
EFFICACY OF ACUPUNCTURE ON PAIN RELIEF IN PATIENTS WITH RHEUMATOID ARTHRITIS

Lence Nikolovska

Faculty of Medical Sciences, University "Goce Delcev" – Stip, N. Macedonia,
lence.nikolovska@ugd.edu.mk

Silvana Mitkovska

Faculty of Medical Sciences, University "Goce Delcev" – Stip, N. Macedonia,

Abstract: Rheumatoid arthritis is probably the most universal of all diseases affecting practically everyone at some time or another of one's life in all parts of the globe. It has been known as a chronic and autoimmune disease characterized with symmetrical and persistent synovitis and destructive polyarthritis. The treatment of RA has always been a challenge. The mainstream of the management regarding RA is the use of nonsteroid anti-inflammatory drugs, antirheumatic drugs and biological agents. But the concerns may arise when taking accompanying side effects and toxicity into consideration. Given the fact of the expanding awareness of unwanted side effects of pharmaceutical treatment, there has been an increased utilization of acupuncture as a contemporary healthcare option which has been reported as a kind of safe management.

According to traditional Chinese medicine, Rheumatoid arthritis belongs to the Painful Obstruction Syndrome, also called "Bi", which evokes the idea of "obstruction". In Chinese medicine it means pain, soreness or numbness of muscles, tendons and joints due to obstruction in the circulation of Qi and Blood in the channels caused by invasion of exterior Wind, Cold or Dampness.

The invasion of external climatic factors is due to a pre-existing and temporary deficiency of the body's Qi and Blood which allows the Wind, Cold and Dampness to penetrate.

There are five main types according to causative factor:

1. Wind Painful Obstruction Syndrome: pain moving from joint to joint
2. Damp Painful Obstruction Syndrome: fixed pain with soreness, heaviness, numbness and swelling of the joints
3. Cold Painful Obstruction Syndrome: severe pain in one joint
4. Heat Painful Obstruction Syndrome: very severe pain, hot-red-swollen joints
5. Bony Painful Obstruction Syndrome: painful joints with swelling and bone deformities.

Treatment: The aim of the treatment is simply to expel the pathogenic factors which have invaded the channels, and eliminate the resulting local stagnation of Qi and Blood in the channels.

Acupuncture treatment: In general, the treatment is based on the choice of points from four possible groups:

1. distal points; 2. local points (including Ah Shi points); 3. adjacent points; 4. points according to pattern; 5. general points.

The aim of this study is to systematically review the efficacy of acupuncture on pain relief in patients with rheumatoid arthritis (RA).

Methods of research: To answer the question of efficacy of acupuncture on pain relief in patients with RA, we used western and Chinese databases (PubMed, EMBASE, Cochrane, AMED, MEDLINE, CNKI (China National Knowledge Infrastructure) of systematic reviews, by screening multiple information sources, to identify systematic reviews and their included primary studies.

Results: We extracted data from the identified reviews and reanalyzed data from primary studies included in those reviews:

Alexis Ramos, José Domínguez, Soledad Gutiérrez (2018) used Epistemonikos, the largest database of systematic reviews in health. They found seven systematic reviews that included twenty primary studies, of which all were randomized trials. However, this table and the summary in general are based on only two randomized trials that answer the question posed. Both trials evaluated traditional Chinese acupuncture and analgesia intervention. The trials evaluated multiple outcomes, which were grouped by the systematic reviews as follows:

Wang C, de Pablo P, Chen X, Schmid C, McAlindon T. (2008), performed a comprehensive search of 12 western and Chinese databases and reference lists. They included randomized controlled trials with pain as an end point, measured by tender joint count (TJC) or a pain scale. They also reviewed the effect of acupuncture on morning stiffness and joint mobility. Study quality was assessed by Jadad score. Differences between treatment groups were pooled as mean or median change (P value).

Pei-Chi Chou¹ and Heng-Yi Chu² searched the PubMed, EMBASE, Cochrane, AMED (Allied and Complementary Medicine), NCCAM (The National Center for Complementary and Alternative Medicine), and CNKI (China National Knowledge Infrastructure) databases to identify relevant monographs and related references from 1974 to

2018. Chinese journals and theses/dissertations were hand searched. 43 studies were recruited. Each research was analyzed for study design, subject characteristics, intervention, selected acupoints, assessment parameters, proposed mechanisms, and results/conclusions.

