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Acupuncture in the Treatment of Gout (Acute Gout): A Critical Synthesis of the Evidence

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ABSTRACT

Introduction: Gout is the most common inflammatory arthritis in adults, marked by recurrent painful flares, joint damage, and tophi formation. Standard management includes treatment of acute attacks (NSAIDs, colchicine, corticosteroids) and urate-lowering strategies based on a treat-to-target approach. Acupuncture has been proposed as an adjunctive therapy due to its potential analgesic and anti-inflammatory effects.

Objective: To evaluate the efficacy and safety of acupuncture (manual, electroacupuncture, and thermal variations) in acute gout, integrating evidence from randomized controlled trials (RCTs), meta-analyses, and guidelines.

Methods: A structured narrative review was conducted using PubMed/MEDLINE, Web of Science, Cochrane Library, SciELO, and Google Scholar (through September 2025). Included studies comprised RCTs, systematic reviews, and guidelines. Extracted data included country, sample size, intervention type and dose, comparators, outcomes (pain, serum urate, inflammatory markers), follow-up, and adverse events. Risk of bias was assessed using Cochrane criteria.

Results: Evidence suggests acupuncture and electroacupuncture improve pain and may reduce serum urate and inflammatory markers, especially when combined with pharmacological therapy. Adverse events are rare and mild. However, evidence certainty is limited due to heterogeneity and risk of bias.

Conclusion: Acupuncture appears to be a safe adjunct in acute gout management, best used alongside standard therapy with monitoring of serum urate targets.

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INTRODUCTION

Gout is a metabolic and inflammatory disease resulting from the deposition of monosodium urate crystals in joints and periarticular tissues. Clinically, it manifests as acute episodes of extremely painful arthritis, most frequently affecting the first metatarsophalangeal joint of the hallux. Over time, the disease may progress to chronic forms, with the development of tophi, joint deformities, and significant functional impairment. It is the most prevalent inflammatory arthritis in adults, with a globally increasing prevalence driven by rising life expectancy, dietary changes, and its association with comorbidities such as obesity, hypertension, diabetes, and chronic kidney disease [1–3].

The current management of gout is guided by international recommendations, including those of the American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR). Treatment of acute flares includes nonsteroidal anti-inflammatory drugs (NSAIDs), colchicine, or corticosteroids, while prevention of recurrences and complications involves sustained reduction of serum urate, typically with allopurinol or febuxostat. The recommended therapeutic target is to maintain serum urate levels below 6 mg/dL and, in severe cases, below 5 mg/dL, an approach known as the "treat-to-target" strategy [1,2]. Despite the available therapeutic arsenal, many patients present contraindications to medications, therapeutic failures, or significant adverse effects, which justifies the search for safe and complementary alternatives.

Acupuncture, a practice originating from Traditional Chinese Medicine, has attracted increasing interest in the treatment of gout. Studies suggest that it may promote rapid analgesia, reduce inflammation, and, in some cases, assist in lowering serum urate levels. Reviews and meta-analyses published over the past two decades, including network meta-analyses, have reported promising results, particularly when acupuncture is combined with pharmacological therapies. However, challenges remain, including heterogeneity of protocols, small sample sizes, and potential methodological bias [4–8].

The present study aims to critically evaluate the efficacy and safety of acupuncture in acute gout by synthesizing evidence from randomized clinical trials, systematic reviews, and recent meta-analyses, and by positioning this intervention within the context of contemporary gout management.

METHODS

A systematized narrative review was conducted including publications up to September 2025. Searches were performed in PubMed/MEDLINE, Web of Science, the Cochrane Library, SciELO, and Google Scholar using combinations of descriptors such as gout, acute gouty arthritis, acupuncture, electroacupuncture, fire needling, and warm needling. Methodological terms including randomized controlled trial, systematic review, and meta-analysis were also applied to refine the search results. In addition, the reference lists of the selected studies were manually screened to identify additional relevant articles.

Randomized controlled trials comparing acupuncture (manual acupuncture, electroacupuncture, or thermal techniques) with pharmacological therapy, sham acupuncture, or combinations of these approaches were included. Systematic reviews, meta-analyses, and network meta-analyses related to acupuncture in acute gout were also selected. International clinical guidelines were included to contextualize the findings and the pharmacological comparators.

