RESEARCH PAPER

EFFECTIVENESS OF HOMOEOPATHIC MEDICINE RHUS TOXICODENDRON IN THE MANAGEMENT OF POST-FEVER ARTHRALGIA: A PROSPECTIVE OBSERVATIONAL STUDY

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Abstract

Background

Post-fever arthralgia is a frequently encountered clinical condition that persists after the resolution of acute febrile illnesses, particularly viral infections such as chikungunya, dengue, influenza, and other viral fevers. Although the acute infection subsides, many patients continue to experience persistent joint pain, stiffness, reduced mobility, and impaired quality of life for several weeks or even months. Conventional management mainly consists of analgesics, NSAIDs, physiotherapy, and supportive measures. Homoeopathy adopts an individualized therapeutic approach. Rhus toxicodendron is commonly indicated for musculoskeletal disorders characterized by stiffness and pain relieved by continued motion. This study evaluated its effectiveness in post-fever arthralgia.

Objective

To evaluate the effectiveness of homoeopathic medicine Rhus toxicodendron in the management of post-fever arthralgia using the Numeric Pain Rating Scale (NPRS) and WHOQOL-BREF questionnaire.

Methods

A prospective observational study was conducted among 40 patients diagnosed with post-fever arthralgia. Eligible patients aged 18–60 years were enrolled after informed consent. Individualized homoeopathic treatment with Rhus toxicodendron where indicated was prescribed. Patients were followed weekly for four weeks. Outcomes were assessed using NPRS and WHOQOL-BREF. Statistical analysis was performed using paired t-test.

Results

A total of 40 participants completed the 4-week study (mean age: 36.9 ± 10.8 years; 55% female). Chikungunya was the most common preceding febrile illness (40%), followed by viral fever (27.5%), dengue (25%), and malaria (7.5%). The mean Numeric Pain Rating Scale (NPRS) score significantly decreased from 7.3 ± 1.1 at baseline to 2.2 ± 1.0 after treatment (mean difference: 5.1; $p < 0.001$). Significant improvements were also observed in all WHOQOL-BREF domains, including physical, psychological, social, and environmental health ($p < 0.001$ for all). No serious adverse events were reported, and all participants completed follow-up.

Conclusion

Individualized homoeopathic treatment with Rhus toxicodendron, where indicated, may contribute to symptomatic improvement in post-fever arthralgia. Larger randomized controlled trials are warranted.

Keywords: Post-fever arthralgia, Rhus toxicodendron, Homoeopathy, Numeric Pain Rating Scale, WHOQOL-BREF, Joint pain, Observational study

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Introduction

Fever is a physiological reaction to bacterial, viral, parasitic, or other infectious agents and is one of the most prevalent signs of infectious diseases in the globe. (El-Radhi, A. S ,2018) Although the acute infection has completely resolved, a sizable percentage of patients still have persistent musculoskeletal symptoms, despite the

fact that medical advancements have significantly improved the management of acute febrile infections. Post-fever arthralgia is one of the most prevalent of these aftereffects and has been identified as a significant contributor to extended morbidity, functional impairment, and worse quality of life.(Herrero, L. J. 2026)

The complicated pathophysiology of post-fever arthralgia may include immune complex deposition, molecular mimicry, cytokine-mediated inflammation, prolonged immunological activation, and residual tissue damage after acute infection.

(Thacharodi, A.,2024) Diffuse joint pain, morning stiffness, discomfort, swelling, exhaustion, and limited mobility—all of which can last for weeks or months—are common complaints from patients. ("Rheumatoid Arthritis Symptoms," 2011)

Patients who have prolonged joint pain after a fever may exhibit a number of signs. The severity of pain can range from mild discomfort to excruciating, debilitating pain. Stiffness, oedema, pain, and decreased range of motion are common complaints in the affected joints. Moreover, the pain may worsen with physical activity or exposure to cold temperatures. To exacerbate the situation, some people may also feel fatigued and have weak muscles.(Revaz, S,2006)

A thorough clinical history, temporal correlation with a recent febrile illness, physical examination, and relevant laboratory testing are all necessary for the diagnosis. Rest, physical therapy, NSAIDs, analgesics, and lifestyle changes are all part of conventional treatment; nevertheless, long-term pharmaceutical therapy may have negative side effects.(Grundy, B. S,2022) Similia similibus curentur is the foundation of the holistic medical system known as homoeopathy. Instead of focusing only on disease labels, individualised prescribing takes into account all of the symptoms.(Teixeira, M. Z.,2022). Rhus toxicodendron is traditionally used to treat post-fever arthralgia symptoms, such as pain and stiffness that worsens after rest and is alleviated by persistent movement. (Allen, H. C. ,2008)

In homoeopathy, there are various ways to alleviate joint pain after fever. It is commonly known that homoeopathic drugs help lessen inflammation and pain in the joints, allowing range of motion to be restored and improving overall health. In addition to treating the joints, these drugs boost immunity, which is crucial for reducing joint discomfort following a fever. ("Joint Pain After a Fever," 2023.)

Poison ivy, or Rhus toxicodendron, is a homoeopathic medicinal plant. Even while the plant itself may irritate skin, when handled correctly in homoeopathic form, it provides a powerful treatment for joint pain and other associated symptoms. This special preparation technique offers the plant's therapeutic qualities in a controlled and safe way. Traditional medicine frequently uses nonsteroidal anti-inflammatory medications (NSAIDs) and physical therapy to treat joint discomfort following a fever. These techniques may have some negative effects even though they can offer some relief. This is where homoeopathic remedies, including rhus toxicodendron, might provide a different strategy that targets the underlying source of the discomfort.

