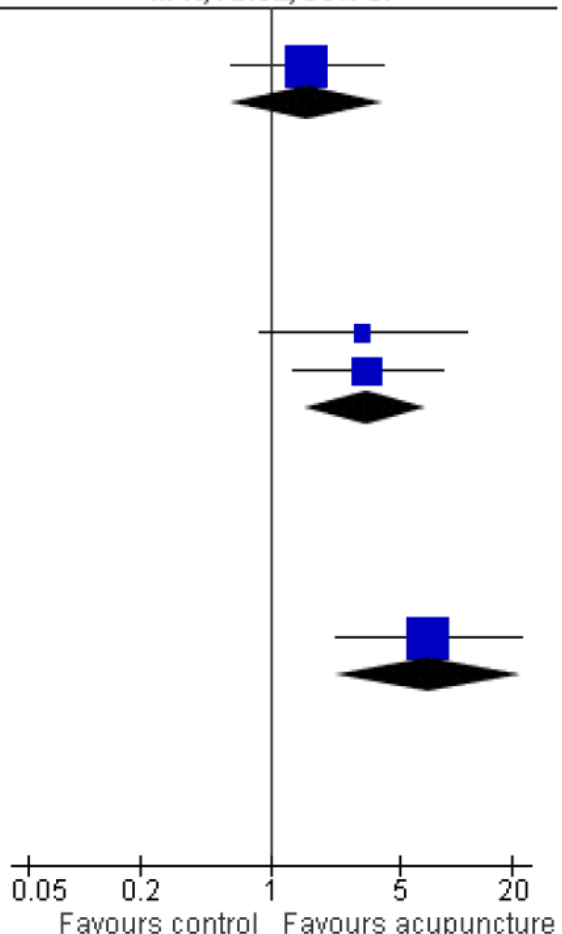
IMPORTANCE(IMPACT)

- ARR (absolute risk reduction)：絕對風險比率差（風險比率差異之絕對值），實驗組和控制組產生不同結果比率之間的差異，其算法為：ARR = |EER-CER|
- RRR (relative risk reduction)：相對風險比率差，實驗組和對照組間產生的風險比率所降低的相對百分比。其算法為：RRR = |EER-CER|/CER
- Number needed to treat (NNT = 1/ARR)：需要被治療的病人數目，絕對風險比率差異值的倒數（1/ARR），即使一位病人達到實驗組治療之有益結果（或預防產生一個不良結果）所需治療的病人數目。

Improvement in symptoms short term

Figure 4. Forest plot of comparison: 1 Acupuncture versus control, outcome: 1.2 Improvement in symptoms short term.

Study or Subgroup	Acupuncture Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Fixed, 95% CI
1.2.1 Placebo acupuncture						
Smith 2010	14	46	10	46	100.0%	1.57 [0.61, 4.04]
Subtotal (95% CI)		**46**		**46**	**100.0%**	**1.57 [0.61, 4.04]**
Total events	14		10			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.95 (P = 0.34)						
1.2.2 NSAIDs						
Jiang 2007	30	34	24	34	35.2%	3.13 [0.87, 11.21]
Zhi 2007b	49	57	37	57	64.8%	3.31 [1.31, 8.34]
Subtotal (95% CI)		**91**		**91**	**100.0%**	**3.25 [1.53, 6.86]**
Total events	79		61			
Heterogeneity: $Chi^2 = 0.01$, df = 1 (P = 0.94); $I^2 = 0\%$						
Test for overall effect: Z = 3.08 (P = 0.002)						
1.2.3 Chinese herbal medicine						
Li 2008	56	60	40	60	100.0%	7.00 [2.22, 22.06]
Subtotal (95% CI)		**60**		**60**	**100.0%**	**7.00 [2.22, 22.06]**
Total events	56		40			
Heterogeneity: Not applicable						
Test for overall effect: Z = 3.32 (P = 0.0009)						