Discussion: Western medicine doesn't recognize the concepts of qi and meridians. However, scientific evidence suggests alternate explanations for why acupuncture might provide pain relief. Research offers limited, but in some cases promising, evidence that acupuncture can help with arthritis symptoms. There's a lot of research that says when we put an acupuncture needle into the body, a number of physiological mechanisms occurs. A well-placed needle sets off a cascade of events, producing a signal that travels along the spinal cord to the brain, triggering a release of neurotransmitters called endorphins and enkephalins, which scientists believe reduce the sensation of pain. Research also shows that inserting an acupuncture needle induces the production of cortisol, a hormone that helps control inflammation. Acupuncture may stimulate activity of other pain-relieving chemicals in the body as well.

Conclusion: Even though patients offer anecdotal evidence that acupuncture has helped them, some studies have found acupuncture offers minimal pain and stiffness relief for osteoarthritis (OA). A 2018 *Cochrane* review of six studies evaluating acupuncture for hip OA concluded acupuncture probably has little or no effect in reducing pain or improving function compared to sham acupuncture in people with hip osteoarthritis. On the other hand, a much larger number of studies concluded that acupuncture alone or combined with other treatment modalities is beneficial to the clinical conditions of RA and can improve function and quality of life, and is worth trying. The review cites several possible ways acupuncture effects RA, including its anti-inflammatory effect, antioxidative effect and regulation of immune system function. However, the review acknowledges that there is still inconsistency among trial findings and that further research is needed to evaluate the effects of acupuncture and how it works.

Keywords: Rheumatoid arthritis, joint pain, acupuncture, electroacupuncture, moxibustion.

1. INTRODUCTION

Both acupuncture and Chinese herbs are extremely effective in treating Rheumatoid arthritis (RA). Acupuncture, in particular, is the treatment of choice in this condition giving excellent results in both acute and chronic cases. Acute cases, in fact, can usually be resolved in a few treatments. However, the majority of patients we see with this problem present very chronic conditions. These cases can be treated successfully too, but the more long-standing the condition, the longer it will take to clear.

Osteoarthritis is easier to treat than Rheumatoid arthritis but this can also be helped, sometimes even when bone deformities have already set in. In such cases, the treatment may take a very long time and even years.

As for the relative importance of acupuncture and herbs, in general, the more chronic the condition, the more herbs (or patent remedies) are applicable. Herbs are particularly good in chronic cases to resolve Phlegm (and bone deformities), move Blood and nourish Liver and Kidneys.

As for prevention, Painful Obstruction Syndrome - "Bi" is probably the most common affliction of mankind and it affects the elderly in particular as the decline of Qi and Blood and the weakening of Liver and Kidneys makes them prone to invasion of external pathogenic factors. Rheumatoid arthritis, however, is not an inevitable consequence of old age and it is possible to take steps to minimize it or prevent it altogether. The two most important areas in life to take care of in order to prevent Painful Obstruction Syndrome, are exercise and diet. Let us look at each of these areas in detail.

The aim of this study is to systematically review the efficacy of acupuncture on pain relief in patients with rheumatoid arthritis (RA).

2. METHODS OF RESEARCH

To answer the question of efficacy of acupuncture on pain relief in patients with RA, we used western and Chinese databases (PubMed, EMBASE, Cochrane, AMED, MEDLINE, CNKI (China National Knowledge Infrastructure) of systematic reviews, by screening multiple information sources, to identify systematic reviews and their included primary studies.

3. RESULTS

We extracted data from the identified reviews and reanalyzed data from primary studies included in those reviews:

Alexis Ramos, José Domínguez, Soledad Gutiérrez used Epistemonikos, the largest database of systematic reviews in health. They found seven systematic reviews that included twenty primary studies, of which all were randomized trials. However, this table and the summary in general are based on only two randomized trials that answer the question posed. Both trials evaluated traditional Chinese acupuncture and analgesia intervention.

