대한침구학회지 제22권 제6호(2005년 12월)
The Journal of Korean Acupuncture & Moxibustion Society

원 저

A Controlled Trial of Placebo Versus Real Venesection

Kim Woo-young, Baek Seung-tae, Byun Hyuk, Lee A-ram,
Jeong Yong-rae, Kim Kap-sung and Lee Seung-deok

Department of Acupuncture & Moxibustion, College of Oriental Medicine,
Dongguk University

국문초록

위자락과 진자락 요법에 관한 대조 시험

김우영 · 백승태 · 변혁 · 이아람 · 정용래 · 김갑성 · 이승덕

동국대학교 한의과대학 침구학교실

목적 : 이 연구의 목적은 플라시보 자락요법을 계발하기 위함이다.

방법 : 이 연구에서 우리는 자락요법을 잘 알고 있는 특정 피시험군에 진자락요법과 위자락요법을 시행하고, 피시험자에게 본인이 받은 치료가 무엇이었는지 설문조사하였다. 위자락요법은 피부를 뚫어 혈관을 자파시키지 않고 피부 겉에서 느낌만 나도록 자극을 주고 흡입하는 것이다.

결과 : 총 53명의 피시험자가 모든 시험과정에 적절하게 참가하였으므로 모든 데이터를 신뢰할 수 있었다. 결과는 두 그룹간에 유의한 차이를 발견할 수 없었다. 위자락요법을 받은 피시험자중 44.4%는 그들이 받은 치료가 진자락요법이라고 생각했고, 55.6%는 위자락요법이라고 생각했다. 진자락요법을 받은 피시험자중 53.8%는 그들이 받은 치료가 진자락요법이라고 생각했고, 46.2%는 위자락요법이라고 생각했다.

결론 : 각 군간의 민감도와 특이도 간에 유의한 차이가 나타나지 않으므로, 자락요법에 있어 플라시보가 성공했다고 볼 수 있다. 이 연구는 자락요법을 적응증으로 하는 다양한 질환의 임상연구에 있어서 대조군 처치시 좋은 모델을 제시하였다.

핵심 단어 : 자락, 위침, 위자락, 대조군처치, 무작위, 플라시보

· 접수 : 2005년 10월 21일 · 수정 : 2005년 11월 18일 · 채택 : 2005년 11월 18일
· 교신저자 : 이승덕, 경기도 일산동구 식사동 814 동국대학교 병원+한방병원
Tel. +82-31-961-9122 E-mail : chuckman@duih.org

I. Introduction

Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients[1].

Clinical study designs can be graded for the likelihood of producing unbiased results that reflect 'best evidence.' A well-conducted randomized clinical trial (RCT) is generally accepted as the gold-standard study design for demonstrating treatment effectiveness or efficacy[2].

Randomized, double-blind, placebo-controlled trials are generally considered as the best tool to separate the 'specific' and the 'unspecific' or 'placebo' effects of a therapy[3].

A control group study uses a control group to compare to an experimental group in a test of a causal hypothesis. The purpose of controls, blinding, and randomized testing is to reduce error, self-deception and bias[4].

In perspective clinical study concurrent control group is chosen and it has several types of control group such as no treatment, placebo, active control and low dose control[5-6].

Active control group does not in itself show that the new treatment is effective. One must rely on the untested assumption that the active treatment had an effect in this particular patient population in this particular trial[7]. Potential shortcomings of active control group are that variation in event rates, lack of a gold standard treatment and equivalence between treatments result lack of trial validity and finally lead to lack of evidence of efficacy or harm. On the other hand placebo control group has these merits (1) ensuring scientific validity of the trial, (2) evaluating new therapies less effective than the gold standard, (3) minimizing the number of patients exposed to potentially inefficacious or dangerous therapy, (4) studying clinical situations in which withdrawal of therapy might be considered, and (5) determining the true incidence of side effects[7].

As following Katri Hamunen et al's systematic review in issues of study sensitivity, pain intensity and need of rescue analgesia after various types of surgery were analyzed in detail in the placebo group[8].

Placebo is difficult to define satisfactorily[9]. In clinical trials, placebos are generally control treatments with a similar appearance to the study treatments but without their specific activity. We therefore defined placebo practically as an intervention labeled as such in the report of a clinical trial[10].

There are some sham acupuncture procedures which are satisfied the above conditions, placebo group-sham point[11-12], sham depth of needle insertion[13] and sham needle[14-16].