IMPORTANCE

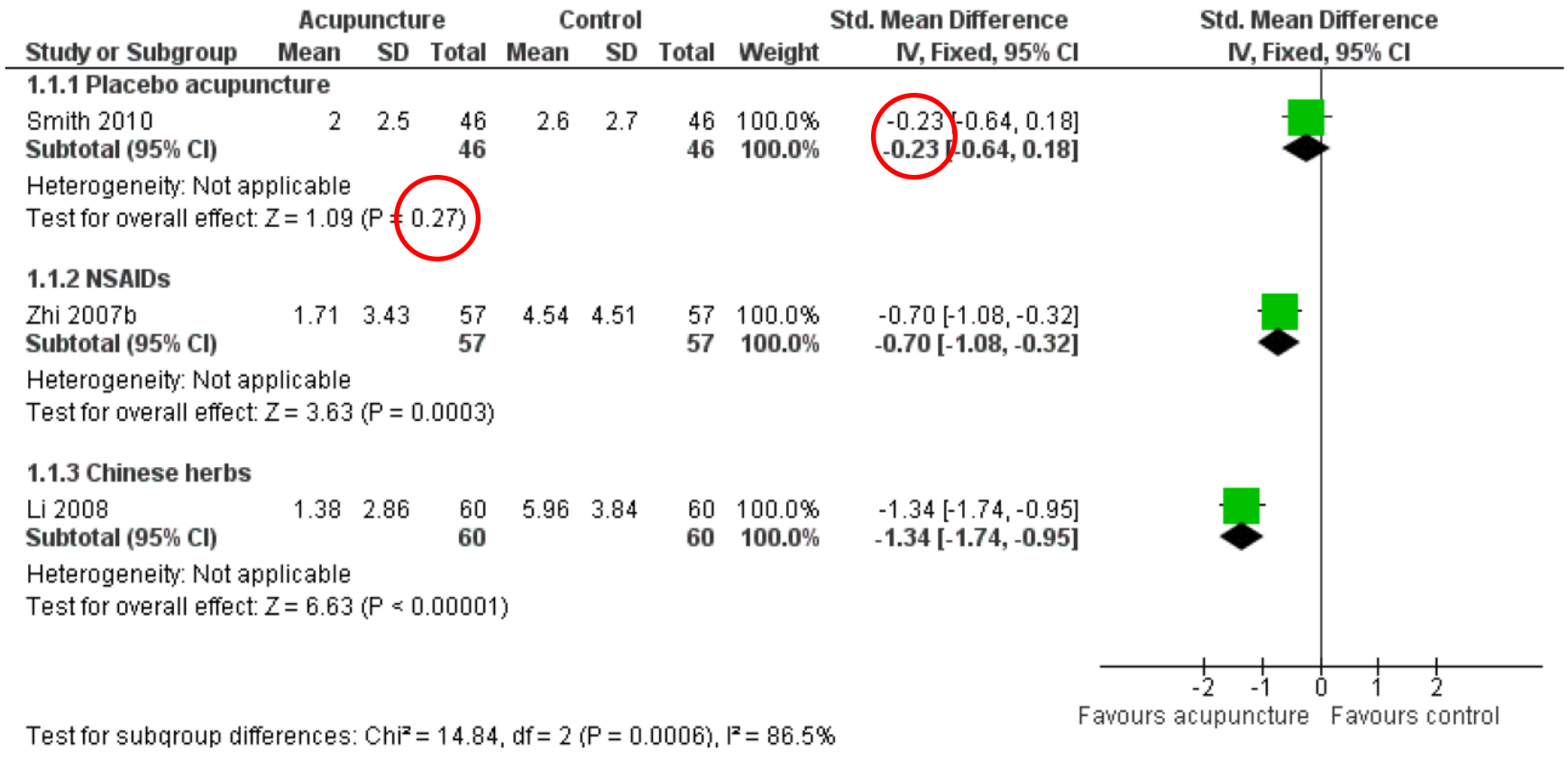
- V.S Placebo for symptomatic relief
  - RR(M-H, Fixed, 95% CI)=1.58 [0.61, 4.04]
  - NNT(M-H, Fixed, 95%CI)=11.5
- V.S NSAID for symptomatic relief
  - RR(M-H, Fixed, 95% CI)=**3.25 [1.53, 6.86]**
  - NNT(M-H, Fixed, 95%CI)=**5.06**
- V.S Herb for symptomatic relief
  - RR(M-H, Fixed, 95% CI)= **7.00 [2.22, 22.06]**
  - NNT(M-H, Fixed, 95%CI)=**3.75**

