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# **Gouty Arthritis**

# Arthrite goutteuse : évaluation de l'acupuncture

# 1. Revues sytématiques et méta-analyses

| ☆☆☆ | Evidence for effectiveness and a specific effect of acupuncture. |
|-----|--|
| ☆☆  | Evidence for effectiveness of acupuncture.                       |
| ☆   | Limited evidence for effectiveness of acupuncture.               |
| Ø   | No evidence or insufficient evidence.                            |

## **1.1. Generic Acupuncture**

#### 1.1.1. Lu 2016 **\***

Lu WW, Zhang JM, Lv ZT, Chen AM. Update on the Clinical Effect of Acupuncture Therapy in Patients with Gouty Arthritis: Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2016. [189444].

| Objective  | The aim of this study is to evaluate the clinical efficacy and safety of acupuncture therapy in the treatment of acute gouty arthritis.   |
|------------|---|
| Methods    | A literature search of PubMed, EMBASE, ISI Web of Science, CENTRAL, and CNKI was<br>conducted from the inception date of each database up to October 2015. Two<br>investigators screened each article independently and were blinded to the findings of<br>the other reviewer. Data was extracted according to the predetermined collection form.<br>Meta-analysis was performed.   |
| Results    | We analyzed data from <b>28 RCTs involving 2237 patients</b> with gouty arthritis.<br>Compared with conventional pharmacological treatments acupuncture was more<br>effective in rendering patients free from symptoms after 24 hours, lowering serum<br>urate, alleviating pain associated with gouty arthritis, and decreasing the ESR; regarding<br>CRP, no statistically significant difference was found. In addition, the frequency of<br>adverse events in acupuncture treatment was lower than that in control group. |
| Conclusion | Based on the findings of our study, we cautiously suggest that <b>acupuncture is an</b><br><b>effective and safe therapy</b> for patients with gouty arthritis. However, the potential<br>beneficial effect of acupuncture might be overstated due to the methodological<br>deficiency of included studies. High quality RCTs with larger scale are encouraged.   |

#### 1.1.2. Lee 2013 **\***\*

Lee WB, Woo SH, Min BI, Cho SH. Acupuncture for gouty arthritis: a concise report of a systematic and meta-analysis approach. Rheumatology (Oxford).2013;52(7):1225-32.[170704].

| Purpose | To assess the effectiveness of acupuncture as complementary therapy for gouty arthritis |
|---------|---|
|         | from randomized controlled trials (RCTs).   |

| Methods   | Five electronic databases, including English and Chinese, were systematically searched<br>until August 2012. All RCTs involving acupuncture in combination with conventional<br>therapy for gouty arthritis were included.  |
|-----------|---|
| Results   | <b>Ten RCTs involving 852 gouty arthritis patients</b> were systematically reviewed.<br>Among them six studies of 512 patients reported a significant decrease in uric acid in<br>the treatment group compared with a control group, while two studies of 120 patients<br>reported no significant decrease in uric acid in the treatment group compared with the<br>control group. The remaining four studies of 380 patients reported a significant decrease<br>in visual analogue scale score in the treatment group. |
| Conclusio | The results of the studies included here suggest that <b>acupuncture is efficacious as</b><br><b>complementary therapy for gouty arthritis patients</b> . More research and well-<br>designed, rigorous and large clinical trials are necessary to address these issues.  |

# **1.2. Special Acupuncture Techniques**

#### 1.2.1. Comparison of Acupuncture techniques

#### 1.2.1.1. Fan 2024

Fan Y, Zhu C, Ji Y, Peng J, Wang G, Wan R, Liu W. Comparison of efficacy of acupuncture-related therapies in treating Acute Gouty Arthritis: A Network Meta-Analysis of Randomized Controlled Trials. Heliyon. 2024 Mar 26;10(7):e28122. https://doi.org/10.1016/j.heliyon.2024.e28122