A possible control intervention is using sham point which means needling at incorrect sites. however, it has been suggested that inserting needles at distant sites can still activate noxious inhibitory control, and therefore placebo acupuncture might be more appropriate because it minimizes the physiologic response[16]. Depth of penetration from the skin surface is not central to this paper because essential to the notion of venesection is bloodletting.

Therefore we use sham needle as a control interventions. Sham needle is considered noninvasive acupuncture, in which there is no needle penetration at all, and methods can be using blunted needles, fingernails, toothpicks, or retractable needles[17-18].

The purpose of this study was to validate a better technique of administering placebo venesection that is practical and resembles true venesection treatment. In this study sham venesection was conducted by lightly pricking the skin with a shortened, blunted acupuncture needle, without penetrating the skin. so that the subject cannot discern which technique is being used; so that it appears the same as in real acupuncture.

The hypothesis was that subjects would not be able to distinguish between real and placebo venesection, thus validating the use of sham venesection as a good control intervention for use

in further acupuncture studies. Currently, this kind of the ideal method of control intervention has not yet been identified[19]. To date, there has been minimal research regarding sham venesection.

Ⅱ. Materials and methods

1. Target population

Fifty-four subjects (43 male and 11 female subjects; age range, 22 - 35 years) were recruited from students who are major in oriental medicine at the University of Dongguk, Seoul, Korea. Subjects were recruited voluntarily. Practitioners have got informed consent from all subjects verbally. They were told they had a 50 - 50 chance of receiving real or placebo acupuncture.

1) Inclusion criteria

Inclusion criteria included the following: (1) male or female subject students at the University of Dongguk, (2) subject who know the bloodletting and cupping treatment well, and (3) subject who had ever experienced acupuncture.

2) Exclusion criteria

Exclusion criteria included the following: (1) coagulopathies, (2) vascular disease, and (3) needle phobia (4) hypotension (5) pregnant (6) general weakness

2. Experimental design

1) Randomization

A total of 54 subjects were screened for eligibility. One subject was not eligible because it was fearful of needles. Therefore 53 subjects remained to volunteer and participate.

Each subject was randomly assigned to one of two groups, standard acupuncture treatment (n=27) or placebo acupuncture (n=27) by urn method. Proper randomization rests on adequate allocation concealment. An allocation concealment process keeps clinicians and participants being unaware of which assignment

2) Blinding

For this study, blinding required a single blinded study with an independent observer. A double-blinded study would have been preferred; however, it is not possible to blind the acupuncturist. Therefore only the patient and the experimenter collecting the subject's data, were blinded to the patient's group assignment.

3. Materials

1) Sham needle

We designed a placebo lance needle. For preparing the needle, the tip of a real lance needle (HANA LET 23G, diposable, 3 mm×0.5 mm, DU YEE CARE Inc., Kyungki-Do, Korea) was rounded with a hone to 2 mm by one experimenter. When it touches the skin a pricking sensation is felt by the volunteers, simulating puncturing of the skin. (figure 1); a procedure we also used in real acupuncture to ensure the same treatment setting. In acupuncture group, the tip of the needle is sharp and depletes blood. No differences between real and placebo acupuncture could be seen.

2) Qiuxu(GB40)

GB40 acupuncture point is yuan-primary point of the Gallbladder Meridian[20] and is located on the dorsum of the foot, 1ch'on in front of the lateral malleolus, at the hollow point between the tibia and fibula, on the flexure fold of the ankle.[21] This point is commonly chosen for intervention of ankle sprain[20]. We chose the acupuncture point which is located on ankle because ankle is very easy to be injured and, clinically we often use this point as a bloodletting points[20].

Fig. 1. Sham lance needles, the tips of those are blunt not to bloodletting 2.5cm of diameter of cupping cup

Fig. 2. Real lance needles, the tips of those are sharp to penetrate the skin

3) Cupping cup

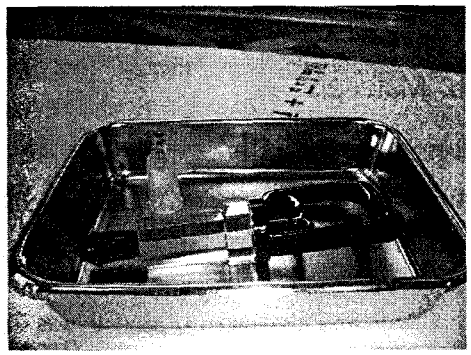

Fig. 3. No 5. Sterilized, made in Daegun Company.