RESULT

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Pain relief short term	3		Std. Mean Difference (IV, Fixed, 95% CI)	Subtotals only
1.1 Placebo acupuncture	1	92	Std. Mean Difference (IV, Fixed, 95% CI)	-0.23 [-0.64, 0.18]
1.2 NSAIDs	1	114	Std. Mean Difference (IV, Fixed, 95% CI)	-0.70 [-1.08, -0.32]
1.3 Chinese herbs	1	120	Std. Mean Difference (IV, Fixed, 95% CI)	-1.34 [-1.74, -0.95]
2 Improvement in symptoms short term	4		Odds Ratio (M-H, Fixed, 95% CI)	Subtotals only
2.1 Placebo acupuncture	1	92	Odds Ratio (M-H, Fixed, 95% CI)	1.58 [0.61, 4.04]
2.2 NSAIDs	2	182	Odds Ratio (M-H, Fixed, 95% CI)	3.25 [1.53, 6.86]
2.3 Chinese herbal medicine	1	120	Odds Ratio (M-H, Fixed, 95% CI)	7.00 [2.22, 22.06]
3 Use of analgesics short term	1		Odds Ratio (M-H, Fixed, 95% CI)	Subtotals only
3.1 Placebo acupuncture	1	92	Odds Ratio (M-H, Fixed, 95% CI)	0.91 [0.40, 2.09]
4 Pain intensity	1	117	Mean Difference (IV, Fixed, 95% CI)	-2.09 [-2.99, -1.19]
5 Restricted activities	1		Odds Ratio (M-H, Fixed, 95% CI)	Subtotals only
5.1 Placebo acupuncture	1	92	Odds Ratio (M-H, Fixed, 95% CI)	0.72 [0.29, 1.81]
6 Absence from work of school	1		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
6.1 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	0.06 [-0.54, 0.66]
7 SF36 physical component short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
7.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	-2.90 [-6.33, 0.53]
7.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	5.57 [2.68, 8.46]
8 SF36 Mental health short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
8.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	4.40 [-3.59, 12.39]
8.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	10.49 [3.63, 17.35]
9 SF36 Bodily Pain Short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
9.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	-7.5 [-16.71, 1.71]
9.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	20.10 [9.90, 30.30]
10 SF36 General health short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
10.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	2.30 [-6.98, 11.58]
10.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	6.38 [-0.26, 13.02]
11 SF36 Vitality short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
11.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	2.20 [-6.98, 11.38]
11.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	18.12 [11.52, 24.72]
12 SF36 Social function short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
12.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	-0.5 [-9.53, 8.53]
12.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	20.27 [11.52, 29.02]
13 SF36 Role emotional short term	2		Mean Difference (IV, Fixed, 95% CI)	Subtotals only
13.1 Placebo acupuncture	1	92	Mean Difference (IV, Fixed, 95% CI)	0.0 [-14.11, 14.11]
13.2 Usual care	1	117	Mean Difference (IV, Fixed, 95% CI)	14.16 [1.29, 27.03]
14 Adverse events	1		Odds Ratio (M-H, Fixed, 95% CI)	Subtotals only
14.1 Usual care	1	117	Odds Ratio (M-H, Fixed, 95% CI)	0.27 [0.05, 1.34]