| Backgound  | and purpose: Acupuncture and moxibustion, as a complementary and alternative<br>therapy, has been widely used in the treatment of acute gouty arthritis (AGA). However,<br>there are various forms of acupuncture and moxibustion, and the curative effect of<br>different forms is different. This study evaluated the clinical efficacy of different<br>acupuncture therapies in treating AGA by network meta-analysis.   |
|------------|---|
| Methods    | Computer searches of English databases (including PubMed, The Cochrane Central<br>Register of Controlled Trials (CENTRAL), Web of Science, Embase) and Chinese<br>databases (including China National Knowledge Infrastructure (CNKI), VIP Database,<br>Wanfang Database and China Biomedical Literature Database) were conducted for<br>randomized controlled trials (RCTs) of acupuncture therapies in treating AGA. We set<br>the search time from the database establishment to May 2022. Data analysis was<br>performed using Stata14.2 software.  |
| Results    | <b>Thirty-two RCTs involving 2434 patient</b> s with AGA were screened out. The results showed that in terms of the improvement of pain visual analogue scale (VAS) scores, the top ones were acupoint application (100%), electroacupuncture + Western medicine (73.5%) and acupuncture + Western medicine (69.2%); In terms of total effective rate, acupoint application (85.2%), acupuncture (75.2%) and acupuncture + Western medicine (63%) ranked the top; In terms of reducing serum uric acid (SUA) levels, the top ones were acupoint application (95%), acupuncture + Western medicine (87.5%) and acupuncture (66.2%); In terms of the reduction of erythrocyte sedimentation rate (ESR), acupuncture (95%), acupoint application (84.7%), and electroacupuncture + Western medicine (52.8%) were the most prominent. |
| Conclusion | The existing evidence shows that acupoint application has more advantages in<br>improving the total effective rate, improving pain and reduce SUA levels, and<br>acupuncture has an advantage in reducing ESR levels and adverse events. However,<br>due to the low qualities of the original studies, the quality of this evidence is poor.<br>Therefore, it is recommended that more scientific research be performed to confirm the<br>efficacy of acupuncture.  |

#### 1.2.2. Combined with Herbal Medicine

#### 1.2.2.1. Liang 2021 ★

Liang H, Wu Y, Zhang W, Deng P, Huang FS, Du X, Chen ZJ, Ma YF. Efficacy and Safety of Acupuncture Combined with Herbal Medicine in Treating Gouty Arthritis: Meta-Analysis of Randomized Controlled Trials. Evid Based Complement Alternat Med. 2021 Dec 30;2021:8161731. doi

| Background  | Gouty arthritis is a common metabolic disease caused by long-term purine metabolism<br>and elevated serum uric acid. In recent years, the incidence of gouty arthritis has been<br>increasing year by year. As an effective method for treating gouty arthritis,<br>acupuncture combined with herbal medicine has been widely used in clinical practice.<br>However, the evidence for the treatment needs to be evaluated through systematic<br>review and meta-analysis. Methods. The Cochrane Library, PubMed, Web of Science,<br>EMBASE, China CBM database, Clinical Trials, CNKI, China Wanfang database, and VIP<br>information database were searched from the establishment of each database to March<br>2021. Randomized controlled trials (RCTs) were included in the study, and the<br>therapeutic effects of acupuncture combined with herbal medicine versus conventional<br>therapy, or acupuncture combined with herbal medicine versus acupuncture/herbal<br>medicine alone were compared in the subjects with gouty arthritis. Two authors<br>screened all references, assessed the risk of bias, and independently extracted the<br>data. The binary outcome was summarized using 95% confidence intervals (CIs) and<br>risk ratios (RRs). The overall quality of the evidence was assessed with hierarchy, and<br>meta-analysis was performed with a random-effects model.  |
|-------------|--|
| Results     | A total of 14 randomized controlled trials (1,065 participants, 540 treatment groups, and 525 control groups) with treatment courses of 5 to 21 days were included. Acupuncture combined with herbal medicine and acupuncture was compared in three trials, acupuncture combined with herbal medicine and conventional therapy was compared in 14 of them, and acupuncture combined with herbal medicine and conventional therapy was compared in 14 of them, and acupuncture combined with herbal medicine and acupuncture symptoms, serological tests, and visual analogue scale (VAS) results) was significantly improved in the acupuncture combined with herbal medicine treatment group (P=0.0005, 95% CI 0.03 to 0.13; 687 participants; 8 trials), and the efficacy in reducing uric acid was also better (P < 0.00001; 95% CI -102.89, -68.37; 100 participants; 2 trials; evidence with moderate quality). The effect of acupuncture combined with herbal medicine was better than that of acupuncture combined with herbal medicine with herbal medicine was better than that of herbal medicine alone (RR 1.21, 95%CI 1.08 to 1.57, 100 participants, 2 trials, evidence with moderate quality), and the effect of acupuncture combined with herbal medicine (P = 0.02, RR 1.14 95%CI 1.02 to 1.27, 2 trials, evidence with moderate quality). The incidence of adverse events was considerably different between the two groups, and the acupuncture combined with herbal medicine group was significantly superior to the control group in terms of adverse events (P < 0.00001; 95% CI (0.08 to 0.32)). |
| Conclusions | The efficacy of acupuncture combined with herbal medicine was better than<br>conventional drug therapy in treating gouty arthritis. The study results must be<br>interpreted with caution due to the high or unclear risk of bias of the trials included in<br>the study. PROSPERO registration number: CRD42020202544. INPLASY registration<br>number: 202090006.   |