From each study, data were extracted regarding country, sample size, participant characteristics, acupuncture modality, number and frequency of sessions, comparators, clinical outcomes (such as pain measured by the visual analog scale [VAS]), laboratory outcomes (serum urate, C-reactive protein [CRP], erythrocyte sedimentation rate [ESR]), duration of follow-up, and occurrence of adverse events.

Risk of bias was assessed according to the domains of the Cochrane Collaboration, including randomization procedures, allocation concealment, blinding of participants and outcome assessors, incomplete outcome data, and selective reporting. Studies judged to have a high risk of bias were included but interpreted with caution, as also highlighted in the main systematic reviews currently available.

RESULTS

A total of 32 randomized controlled trials and more than 15 systematic reviews or meta-analyses evaluating acupuncture in the treatment of acute gout were identified. Most studies were conducted in China, with sample sizes ranging from 40 to 200 participants, a mean age between 40 and 65 years, and a predominance of male participants, reflecting the epidemiological profile of the disease. The modalities assessed included manual acupuncture, electroacupuncture, and thermal techniques such as fire needling. Treatment frequency ranged from two to five sessions per week, with an average treatment duration of 7 to 14 days. Comparators included standard pharmacological treatment, such as NSAIDs and colchicine, sham acupuncture, or combinations of these interventions. Table 1 summarizes the included articles, while Table 2 provides an overview of study methodologies and the acupuncture points used across these trials.

A meta-analysis published in 2024 in Frontiers in Immunology included 15 randomized trials involving 1,076 participants. The study demonstrated that electroacupuncture was superior to pharmacotherapy alone in reducing pain, with a clinically meaningful mean difference in the VAS score. Significant reductions were also observed in serum urate levels and in the rate of adverse events compared with medications. When electroacupuncture was combined with pharmacological therapy, the effects were even more pronounced, suggesting a synergistic action [4].

Thermal techniques, such as fire needling, were analyzed in a systematic review published in 2022, which included 13 trials and 840 participants. The results indicated significant improvements in pain, higher clinical response rates, and reductions in serum urate levels, both when used alone and when combined with bloodletting or medications. Adverse events were minimal, generally limited to mild local pain at the application site and occasional bruising. However, the authors emphasized that most trials presented a high or unclear risk of bias, particularly regarding blinding and allocation concealment [5].

A network meta-analysis published in 2024 in Heliyon, including 32 trials with 2,434 patients, compared different acupuncture modalities and therapeutic combinations. The best results for pain relief were obtained with electroacupuncture combined with pharmacotherapy and with direct application at specific acupuncture points. For the reduction of serum urate levels, the combination of acupuncture with medications showed the greatest effectiveness. Regarding reduction of erythrocyte sedimentation rate (ESR), acupuncture alone appeared to be the most effective modality. Despite these findings, the overall quality of evidence was classified as low, and larger, better-designed trials were recommended [6].

Among earlier studies, a notable Chinese randomized trial from 2006 including 72 participants compared electroacupuncture at frequencies of 2 Hz and 100 Hz with conventional pharmacological treatment. Low-frequency electroacupuncture (2 Hz) demonstrated a faster onset of pain relief, longer duration of analgesic effect, and a more pronounced reduction in serum urate levels, with short-term efficacy comparable to that of medications [10].

In addition to traditional acupuncture modalities, some studies evaluated therapeutic bloodletting as a complementary strategy. A 2021 meta-analysis, including 12 studies and 894 patients, showed that bloodletting significantly improved pain and reduced C-reactive protein (CRP) levels, while also demonstrating a more favorable safety profile than pharmacological therapy. However, the results related to serum urate levels and ESR were less consistent [9].

Earlier reviews have reinforced these findings. A 2016 meta-analysis, including 28 trials and 2,237 participants, found that acupuncture was superior to medications in achieving rapid symptom relief, reducing serum urate levels, and improving pain, with a lower incidence of adverse events. Nevertheless, the authors highlighted methodological limitations in the primary studies, which may have overestimated the beneficial effects [7]. Another synthesis published in 2013, analyzing 10 trials, concluded that acupuncture, when used as an adjunctive therapy, contributed to significant reductions in pain and serum urate levels [8].

Taken together, these results suggest that acupuncture may be effective as an adjunct to standard therapy for acute gout, accelerating pain relief, enhancing the effects of medications, and improving laboratory parameters. However, interpretation of these findings should take into account the methodological limitations of many trials, the heterogeneity of treatment protocols, and the need for larger multicenter studies to confirm these potential benefits.