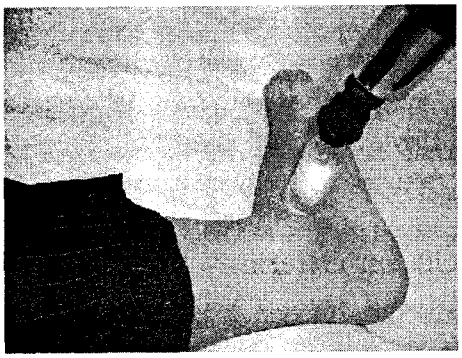

Fig. 4. The Procedure of Cupping Therapy
We putted a cotton ball in the cup not the blood or the solution of povidone to flow

4. Procedures

The 54 volunteers were scheduled individually in 15-minute appointments over a span of 1 day. Each subject was individually taken to an empty ward room, where the experimenter collecting the data obtained a list. Experimenter explained the procedures of the experiment and gained the verbal consent form described the procedure and possible risks and discomforts when receiving real or placebo acupuncture. Whenever they wanted to stop it they could do it. In between the transitions of the rooms, care was taken to ensure that subjects did not communicate with each other. The one acupuncturist treated all the subjects. Before the treatment of each subject, the eyes of subjects were blinded. Only experimenter read concealed envelopes individual randomization codes and if it was written ' A', he or she gave the real lancet needle but if it was written 'B', he or she gave the sham lancet needle. The acupuncturist followed the rule of infection assigned by the Association of Korean Oriental Medicine. The acupuncturist was a well skilled resident of Dongguk Oriental Medical Hospital. The acupuncturist was also instructed not to discuss the treatment during treatment interventions.

5. Interventions

After Acupuncturist sterilized the Qiuxu(GB40) with a wad of alcohol cotton on the left or right, he pricked with a needle whether it is sham or

real on the point of Qiuxu(GB40). In case of 'A' group, he confirmed the rupture of vessel and sucked it 3 times to adhere to the cup to skin and made it remained for 30seconds. After removing the cupping cup, he sterilized the part using alcohol and povidone. Especially when using the povidone solution for dressing the part, he made the solution flow the part so intended to the subject think that it is like blood flowing. In case of 'B' group, the procedure is same exception no rupture of vessel.

6. Questionnaire items

Two questionnaires were used to evaluate the difference between the real and placebo venesection treatment and to get other relevant information from the subjects. Questionnaire 'A', completed before the treatment focused on the personal background and whether if it has experience of venesection treatment. Questionnaire 'B' was used to assess the difference between the real and placebo venesection treatment, practitioner made a question "What do you think which group you were included." and the answer were 3types i) "I was treated real venesection treatment", ii) "I was treated sham venesection treatment", iii) "I don't know" Practitioner had the subject choose only one answer.

7. Statistical analysis

The Fisher exact test was used to determine whether the difference in subject response was statistically significant. The P value of $< .05$ was considered statistically significant.

The matched Student t test was used to determine the P value of subject sex and age. The P value of $< .05$ was considered statistically significant. We used the SPSS10.0 the software program.

The definition of specificity is that Screening Test correctly negative in absence of disease, A test with high specificity has few false positives, independent of disease prevalence in the community.[23] In this study the specificity is 55.6%, and sensitivity of it is 53.8%.

Ⅲ. Results

A total of 54 subjects participated in the study. But 1 female student wanted to stop it because of needle phobia, so all 53 subjects followed procedures and filled out the form correctly, and therefore all data collected by the investigator were considered credible. The results showed no significant difference between the 2 treatment groups (Table 1). Overall, 83.7% of the subjects believed they received real acupuncture treatment, and 16.3% of the subjects believed they received placebo acupuncture treatment.

The calculated 2-tailed P value was .463. This P value indicates a statistical insignificance between the 2 treatment group responses. This supports the null hypothesis that subjects were not able to differentiate between real and placebo acupuncture.

The calculated 2-tailed P value was .942. This P value indicates a statistically insignificance age difference between the 2 treatment groups. Therefore the 2 groups were not significantly different with respect to age.