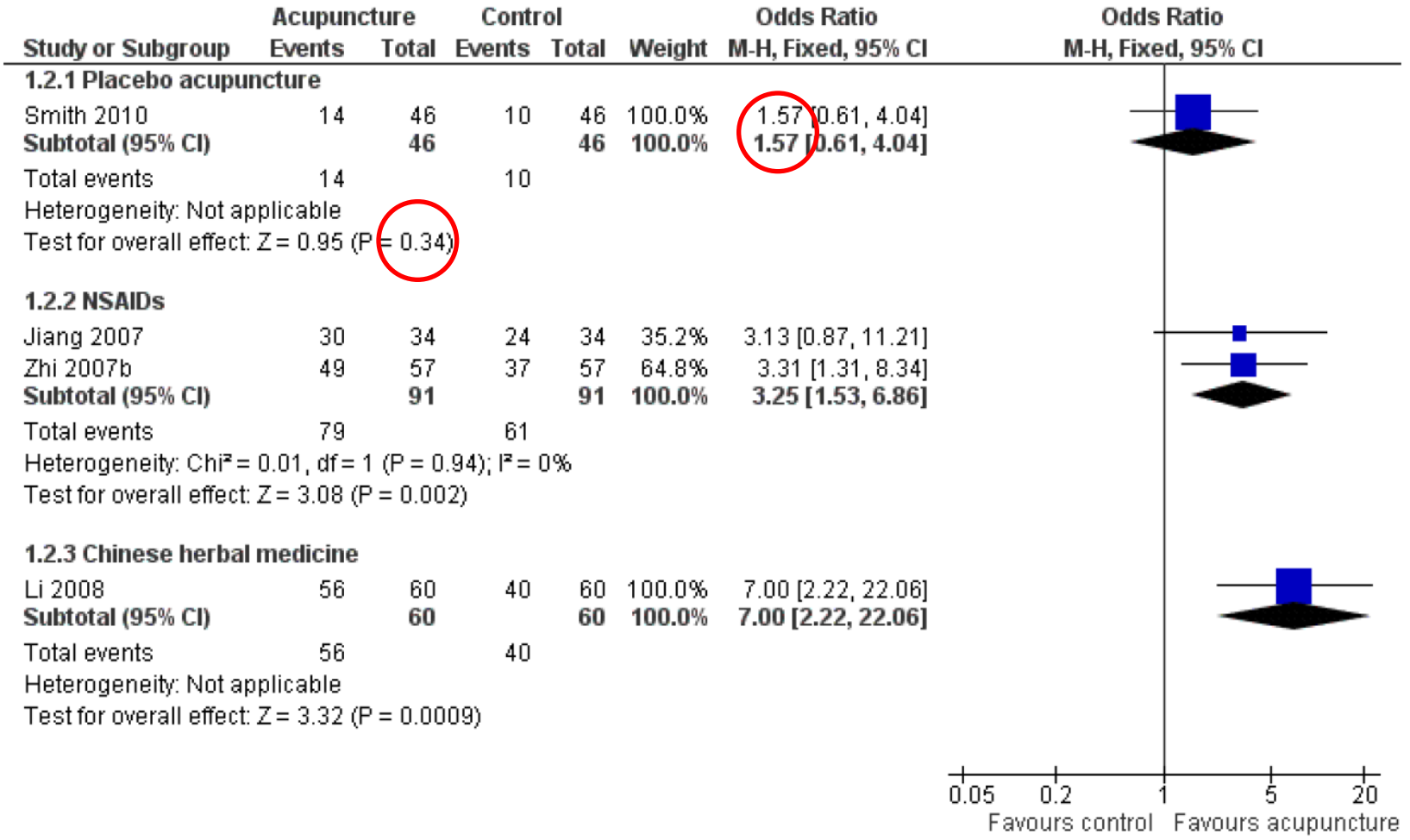
Results: Pain relief short term

Figure 3. Forest plot of comparison: 1 Acupuncture versus control, outcome: 1.1 Pain relief short term.



Improvement in symptoms short term

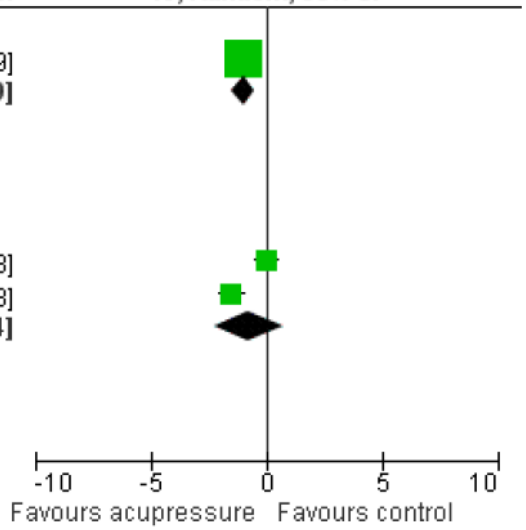
Figure 4. Forest plot of comparison: 1 Acupuncture versus control, outcome: 1.2 Improvement in symptoms short term.



Results: Pain relief with acupressure

Figure 5. Forest plot of comparison: 2 Acupressure versus control, outcome: 2.1 Pain relief.

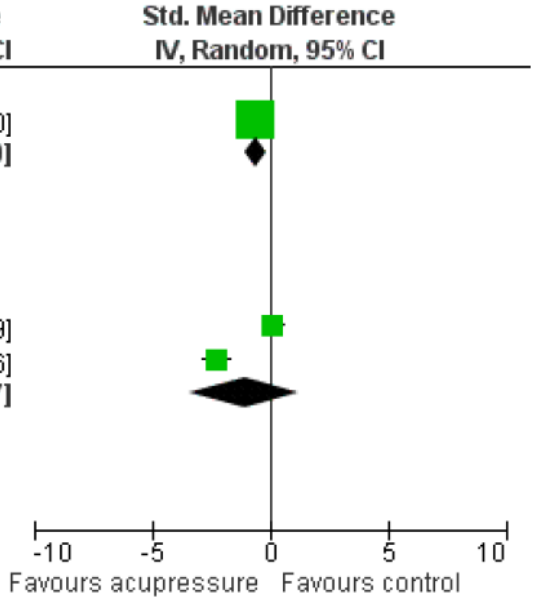
Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
2.1.1 Placebo control								
Wang 2009	45.6	9.19	36	57	13.3	35	100.0%	-0.99 [-1.48, -0.49]
Subtotal (95% CI)			**36**			**35**	**100.0%**	**-0.99 [-1.48, -0.49]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 3.92 (P < 0.0001)								
2.1.2 Rest								
Chen 2004	14.28	11.69	35	14.23	11.49	34	50.3%	0.00 [-0.47, 0.48]
Chen 2010	1.65	1.58	36	9.24	6.89	35	49.7%	-1.51 [-2.04, -0.98]
Subtotal (95% CI)			**71**			**69**	**100.0%**	**-0.75 [-2.23, 0.74]**
Heterogeneity: $Tau^2 = 1.08$; $Chi^2 = 17.50$, df = 1 (P < 0.0001); $I^2 = 94\%$								
Test for overall effect: Z = 0.99 (P = 0.32)								