DISCUSSION

The present findings are highly relevant, as severe pain is the most debilitating symptom during gout attacks, and many patients have contraindications or intolerance to NSAIDs and corticosteroids, making the use of acupuncture as a complementary medical approach particularly relevant in this context. Thus, the results of this analysis suggest that acupuncture—particularly electroacupuncture—may play an important role as an adjunctive treatment for acute gout. One of the main advantages observed across studies was the significant reduction in pain; in many cases, this reduction was even greater than that achieved with medications alone and, in certain situations, produced faster and longer-lasting effects [4–6,10].

Beyond pain relief, recent studies have shown that acupuncture treatment may also lead to reductions in serum uric acid levels and inflammatory markers such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). These effects have a plausible biological basis, as acupuncture is known to modulate neuroimmune pathways, influencing pro- and anti-inflammatory cytokines, as well as affecting both local and systemic circulation [4,7]. Improvements in laboratory parameters suggest that the benefits of acupuncture may extend beyond symptomatic relief, also contributing to the control of underlying inflammatory processes.

Recent network analyses have shown that the combination of acupuncture with pharmacotherapy yields better outcomes than the use of either modality alone. This finding underscores the importance of considering acupuncture as part of a comprehensive treatment strategy, consistent with international guidelines for gout management [1,2,6]. Such synergistic interaction may also allow reduction of medication doses and minimize potential adverse effects—particularly in patients with cardiovascular disease or chronic kidney disease.

Although the results are encouraging, the data should be interpreted with caution. Several studies present methodological limitations, such as inadequate blinding, incomplete descriptions of randomization procedures, and the absence of robust control groups. In addition, most studies were conducted in China, which may limit the generalizability of the findings to other populations. The diversity of acupuncture protocols—including variations in selected points, frequency, and duration of sessions—also makes standardization of results challenging.

The safety profile of acupuncture appears favorable, given the low incidence of reported adverse events, which are generally mild and transient, such as local pain at the needle insertion site or minor bruising [5–9]. For this reason, acupuncture may represent an attractive option for patients who cannot use medications because of contraindications or who experience significant adverse effects from conventional treatments.

When compared with conventional pharmacological therapies, acupuncture should be considered not as a replacement for standard medical care but rather as an additional therapeutic resource aimed at improving patient well-being. Although medications remain essential for controlling acute flares and preventing recurrence, acupuncture may provide meaningful complementary benefits, particularly by offering rapid pain relief and improving quality of life. This integrative strategy reflects the principles of

integrative medicine, which advocates the harmonious combination of evidence-based therapeutic approaches to optimize patient care and health outcomes [1,4,7].

Future research should prioritize multicenter trials with larger sample sizes and rigorous methodologies, including appropriate blinding and control groups, as well as standardized acupuncture protocols. It would also be important to investigate long-term effects and evaluate outcomes related to disease progression and prevention of recurrent flares. Studies exploring underlying biological mechanisms—such as cytokine modulation and neuroimmune pathways—may further clarify the observed therapeutic effects.

CONCLUSION

In summary, acupuncture appears to be a safe intervention with potential effectiveness in the management of acute gout when used in conjunction with conventional treatment. Although current evidence is promising, many studies still present methodological limitations, underscoring the need for more robust research to define more precisely the role of acupuncture in clinical practice.

DECLARATIONS

Ethics Approval and Consent to Participate

This study is a narrative systematic review based exclusively on previously published studies and publicly available data. Therefore, no ethical approval from an institutional review board or ethics committee was required. No human participants or animals were directly involved in this research.

Consent for Publication

Not applicable.

Availability of Data and Materials

All data analyzed in this study are derived from previously published articles available in scientific databases, including PubMed/MEDLINE, Web of Science, Cochrane Library, SciELO, and Google Scholar. No new datasets were generated.

Competing Interests

The author declares that there are no competing interests related to this study.

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Authors' Contributions

Jozélio Freire de Carvalho: Conceptualization of the study, study design, supervision, critical interpretation of the evidence, drafting of the manuscript, and final scientific revision of the article.

Walter Viterbo: Literature search and screening of articles in the database, data extraction from the selected studies, organization of the evidence, preparation of the tables, and review.

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Artificial Intelligence Statement

Artificial intelligence tools were used solely to assist with language editing and translation during manuscript preparation. The author takes full responsibility for the content, interpretation, and scientific integrity of the work.

Patient Consent Statement

Not applicable, as this study did not involve individual patient data.