Table 1. Treatment Results in Numbers

	True Treatment (Male/female)	
Subject Responses	Real venesection	Placebo venesection
Real venesection	14(11/3)	12(9/3)
Placebo venesection	12(11/1)	15(12/3)
Total number	26	27

Table 2. Treatment Results in Percentages

	True Treatment(%)	
Subject Responses	Real venesection	Placebo venesection
Real venesection	53.8	44.4
Placebo venesection	46.2	55.6

Table 3. Treatment Results in Ages

	Placebo venesection	Real venesection
No. of subjects	27	26
Sex ratio(m/f)	21/6	22/4
Average age(y)	26.11	27.13

Table 4. Whether or not experience of venesection

	True Treatment experience (yes/no)	
Subject Responses	Real venesection	Placebo venesection
Real venesection	14(12/2)	12(10/2)
Placebo venesection	12(8/4)	15(10/5)
Total number	26	27

Among the 26 subjects who received real acupuncture, 53.8% (14/26) of the subjects correctly identified their procedures as real acupuncture, and 46.2% (12/26) of the subjects believed they received placebo acupuncture.

Within the 27 subjects who received sham venesection, 44.4% (12/27) of the subjects believed their Sham venesection treatment was real, whereas 55.6% (15/27) of the subjects correctly identified their venesection treatment as placebo (Table 2).

A total of 9 males and 3 females incorrectly identified their placebo treatment as being real acupuncture treatment. An additional 11 males and 1 female incorrectly identified their real venesection treatment as being sham treatment.

The subject pool was similar in both groups. The placebo venesection group had a 21:6 male-to-female ratio. The average age of this group was 26.11 years. The real venesection group had a 22:4 male-to-female ratio. The average age of this group was 27.13 years. The age range of all the subjects was from 22 to 35 years. The average age of all subjects was 26.62 years (Table 3).

Ⅳ. Discussion

The practice of bloodletting has been used by almost all cultures and societies at some point in their medical history. The controversy over the usefulness of it has been raging since the fifth century B.C.E. There were ways of letting blood. The spring loaded lancet and cupping was often used. The cupping therapy was the act of applying a cup, in which a vacuum had been created through the use of fire or negative pressure, to either intact skin to cause it to tumefy or to a place where small incisions had been made, to draw out blood[24]. In Traditional Chinese Medicine they use three-edged needle, small eyebrow sword, cutaneous needle to bloodletting.

The lance needle which is one of nine needles

is used bloodletting. Throughout the ≪Spiritual Pivot · Of nine classical needles and Twelve Source Points≫, we are told "All use of acupuncture is thus: to dredge stasis"[25] ≪Spiritual Pivot · On Governing the needles acupuncture≫ described some ways of venesection definitely[25]. ≪Spiritual Pivot · An Essay on the Blood's Luo Channels≫ opens "The blood's veins, arteries, and channels, when full, firm, and extensive are red. When they are up or down without a constant location, they may be small like a needle or large like a tendon. The result of draining even ten thousand times will not cause one loss"[25]. Recently, it is proved that venesection treatment has effect that clearing away for resuscitation, removing edema for promoting blood circulation[22].

The placebo is an intervention designed to simulate behavioral intervention but not believed (by the investigator) to be a specific therapy for the target condition[35]. The key points are that placebo simulates intervention and is not believed to be specific for the target condition.

Therefore finding an appropriate control intervention for clinical acupuncture research is very important. Some efficacy studies have used sham needle a control intervention. 'Sham point' is when the needle penetrates the skin at a no acupuncture point location. Several studies, however, have indicated that even sham point can produce a therapeutic response[27]. Biella et all[28] and Cho et al[29] found that invasive sham acupuncture activated common areas of the brain compared with true acupuncture. Patient responses by Goddard et al[30] showed that even sham point has an analgesic effect, and therefore its use as a negative control in acupuncture studies should be questioned. Numerous acupuncture points are in close proximity around the body, and therefore finding a no influential site that is not near another acupuncture point is difficult[31]. For this reason, sham point might not be an effective control intervention. Another problem with sham acupuncture is that sham acupuncture modalities can be distinguished from true acupuncture by experienced patients[32]. Thus it is essential that there is little difference in protocol between the control intervention and true treatment[19].

Another possible control intervention would be the use of sham needle, also known as noninvasive needle. Multiple studies were creative in designing a noninvasive needle-delivering apparatus, such as using retractable blunt needles, blunt dental instruments, toothpicks, or a needle handle or even taping needles onto the skin[16,33-34]. Several of these studies validated their methods as a good control intervention because subjects were not able to differentiate the sensation between true and placebo acupuncture. A study by Lao et al proved their placebo control to be valid; however, their method proved cumbersome and required blindfolding of subjects. Fink et all designed a similar placebo acupuncture method that did not require subject blindfolding and was less cumbersome. However, the holding device was not used in the real acupuncture group, thereby creating a risk of no blinding the subject. Streitberger et al[35] and Park et al[36] designed similar sham acupuncture holding devices in which a blunted needle either touched the skin or was retracted, respectively. With a holding device, neither study needed to blind the subjects receiving real or placebo acupuncture. By the way there has been minimal research regarding sham venesection treatment. The key point of it is bloodletting. We made the control group following the definition of placebo. Sham point for a placebo group is ineligible because it doesn't matter in case of venesection treatment and sham depth of needle insertion doesn't conform to this case. So we chose sham lance needle of which tip is blunt not to bloodletting as like a placebo group. Other intervention is all the same as experimental group. But it failed to blind acupuncturist.