Results: Improvement in symptoms with acupressure

Figure 6. Forest plot of comparison: 2 Acupressure versus control, outcome: 2.2 Improvement in symptoms.

Study or Subgroup	Acupressure Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
2.2.1 Placebo control								
Wang 2009	52.9	12.8	36	60.7	13.8	35	100.0%	-0.58 [-1.06, -0.10]
Subtotal (95% CI)			**36**			**35**	**100.0%**	**-0.58 [-1.06, -0.10]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 2.39 (P = 0.02)								
2.2.2 Rest								
Chen 2004	23.73	5.61	35	23.05	5.89	34	50.3%	0.12 [-0.36, 0.59]
Chen 2010	19.05	2.4	36	24.22	2.1	35	49.7%	-2.27 [-2.87, -1.66]
Subtotal (95% CI)			**71**			**69**	**100.0%**	**-1.07 [-3.40, 1.27]**
Heterogeneity: $Tau^2 = 2.76$; $Chi^2 = 37.17$, df = 1 (P < 0.00001); $I^2 = 97\%$								
Test for overall effect: Z = 0.90 (P = 0.37)								



Results: SF36 Mental health short term

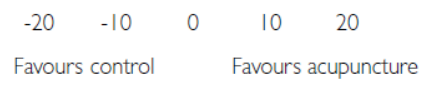
Analysis 1.8. Comparison 1 Acupuncture versus control, Outcome 8 SF36 Mental health short term.

Review: Acupuncture for dysmenorrhoea

Comparison: 1 Acupuncture versus control

Outcome: 8 SF36 Mental health short term

Study or subgroup	Acupuncture N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
1 Placebo acupuncture							
Smith 2010	46	71.4 (18.2)	46	67 (20.8)		100.0 %	4.40 [-3.59, 12.39]
Subtotal (95% CI)	**46**		**46**			**100.0 %**	**4.40 [-3.59, 12.39]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.08 (P = 0.28)							
2 Usual care							
Witt 2008	58	73.21 (16.56)	59	62.72 (21.05)		100.0 %	10.49 [3.63, 17.35]
Subtotal (95% CI)	**58**		**59**			**100.0 %**	**10.49 [3.63, 17.35]**
Heterogeneity: not applicable							
Test for overall effect: Z = 3.00 (P = 0.0027)							
Test for subgroup differences: Chi^2 = 1.29, df = 1 (P = 0.26), I^2 =22%							



Results: adverse evevts

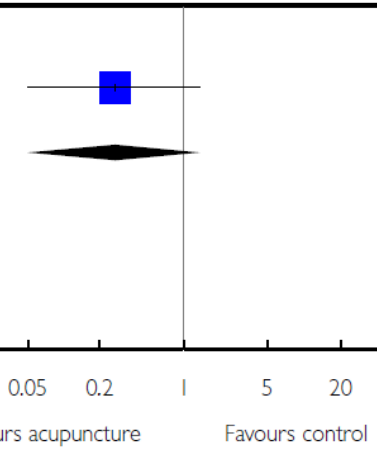
Analysis 1.14. Comparison 1 Acupuncture versus control, Outcome 14 Adverse events.