#### 1.2.3. Fire Needling and Warm Needling

#### 1.2.3.1. Hwang 2022

Hwang JH, Song A, Song HS. Systematic Review and Meta-Analysis of Efficacy and Safety of Fire Needling and Warm Needling on Acute Gout. J Pharmacopuncture. 2022 Dec 31;25(4):301-316. https://doi.org/10.3831/KPI.2022.25.4.301

| Objectives | This study aimed to evaluate the efficacy and safety of heat stimuli (e.g., fire needling, warm needling) in acupuncture for acute gout.  |
|------------|---|
| Methods    | Four international online databases (PubMed, Cochrane, Embase, and Chinese National<br>Knowledge Infrastructure) were searched to identify randomized, controlled trials (RCTs)<br>that used fire needling and warm needling for acute gout. The methodological quality of<br>the RCTs was evaluated using the Cochrane risk-of-bias (RoB) tool. Thirteen RCTs (840<br>patients) were included and analyzed. Three evaluation tools (total effective rate, uric<br>acid level, and pain score) were mainly used. Comparisons were made between Western<br>medicine (WM) and i) fire needling or warm needling treatment alone, ii) fire needling<br>and bloodletting combination treatment, iii) combination of fire needling, bloodletting,<br>and herbal medicine, iv) warm needling (concurrently). Heat stimuli in acupuncture<br>alone or in combination treatment were more effective in terms of the total efficacy<br>rates, uric acid levels, and pain scores than WM alone. |
| Results    | In all the evaluation tools, the treatment effects in the fire needling alone or warm<br>needling alone treatment group and the fire needling and bloodletting combination<br>intervention group were significantly better than those in the WM control group. The<br>warm needling and WM combination intervention groups also experienced significantly<br>better treatment effects in terms of total efficacy rates and uric acid levels. Only the<br>pain scores in the fire needling, bloodletting, and herbal medicine combination groups<br>demonstrated significant improvement. Only four studies mentioned adverse reactions<br>one reported loss of appetite; three studies reported none. According to the Cochrane<br>RoB tool, most studies showed either high or uncertain RoB.  |
| Conclusion | Heat stimuli during acupuncture could be effective for acute gout. However, as the included studies were regionally biased, more high-quality studies are needed to confirm the level of evidence.  |

#### 1.2.4. Moxibustion

#### 1.2.4.1. Xu 2012 ★

Xu Li, Zheng Chun-Ai. [Moxibustion therapy in the treatment of gout arthritis: a systematic review]. Journal of Clinical Acupuncture and Moxibustion. 2012;28(4):46.[175112].