Clinical Trial Registration

Not applicable.

Ethical Standards

The study was conducted in accordance with internationally accepted standards for scientific integrity and responsible reporting of research.

REFERENCES

1. FitzGerald JD, Dalbeth N, Mikuls T, Brignardello-Petersen R, Guyatt G, Abeles AM, et al. 2020 American College of Rheumatology Guideline for the Management of Gout. Arthritis Care Res (Hoboken). 2020 Jun;72(6):744-760. doi: 10.1002/acr.24180. Epub 2020 May 11. Erratum in: Arthritis Care Res (Hoboken). 2020 Aug;72(8):1187. doi: 10.1002/acr.24401. Erratum in: Arthritis Care Res (Hoboken). 2021 Mar;73(3):458. doi: 10.1002/acr.24566. PMID: 32391934; PMCID: PMC10563586.
2. Richette P, Doherty M, Pascual E, Barskova V, Becce F, Castañeda-Sanabria J, et al. 2016 updated EULAR evidence-based recommendations for the management of gout. Ann Rheum Dis. 2017 Jan;76(1):29-42. doi: 10.1136/annrheumdis-2016-209707. Epub 2016 Jul 25. PMID: 27457514.

3. GBD 2021 Gout Collaborators. Global, regional, and national burden of gout, 1990-2020, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. Lancet Rheumatol. 2024 Aug;6(8):e507-e517. doi: 10.1016/S2665-9913(24)00117-6. Epub 2024 Jul 9. Erratum in: Lancet Rheumatol. 2024 Nov;6(11):e749. doi: 10.1016/S2665-9913(24)00303-5. PMID: 38996590; PMCID: PMC11263476.
4. 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. doi: 10.3389/fimmu.2023.1295154. PMID: 38239361; PMCID: PMC10794621.
5. 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. doi: 10.3831/KPI.2022.25.4.301. PMID: 36628350; PMCID: PMC9806158.
6. 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. doi: 10.1016/j.heliyon.2024.e28122. PMID: 38576580; PMCID: PMC10990962.
7. 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;2016:9451670. doi: 10.1155/2016/9451670. Epub 2016 Oct 25. PMID: 27847529; PMCID: PMC5099464.
8. 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 Jul;52(7):1225-32. doi: 10.1093/rheumatology/ket013. Epub 2013 Feb 18. PMID: 23424263.
9. Li SH, Hu WS, Wu QF, Sun JG. The efficacy of bloodletting therapy in patients with acute gouty arthritis: A systematic review and meta-analysis. Complement Ther Clin Pract. 2022 Feb;46:101503. doi: 10.1016/j.ctcp.2021.101503. Epub 2021 Nov 11. PMID: 34814062.
10. Zou R, Zhang HX, Zhang TF. Comparative study on treatment of acute gouty arthritis by electroacupuncture with different frequency. Chin J Integr Med. 2006 Sep;12(3):212-4. doi: 10.1007/BF02836525. PMID: 17005084.

Table 1. Summary of acupuncture studies in gout.

Author / Year	Country	Study Type	N (Participants)	Intervention (Modality)	Comparator	Sessions / Frequency	Main Outcomes	Conclusions
Ni et al., 2024 [4]	China	Systematic Review + Meta-analysis	15 RCTs (n = 1,076)	Electroacupuncture alone or combined with drugs	Pharmacotherapy alone	1–2×/day, 7–14 days	Pain (VAS), serum urate, adverse events	EA superior to pharmacotherapy for pain and urate reduction; fewer adverse events; EA + drugs enhances effect
Hwang et al., 2022 [5]	China	Systematic Review + Meta-analysis	13 RCTs (n = 840)	Fire/Warm needling alone or combined	Sham, drugs, or bloodletting	1–2×/day, 7–10 days	Pain (VAS), response rate, serum urate	Benefits in pain and urate reduction; mild adverse events; high or unclear risk of bias
Fan et al., 2024 [6]	China	Network Meta-analysis (NMA)	32 RCTs (n = 2,434)	EA + drugs, acupuncture alone, fire needling, bloodletting	Drugs, sham	Variable (5–14 days)	Pain (VAS), serum urate, ESR	EA + drugs superior for pain; acupuncture + drugs better for urate reduction; overall low-quality evidence
Lu et al., 2016 [7]	China	Systematic Review + Meta-analysis	28 RCTs (n = 2,237)	Manual acupuncture alone or combined	Drugs alone	Variable	Pain, serum urate, ESR, adverse events	Acupuncture superior to drugs for pain and urate reduction; fewer adverse events
Lee et al., 2013 [8]	China	Systematic Review + Meta-analysis	10 RCTs (n not reported)	Adjunctive manual acupuncture	Pharmacotherapy alone	Variable	Pain, serum urate	Significant benefit as adjunctive therapy; need for larger RCTs
Liu et al., 2021 [9]	China	Systematic Review + Meta-analysis	12 RCTs (n = 894)	Therapeutic bloodletting	Drugs	Variable	Pain (VAS), CRP, serum urate	Bloodletting effective for pain and CRP reduction; safer than drugs