The acupuncturist practiced pricking the needle for both real and placebo treatment at least 20 times before the initiation of the study. The acupuncturist pricked needle whether sham needle or real needle 12times and absorbed the skin on

which was applied cupping and sucked it with same strength every subject.

The results of this experiment suggest that this new method of administering noninvasive placebo is valid. The difference between real and placebo acupuncture was not significant because 49.1% of the subjects believed they were receiving real acupuncture. This showed valid control design because subjects were not able to differentiate between control and real acupuncture.

There are possible reasons why 22.6% the subjects who received placebo acupuncture believed it was real acupuncture. Some of the possible reasons are as follows: the subject felt scattering needle pricking being blinded they felt a povidone solution flowed when acupuncturists removed the cupping.

There are possible reasons why 22.6% of the subjects who received real acupuncture treatment believed it was placebo treatment. Some of the possible reasons are as follows: the subject felt almost same prick. Therefore subjects would not know the sensations of true acupuncture and are less able to differentiate the treatments.

Future studies should collect data on the generalized effects of the needle puncture felt by the patient and whether this technique can be applied to all acupuncture points. Intentionally we included only inclusion criteria. From our results, however, this control method is significant enough for future venesection studies that need a valid control intervention for venesection-subjects whether naive or not.

V. Conclusion

This article has attempted to establish a new placebo venesection. Proceeding from what has been said above, it should be concluded that this study lays the foundation for future work on the effects of venesection treatment for the various disease. There are, however, one additional problem for example claims of blinding remains to be explained.

VI. References

1. Brian W. McCrindle, Progress in Pediatric Cardiology, Volume 20, Issue 1, 2005 ; 53-64.
2. J. D. Rizzo MD, Evidence-based medicine: can it be applied to stimulation of erythropoiesis for patients with malignancy? Erythropoietin use in oncology: a summary of the evidence, Best Practice & Research Clinical Haematology, Volume 18, Issue 3, 2005 ; 439-448.
3. D. Le Bars, L. Villaneuva, J.C. Willer and D. Boussahira, Diffuse noxious inhibitory control (DNIC) in animals and man. Acupunct. Med. 9, 1991 ; 47 - 57.
4. Robert Todd Carroll. The keptic's dictionary Available from: skepdic.com/control.html.
5. Pocock SJ Clinical trials: A practical approach. Chichester, John william 1983 ; 28-99, 7-33.
6. Spilker B. Guide to clinical trials.New York, Raven Press, 1991.
7. Robert F. Onder MD, JD, The ethics of placebo-controlled trials: The case of asthma Journal of Allergy and Clinical Immunology Volume 115, Issue 6, 2005, 1228-1234.
8. Katri Hamunen, Eija Kalso A systematic review of trial methodology, using the placebo groups of randomized controlled trials in paediatric postoperative pain, Pain, Volume 116, Issues 1-2, 2005 ; 146-158.
9. Gøtzsche PC. Is there logic in the placebo? Lancet 1994 ; 344 : 925-6.
10. Hrobjartsson A, Gotzsche PC. N Engl J. Is the placebo powerless? an analysis of clinical trials comparing placebo with no treatment. American Journal of Ophthalmology, Volume 132, Issue 4, 2001 ; 604-605.
11. Godfrey CM, Morgan P.A controlled trial of