| Objective | To evaluate the efficacy of moxibustion-therapy for gout.  |
|-----------|--|
| Methods   | As the requirement of EBM ,we electronically searched the CNKI, VIP, WanFang<br>Database, SCI,MEDLINE ,from 2000. 1 to 2011.4, to obtain randomized control trails (<br>RCT),which compared the efficacy of moxi -therapy with western inedicine. Then<br>evaluate the quality of the RCT ,and analyze them with Meta -analyze method. |
| Results   | Seven trials had homogeneity from randomized controlled trials of 620 cases involving seven articles about patients with gout arthritis. And Funnel Plot showed an obvious existence'publication bias.   |

|            | Compared with western medicine . moxi-therapy is more proper for gout, and         |
|------------|--|
| Conclusion | the side -effect is less. However, as the quality and quantily of RCT searched are |
|            | limited,the conclusion is not sure.  |

#### 1.2.5. Electroacupuncture

#### 1.2.5.1. Ni 2024

Ni Z, Xiao Q, Xia Z, Kuang K, Yin B, Peng D. Electroacupuncture for acute gouty arthritis: a systematic review and meta-analysis of randomized controlled trials. Front Immunol. 2024 Jan 4;14:1295154. https://doi.org/10.3389/fimmu.2023.1295154

| Background | Acute gouty arthritis (AGA) is a metabolic disorder in which recurrent pain episodes can<br>severely affect the quality of life of gout sufferers. Electroacupuncture (EA) is a non-<br>pharmacologic therapy. This systematic review aimed to assess the efficacy and safety<br>of electroacupuncture in treating acute gouty arthritis.   |
|------------|---|
| Methods    | We searched eight Chinese and English databases from inception to July 30, 2023, and 242 studies were retrieved.  |
| Results    | Finally, <b>15 randomized controlled trials (n=1076)</b> were included in a meta-analysis using Review Manager V.5.4.1. meta-analysis results included efficacy rate, visual rating scale (VAS) for pain, serum uric acid level (SUA), immediate analgesic effect, and incidence of adverse events. Electroacupuncture (or combined non-pharmacologic) treatment of AGA was significantly different from treatment with conventional medications (RR = 1.14, 95% confidence interval CI = 1.10 to 1.19, P < 0.00001). The analgesic effect of the electroacupuncture group was superior to that of conventional Western drug treatment (MD = -2.26, 95% CI = -2.71 to -1.81, P < 0.00001). The electroacupuncture group was better at lowering serum uric acid than the conventional western drug group (MD =-31.60, CI -44.24 to -18.96], P < 0.00001). In addition, electroacupuncture combined with Western drugs had better immediate analgesic effects than conventional Western drug treatment (MD = -1.85, CI -2.65 to -1.05, P < 0.00001). Five studies reported adverse events in the electroacupuncture group versus the drug group, including 19 cases of gastrointestinal symptoms and 6 cases of neurological symptoms (RR = 0.20, 95% CI = 0.04 to 0.88, P = 0.03). |

# 2. Clinical Practice Guidelines

 $\oplus$  positive recommendation (regardless of the level of evidence reported)  $\emptyset$  negative recommendation (or lack of evidence)

## 2.1. American College of Physicians (ACP, USA) 2017 Ø

Qaseem A, Harris RP1, Forciea MA1; Clinical Guidelines Committee of the American College of Physicians.. Management of Acute and Recurrent Gout: A Clinical Practice Guideline From the American College of Physicians. Ann Intern Med. 2017;166(1):58-68. [198008].

Evidence from 5 systematic reviews was insufficient to determine the effectiveness of traditional Chinese medicine, including herbs and acupuncture, on symptomatic outcomes.

#### 2.2. Agency for Healthcare Research and Quality (ARQ, USA) 2016 Ø

Management of Gout. Agency for Healthcare Research and Quality (ARQ, USA). 2016. 199p. [192681]..

Diagnosis and Management of Gout: Current State of the Evidence. Agency for Healthcare Research and Quality. 2016:4p. [197936].

The Strength of Evidence is insufficient to support or refute the effectiveness of Traditional Chinese Medicine (TCM; including herbs and acupuncture) on symptomatic outcomes.

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