- One trial [Tam LS, Leung PC, Li TK, Zhang L, Li EK (2008)] performed twenty acupuncture sessions in ten weeks, with thirty-minute needle insertion in six acupuncture points: LI11, TE5, ST36, GB34, GB36, GB39.
- One trial [Zanette Sde A, Born IG, Brenol JC, Xavier RM. (2008)] performed ten sessions of acupuncture in five weeks, with twenty-minute needle insertion in 16 acupuncture points: EX1, EX27, CV6, CV12, LI4, GV4, GV14, LR3, PC6, SP6, ST36, BL11, BL20, BL22, BL23, BL60.
- The follow-up of the trials was ten and nine weeks.
- The evidence presented in this summary applies to men and women with rheumatoid arthritis, over 18 years of age, with no restrictions due to severity or time since diagnosis.
- The trials evaluated multiple outcomes, which were grouped by the systematic reviews as follows:
 - Pain, using the visual analog scale (VAS)
 - Disease activity, using the Disease Activity Score 28 (DAS28)
 - Improvement criteria: ACR20, ACR50
 - Functionality: Health Assessment Questionnaire (HAQ)
- The conclusions of this summary refer to manual acupuncture of traditional Chinese medicine, without adjuvant techniques such as moxibustion, or other types of acupuncture, such as bee stings or electroacupuncture.
- **Conclusion:** However, acupuncture is one of the complementary therapies most used by patients with rheumatoid arthritis, and most people who have received acupuncture believe that it has been effective to some degree in the management of pain [Wang, S.F. (2010)], keeping a positive perception of the intervention.

Wang C, de Pablo P, Chen X, Schmid C, McAlindon T. (2008), performed a comprehensive search of 12 western and Chinese databases and reference lists. They included randomized controlled trials with pain as an end point, measured by tender joint count (TJC) or a pain scale. They also reviewed the effect of acupuncture on morning stiffness and joint mobility. Study quality was assessed by Jadad score. Differences between treatment groups were pooled as mean or median change (P value).

- Eight studies met eligibility criteria with a total of 536 subjects. There were 4 placebo-controlled trials and 4 active-controlled trials. Average study duration was 11 weeks. Mean +/- SD acupuncture points and sessions were 11 +/- 8 and 42 +/- 62, respectively. Average duration of needle insertion was 24 minutes.
- Six studies reported a decrease in pain for acupuncture versus controls; the mean or median changes of acupuncture-decreased TJC pain ranged from 1.5 to 6.5.
- 4 studies reported a significant reduction in morning stiffness (mean change -29 minutes), but the difference was nonsignificant versus controls.
- With regard to inflammatory markers, 5 studies observed a reduction in ESR (mean change -3.9 mm/hour) and 3 observed a CRP level reduction (mean change -2.9 mg/dl); only 1 study showed a significant difference for both ESR and CRP.
- **Conclusion:** Despite some favorable results in active-controlled trials, conflicting evidence exists in placebo-controlled trials concerning the efficacy of acupuncture for RA. Rigorous and well-controlled randomized trials are warranted.

Pei-Chi Chou¹ and Heng-Yi Chu² searched the PubMed, EMBASE, Cochrane, AMED (Allied and Complementary Medicine), NCCAM (The National Center for Complementary and Alternative Medicine), and CNKI (China National Knowledge Infrastructure) databases to identify relevant monographs and related references from 1974 to 2018. Chinese journals and theses/dissertations were hand searched. 43 studies were recruited. Each research was analyzed for study design, subject characteristics, intervention, selected acupoints, assessment parameters, proposed mechanisms, and results/conclusions.

- An estimated 60–90% of arthritis patients are reported to use CAM including acupuncture.
- There have been several reviews concerning the clinical efficacy of CAM on rheumatic diseases, but the latest review specifically focused on the efficacy of acupuncture for RA conditions was conducted in 2008.
- Seca et al. suggested a protocol for systemic review focused on pain, physical function, and quality of life.
- The selection of acupoints has not been very unanimous according to the authors' clinical experience and TCM theory applied. Some investigations used single acupoint, while some used more than 10 acupoints.
- ST36 is the most frequently used acupoint and was selected in almost every research, followed by GB34, LI4, BL60, GB39, and so forth.

- **Intervention type:** traditional acupuncture with different manual techniques, laser acupuncture, electroacupuncture, buccal acupuncture, auricular electroacupuncture, warm needling with or without moxibustion, and acupoint stimulation with herbs.
- **Modalities used** for control or combined therapy: oral or injected form of Western medication, reflexology, moxibustion, herb steaming, massage, mud and sauna therapy, sham acupuncture, autogenic training, herb iontophoresis, oral use of herbs, and electromagnetic millimeter wave.
- **Primary outcome assessments** are associated with clinical RA symptoms (pain, morning stiffness, and so forth), visual analogue scale (VAS), pain disability index (PDI), TCM symptom scoring, 28 joints activity index (disease activity score, DAS 28), range of motion of the joint (ROM), 10-meter walk test, grip power, American College of Rheumatology 20 (ACR 20, i.e., 20% of clinical improving rate), ACR 50, and ACR 70.
- There are many questionnaires applied in each domain specifically for human RA subjects including quality of life such as the rheumatoid arthritis quality of life questionnaire (RAQoL)
- **Conclusion:** Acupuncture alone or combined with other treatment modalities is beneficial to the clinical conditions of RA without adverse effects reported and can improve function and quality of life and is worth trying. Several important possible mechanisms were summarized including anti-inflammatory effect, antioxidative effect, and regulation of immune system function.