theory of acupuncture in musculoskeletal pain. J Rheumatol 1978 ; 5(2) : 121-124.
12. Gaw AC, Chang LW, Shaw LC. Efficacy of acupuncture on osteoarthritic pain. N Engl J Med 1975 ; 293 : 375-378.
13. J.S. Park, W.Y. Kim, S.D.Lee, Comparison of Superficial and Deep Acupuncture in the Treatment of Ankle sprain : A Randomized Controlled Trial-Pilot study, The Journal of Korean Acupuncture and Moxibustion Society 2004 ; 5 : 137-48.
14. White AR, Resch KL, Chan JC, Norris CD, Modi SK, Patel JN et al. Acupuncture for episodic tension-type headache:a multicentre randomized controlled trial. Cephalagia 2000 ; 20 : 632-637.
15. Jongbae Park, Adrian R. White, Edzard Ernst, Exeter. New Sham Method in Auricular Acupuncture. Arch Intern Med 2001;161(6): 894-5.
16. L. Lao, S. Bergman, G.R. Hamilton, P. Langenberg and B. Berman, Evaluation of acupuncture for pain control after oral surgery a placebo-controlled trial, Arch Otolaryngol Head Neck Surg 125, 1999 ; 567 - 572.
17. J. Hess, B. Magelvang and H. Simonsen, Acupuncture versus metoprolol in migraine prophylaxis a randomized trial of trigger point inactivation, J Intern Med 235, 1994 (5)451 - 456.
18. S.Y. Junnila, Acupuncture therapy of prolonged pain, Duodecum 98, 1982 ; 871 - 878.
19. Greg Goddard, , Yoshi Shen, Brian Steele and Nathan Springer , A controlled trial of placebo versus real acupuncture, The Journal of Pain, Volume 6, Issue 4, April 2005, 237-242.
20. Five streams of Chinese medicine Useful acupuncture points Availablerom : URL : *www.wujue.com/changshi/xuewei45*.html.
21. Dok H. Kim, O.M.D., Ph.D. oriental medicine, volume two, acupuncture and moxibustion, The Research Institute of Oriental Medicine, Inc.
22. Department of Oriental Medicine The Graduate School of Nationwide compilation. Acupuncturelogy (second). Seoul : Jipmoondang. 1991 : 653.
23. Hennekens, Epidemiology Medicine, 1987 ; 327-47.
24. Students of WMNS 36 at Kenyon College. Blood, Power, and Gender in Western Cultures Available from : URL : www2.kenyon.edu/Depts/WMNS/Projects/Wmns36/bloodletting/venefra.htm.
25. Translated by Wu Jing-Nuan, The Spiritual Pivot, 1993 ; 2, 35, 147.
26. Turner, J., Deyo, R., Loeser, J.Von korff, M.Fordyce, W. JAMA, 1994, 1609-1614.
27. Z.H. Cho, S.C. Chung, J.P. Jones, J.B. Park, H.J. Park, H.J. Lee, E.K. Wong and B.I. Min, fMRI neurophysiological evidence of acupuncture mechanisms. Med Acupunct 14, 2003 ; 111-118.
28. G. Biella, M.L. Sotgiu, G. Pellegata, E. Paulesu, I. Castiglioni and F. Fazio, Acupuncture produces central activations in pain regions, Neuroimage 14, 2001 ; 60 - 66.
29. Z.H. Cho, S.C. Chung, J.P. Jones, J.B. Park, H.J. Park, H.J. Lee, E.K. Wong and B.I. Min, fMRI neurophysiological evidence of acupuncture mechanisms. Med Acupunct 14, 2003 ; 111 - 118.
30. G. Goddard, H. Karibe, C. McNeil and E. Villafuerte, Acupuncture and sham acupuncture reduce muscle pain in myofascial pain patients, J Orofacial Pain 1, 2002 ; 71 - 76.
31. A.J. MacDonald, Textbook of Pain (4th ed.), Churchill Livingstone, Edinburgh, 1999 ; 906-919.
32. D. Melchart, J. Thormaehlen, S. Hager, J. Liao, K. Linde and W. Weidenhammer, Acupuncture vs. placebo vs. sumatriptan for early treatment of migraine attacks a randomized controlled trial, J Intern Med 253, 2003 ; 181 - 188.
33. S. Birch, R. Hammerschlag, K. Trinh and C.

Zaslawski, The non-specific effects of acupuncture treatment when and how to control for them, Clin Acupunct Oriental Med 3, 2002 ; 20 - 25.

34. M. Fink, C. Gutenbrunner, J. Rollnik and M. Karst, Credibility of a newly designed placebo needle for clinical trials in acupuncture research, Forsch Komplementarmed Klass Naturheilkd 8, 2001 ; 368 - 372.

35. K. Streitberger and J. Kleinhenz, Introducing a placebo needle into acupuncture research, Lancet 352 1998, 992 - 1002.

36. J. Park, A. White, C. Stevinson, E. Ernst and M. James, Validating a new non-penetrating sham acupunctue device two randomized controlled trials, Acupunct Med 20, 2002 ; 168 - 174.