Review: Acupuncture for dysmenorrhoea

Comparison: 1 Acupuncture versus control

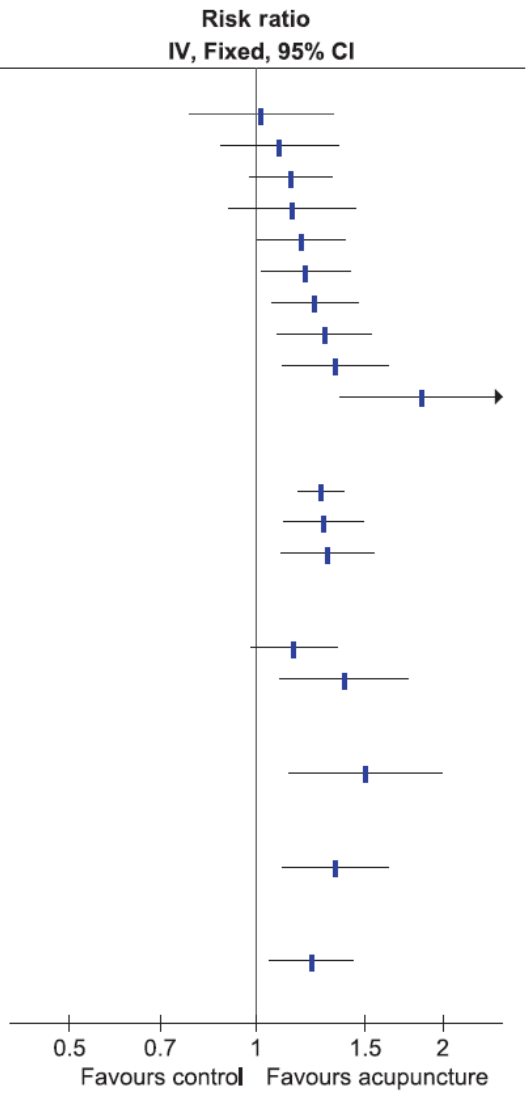
Outcome: 14 Adverse events

Study or subgroup	Acupuncture n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
1 Usual care					
Witt 2008	2/58	7/59		100.0 %	0.27 [0.05, 1.34]
Subtotal (95% CI)	**58**	**59**		**100.0 %**	**0.27 [0.05, 1.34]**
Total events: 2 (Acupuncture), 7 (Control)					
Heterogeneity: not applicable					
Test for overall effect: Z = 1.61 (P = 0.11)					



Result in other review paper (Pain relief short term)

Study or Subgroup	Acupuncture Events	Total	Control Events	Total	Risk ratio IV, Fixed, 95% CI
1.1.1 AT vs PT					
Zhang and Sun[62]	11	12	9	10	1.02 [0.78, 1.33]
Zhou[64]	34	37	16	19	1.09 [0.88, 1.36]
Jiang[52]	33	34	29	34	1.14 [0.98, 1.32]
Zhang and Sun[62]	38	38	9	10	1.14 [0.90, 1.45]
Zhi[63]	52	57	44	57	1.18 [1.00, 1.39]
Wang[61]	50	52	32	40	1.20 [1.02, 1.42]
Zhi[27]	56	60	45	60	1.24 [1.06, 1.46]
Shi *et al*.[58]	116	120	33	44	1.29 [1.08, 1.53]
Liu[56]	39	40	29	40	1.34 [1.10, 1.64]
Han *et al*.[49]	37	38	20	38	1.85 [1.36, 2.51]
1.1.2 AAP vs PT					
Liu[57]	158	160	124	160	1.27 [1.17, 1.39]
Yang[25]	89	89	39	50	1.28 [1.11, 1.49]
Song and Ji[59]	56	60	43	60	1.30 [1.10, 1.55]
1.1.3 Warm-AT vs PT					
Hu and Chen[50]	38	40	33	40	1.15 [0.98, 1.35]
Li[54]	97	100	21	30	1.39 [1.09, 1.76]
1.1.4 AAT+AAP vs PT					
Wang *et al*.[60]	29	30	18	28	1.50 [1.13, 2.00]
1.1.5 AI vs PT					
Liu[56]	39	40	29	40	1.34 [1.10, 1.64]
1.1.6 EAT vs PT					
Zhi[63]	54	57	44	57	1.23 [1.05, 1.43]



PRACTICABILITY

- 我們的病人與研究中的病人是否非常不同，以致無法應用在研究結果?
  - 否:
    - 統計資料包括台灣及中國地區
    - 已移除CRITERIA、統計方式不合者

Interventions	Intervention: three auricular acupressure points were used Liver C012, Kidney CO10 and Endocrine CO18. Acupressure was performed using acupressure seeds named Semen vaccariae. Seeds were kept in place by opaque adhesive patch Control group: plain adhesive patch placed on same point with no seed Both groups had acupressure. All subjects were instructed to massage each point 15 times, three times a day for 20 days. Patches were replaced every five days
Outcomes	Short form Menstrual Distress Questionnaire, and serum nitrous oxide 20 days post-baseline
Notes	Location: Taiwan Setting: colleges Funding: not reported