4. DISCUSSION

Western medicine doesn't recognize the concepts of qi and meridians. However, scientific evidence suggests alternate explanations for why acupuncture might provide pain relief. Research offers limited, but in some cases promising, evidence that acupuncture can help with arthritis symptoms. There's a lot of research that says when we put an acupuncture needle into the body, a number of physiological mechanisms occurs. A well-placed needle sets off a cascade of events, producing a signal that travels along the spinal cord to the brain, triggering a release of neurotransmitters called endorphins and enkephalins, which scientists believe reduce the sensation of pain. Research also shows that inserting an acupuncture needle induces the production of cortisol, a hormone that helps control inflammation. Acupuncture may stimulate activity of other pain-relieving chemicals in the body as well. But the question arises do all these biochemical changes relieve sore, stiff joints?

5. CONCLUSION

Even though patients offer anecdotal evidence that acupuncture has helped them, some studies have found acupuncture offers minimal pain and stiffness relief for osteoarthritis (OA). A 2018 *Cochrane* review of six studies evaluating acupuncture for hip OA concluded acupuncture probably has little or no effect in reducing pain or improving function compared to sham acupuncture in people with hip osteoarthritis. On the other hand, a much larger number of studies concluded that acupuncture alone or combined with other treatment modalities is beneficial to the clinical conditions of RA and can improve function and quality of life, and is worth trying. The review cites several possible ways acupuncture effects RA, including its anti-inflammatory effect, antioxidative effect and regulation of immune system function. However, the review acknowledges that there is still inconsistency among trial findings and that further research is needed to evaluate the effects of acupuncture and how it works.

BIBLIOGRAPHY

- Chou, P.-C., & Chu, H.-Y. (2018). Clinical Efficacy of Acupuncture on Rheumatoid Arthritis and Associated. In: Complementary and Alternative Therapies for Inflammatory Diseases Review Article Volume |Article ID 8596918
- Horsten, N. C. A., Ursum, J., Roorda, L. D., Van Schaardenburg, D., Dekker, J., & Hoeksma, A. F. (2010). "Prevalence of hand symptoms, impairments and activity limitations in rheumatoid arthritis in relation to disease duration," *Journal of Rehabilitation Medicine*, vol. 42, no. 10, pp. 916–921, View at: [Publisher Site](#) | [Google Scholar](#)
- Lee, D. M., & Weinblatt, M. E. (2001). "Rheumatoid arthritis," *The Lancet*, vol. 358, no. 9285, pp. 903–911, View at: [Publisher Site](#) | [Google Scholar](#)
- Lin, J.-G., Chou, P.-C., & Chu, H.-Y. (2013). "An exploration of the needling depth in acupuncture: The safe needling depth and the needling depth of clinical efficacy," *Evidence-Based Complementary and Alternative Medicine*, Article ID 740508, 21 pages, View at: [Publisher Site](#) | [Google Scholar](#)
- Macfarlane, G. J., Paudyal, P., Doherty, M. et al. (2012). "A systematic review of evidence for the effectiveness of practitioner-based complementary and alternative therapies in the management of rheumatic diseases: rheumatoid arthritis," *Rheumatology*, vol. 51, no. 9, pp. 1707–1713, View at: [Publisher Site](#) | [Google Scholar](#)

- Ramos, A., Domínguez, J., Gutiérrez, S. (2018). Acupuncture for rheumatoid arthritis. *Medwave*;18(6): e7273 doi: 10.5867/medwave.2018.06.7283
- Wang, C., de Pablo, P., Chen, X., Schmid, C., McAlindon, T. (2008). Acupuncture for pain relief in patients with rheumatoid arthritis: a systematic review. *Arthritis Rheum.* 15;59(9):1249-56. doi: 10.1002/art.24009. PMID: 18759255
- Wang, S.F. (2010). Clinical observation of acupuncture combined with western medicine in treating 80 cases of rheumatoid arthritis. *Hebei Journal of Traditional Chinese Medicine*32: 1372-1373. In Chinese.