Author / Year	Country	Study Type	N (Participants)	Intervention (Modality)	Comparator	Sessions / Frequency	Main Outcomes	Conclusions
Zou et al., 2006 [10]	China	Randomized Clinical Trial	72	EA 2 Hz vs. EA 100 Hz	Pharmacotherapy alone	1–2×/day, 7 days	Pain (VAS), serum urate	EA 2 Hz showed better analgesia and urate reduction; faster effect than drugs

EA: Electroacupuncture; Fire/Warm needling: thermal acupuncture technique using heat stimulation; VAS: Visual Analogue Scale; ESR: Erythrocyte Sedimentation Rate; CRP: C-reactive protein.

Table 2. Methodological details and acupuncture points used in gout studies.

Study (Year)	Inclusion Criteria	Acupuncture Points Used	Modality / Technique	Sessions (Frequency / Duration)	Blinding	Outcomes Assessed
Ni et al., 2024 [4]	Acute gout diagnosis according to ACR/EULAR criteria, elevated serum urate, severe pain (VAS ≥ 6)	ST36, SP6, LI4, LR3, GB34, Ashi points	Electroacupuncture alone or combined with drugs	1–2 times/day for 7–14 days	Patients and assessors blinded in part of the RCTs	Pain (VAS), serum urate, adverse events
Hwang et al., 2022 [5]	Acute gout flare within 48 h of onset, age 18–75 years	Fire needling at pain points, ST36, SP9, Ashi points	Fire needling (thermal needle) ± bloodletting	1–2 times/day for 7–10 days	No blinding; randomization described	Pain (VAS), clinical response rate, serum urate
Fan et al., 2024 [6]	RCTs with acute gout diagnosis (ACR/EULAR) in adults	Variable among the 32 included studies	Manual acupuncture, EA, fire needling, bloodletting, or combinations	Total treatment duration 5–14 days	Variable; most without full blinding	Pain (VAS), serum urate, ESR
Lu et al., 2016 [7]	Clinical and laboratory diagnosis of acute gout, severe pain, elevated serum urate	ST36, SP9, GB34, LI11, LR3	Manual acupuncture alone or combined with drugs	1–2 times/day, 10–14 days	Partially blinded in some studies	Pain, serum urate, ESR, adverse events
Lee et al., 2013 [8]	Patients with confirmed gout flare, no prior acupuncture treatment	Classical acupuncture points associated with Ashi points	Adjunctive manual acupuncture	Variable (up to 2 weeks)	Few studies with blinding	Pain, serum urate
Liu et al., 2021 [9]	Confirmed acute gout, severe pain, elevated CRP	Bloodletting points at affected sites + systemic points	Therapeutic bloodletting alone or combined	1 session/day, 7–10 days	No blinding	Pain (VAS), CRP, serum urate
Zou et al., 2006 [10]	Clinical diagnosis of acute gout, pain ≥ 7 on VAS, no severe comorbidities	ST36, SP9, LI11, LR3, Ashi points	EA 2 Hz vs. EA 100 Hz	1–2 times/day, 7 consecutive days	No formal blinding; independent assessor	Pain (VAS), serum urate

ACR – American College of Rheumatology, Ashi points – tender or painful points identified by palpation in Traditional Chinese Medicine, CRP – C-reactive protein, EA – electroacupuncture, ESR – erythrocyte sedimentation rate, GB34 – Gallbladder 34 (Yanglingquan), LI4 – Large Intestine 4 (Hegu), LI11 – Large Intestine 11 (Quchi), LR3 – Liver 3 (Taichong), RCT – randomized controlled trial, SP6 – Spleen 6 (Sanyinjiao), SP9 – Spleen 9 (Yinlingquan), ST36 – Stomach 36 (Zusanli), VAS – Visual Analogue Scale.