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

Study	Reason for exclusion
Chen 2008	We were unable to confirm any details on randomisation.
Geng 2008	The study evaluated the use of acupuncture plus Chinese herbs and did not meet our inclusion criteria
Habek 2003	We were unable to confirm any details on randomisation.
He 2005	This trial evaluated acupuncture plus moxibustion and did not meet our inclusion criteria
Huo 2008	The study did not meet our inclusion criteria.
Jun 2007	The trial used quasi-randomisation and did not meet our inclusion criteria
Kempf 2009	The trial evaluated the use of laser acupuncture.
Li 2006	The trial evaluated the effect of moxibustion as the sole active intervention on acupuncture points and did not meet the inclusion criteria
Li 2007	The trial evaluated acupuncture plus a herbal plaster and did not meet our inclusion criteria
Liu 2005	The trial injected vitamin K3 into the acupuncture point, this intervention did not meet the inclusion criteria

PRACTICABILITY

- 這個治療適用於我們的診療環境嗎？
  - 是
- 病患的配合度如何？
  - 大部分可行
- 醫療提供者的配合度及能力如何？
  - 由中醫針灸醫師執行

Disscussion

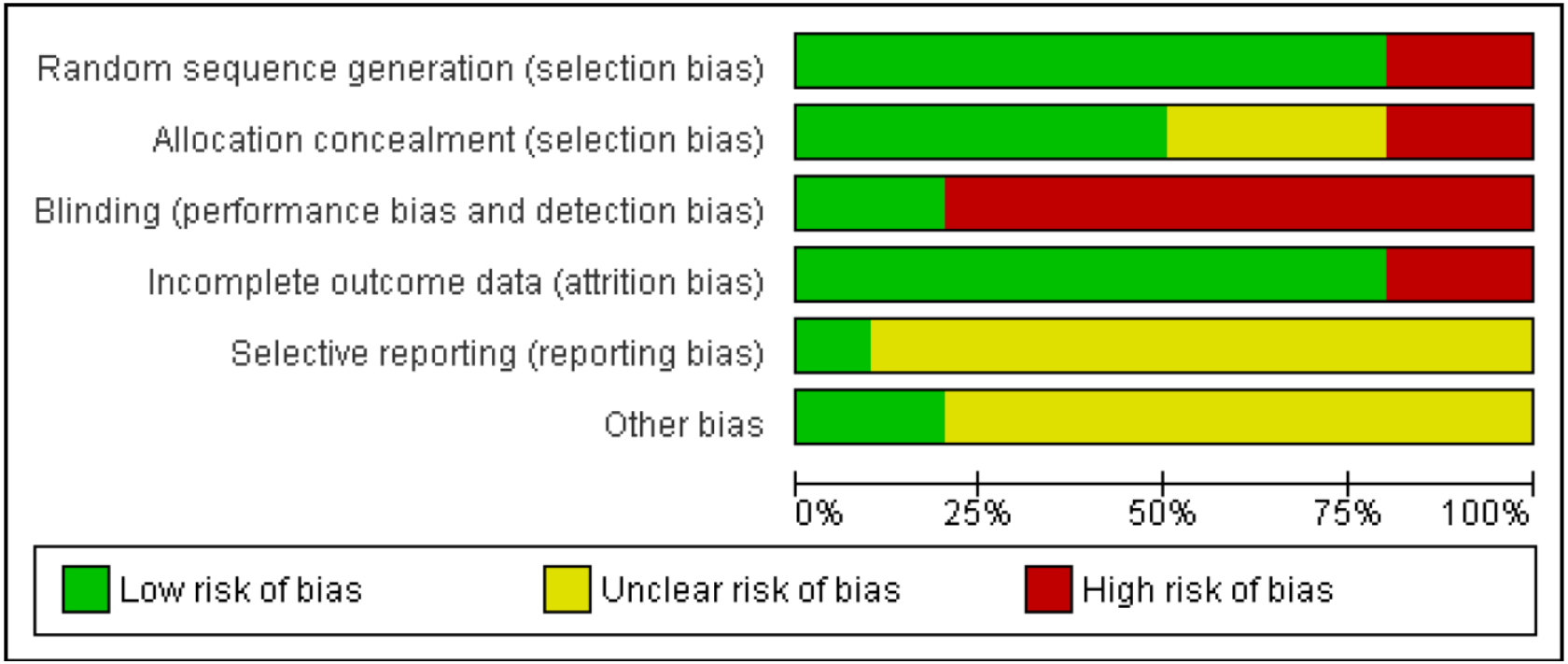
- The original review included TENS and acupuncture (one trial). This updated review includes acupuncture and acupressure trials only: 10 trials (1025 women) were included and 24 excluded.

Limitation and variations

- A weakness of trials continues to be the inclusion of few outcomes and omission of quality of life outcomes and adverse events.
- The majority of women in the community seeking acupuncture or acupuncture support are unlikely to have investigative procedures to exclude secondary dysmenorrhoea.
- Studies were conducted in different countries and consequently this reflects the different styles of acupuncture administered in the studies.

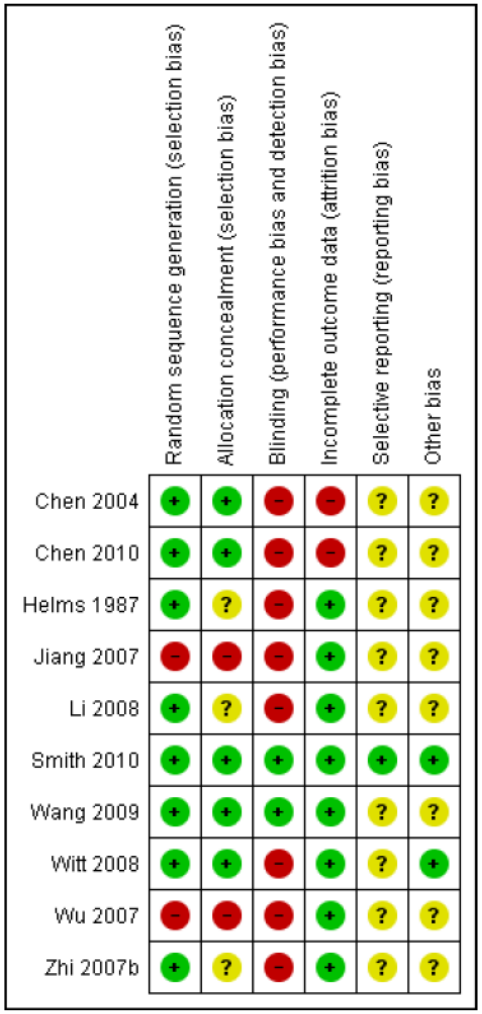
Quality of the evidence

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



Quality of the evidence

Figure 2. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.



Quality of the evidence

- The small number of studies within comparisons and lack of high quality trials suggest there is insufficient evidence of a consistent treatment effect from acupuncture.

Potential biases in the review process

- We cannot rule out the possibility that some studies have been missed.
- We are also aware that publication bias is a possibility as the review does not include many trials from China that show a negative result.
- The characteristics of acupuncture treatment, including variations in the duration, frequency, and selection of acupuncture points, may influence the quality of acupuncture and treatment effect.

Authors' Conclusion

- There are insufficient data to demonstrate whether acupuncture is effective in treating primary dysmenorrhoea.
- Need for further high quality research.

Further research advice

- Greater attention should be given to methodological design and the design of the treatment rationale, and the context of the treatment used in a research setting.
- Need to consider the use of both effectiveness comparative designs using medication, for example NSAIDs or other forms of standard care, and efficacy designs using placebo controls.
- Future studies should also give consideration to including long-term evaluation of effectiveness and adverse effects of acupuncture

Secondary Search

- PudMed: Dysmenorrhoea and acupuncture
- Limitation: ("loattrfull text"[sb] AND ("2010/08/01"[PDAT] : "2012/10/31"[PDAT]) AND Randomized Controlled Trial[ptyp])
- = 10 articles

RCTs after 2010/8

- Fatemeh Bazarganipour, Minoor Lamyian, etc, **A randomized clinical trial of the efficacy of applying a simple acupressure protocol to the Taichong point in relieving dysmenorrhea**, Iran, 2010.
- Guang-Xia Shi, MSc, Cun-Zhi Liu, etc, **Effects of Acupuncture at Sanyinjiao (SP6) on Prostaglandin Levels in Primary Dysmenorrhea Patients**, Beijing, China, March/April 2011.

Our Conclusion

- 針灸手段的治療相較於NSAID或是中藥治療對於經痛有更有即時性的療效；
- 但尚不能清楚說明如何選擇最好的針灸治療方式，以及其長期療效評估。

Reference

- 1. Smith CA, Zhu X, He L, Song J, Acupuncture for dysmenorrhoea (Review), Australia, 2012.
- S-H Cho, E-W Hwang, Acupuncture for primary dysmenorrhoea: a systematic review, 2010, Korea.
- HUAN YANG, CUN-ZHI LIU, etc, Systematic review of clinical trials of acupuncture-related therapies for primary dysmenorrhea, Beijing, China, 2008.
- Searching tools:
  - Medline, PudMed
  - UptoDate.com
  - 中國期刊網
  - Google.com