Although observational studies and historical reports suggest possible benefits of homoeopathy in musculoskeletal disorders, robust evidence specific to post-fever arthralgia remains limited. (Hamre, H. J,2023),Therefore, the present prospective observational study was undertaken to evaluate the effectiveness of individualized homoeopathic treatment with Rhus toxicodendron in patients with post-fever arthralgia using NPRS and WHOQOL-BREF as outcome measures.

Materials and Methods

Study Design

A prospective, observational, single-center clinical study was conducted to evaluate the effectiveness of individualized homoeopathic treatment with Rhus toxicodendron, where indicated, in patients suffering from post-fever arthralgia. The study assessed changes in pain intensity and quality of life over a four-week follow-up period using validated clinical assessment tools.

Study Setting

The study was carried out in the Outpatient Department (OPD) and Inpatient Department (IPD) of Pt. Jawaharlal Nehru State Homoeopathic Medical College and Hospital, Kanpur, Uttar Pradesh, India.

Study Duration

The total study duration was three months. Each participant was followed for four consecutive weeks with weekly clinical assessments.

Study Population

Patients presenting with persistent joint pain after recovery from an acute febrile illness were screened for eligibility based on clinical history, examination, and relevant laboratory investigations whenever required.

Sample Size

A total of 40 patients fulfilling the eligibility criteria were enrolled in the study.

Sampling Technique

Consecutive sampling was adopted. Eligible patients attending the OPD or IPD who fulfilled the inclusion criteria and provided written informed consent were recruited until the desired sample size was achieved.

Inclusion Criteria
1. Male and female patients aged 18–60 years.
2. Persistent joint pain for at least seven days after subsidence of fever.
3. Willingness to participate with written informed consent.
4. Adequate cognitive ability to complete the assessment scales.

Exclusion Criteria
1. Patients below 18 years or above 60 years.
2. Pregnant and lactating women.
3. Patients with chronic inflammatory arthritis, severe systemic illnesses, or psychiatric disorders.
4. Patients receiving regular anti-inflammatory allopathic medication.
5. Patients unwilling to participate or unable to comply with follow-up.
6. Patients with severe joint deformity or debilitating complications.

Baseline Evaluation
Each participant underwent detailed case taking, history of recent febrile illness, physical and systemic examination, assessment of joint involvement, aggravating and relieving factors, and individualized homoeopathic evaluation. CBC and other investigations were advised whenever clinically indicated.

Intervention
Individualized homoeopathic prescriptions were made according to the totality of symptoms. Rhus toxicodendron was prescribed whenever indicated. Potency, repetition, and follow-up prescriptions were individualized according to homoeopathic principles. Lifestyle advice including hydration, nutrition, and gentle exercises was provided.

Follow-up
Patients were reviewed every seven days for four weeks. Pain intensity, stiffness, tenderness, functional ability, compliance, and any adverse events were documented during each follow-up.

Outcome Measures
Primary Outcome: Change in Numeric Pain Rating Scale (NPRS).
Secondary Outcome: Improvement in quality of life assessed using the WHOQOL-BREF questionnaire covering Physical Health, Psychological Health, Social Relationships, and Environment domains.

Data Collection
Data collected included age, gender, occupation, type of preceding fever, duration of arthralgia, joints involved, baseline and post-treatment NPRS scores, WHOQOL-BREF scores, and clinical observations.

Statistical Analysis
Continuous variables will be expressed as mean ± standard deviation, while categorical variables will be presented as frequencies and percentages. Baseline and post-treatment scores will be compared using the paired Student's t-test. A p-value <0.05 will be considered statistically significant.

Ethical Considerations
Ethical approval was obtained from the Institutional Ethics Committee of Pt. Jawaharlal Nehru State Homoeopathic Medical College and Hospital, Kanpur. Written informed consent was obtained from all participants. Confidentiality of patient information was maintained throughout the study.

Overview

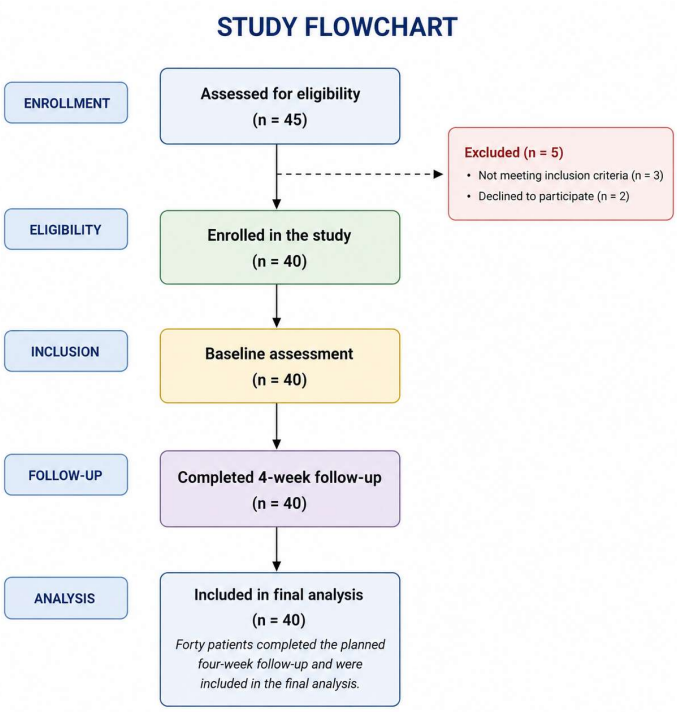

Fig1:Study flowchart

A total of 45 patients were assessed for eligibility. Of these, 5 patients were excluded, including 3 who did not meet the inclusion criteria and 2 who declined to participate. The remaining 40 participants were enrolled, completed the baseline assessment, received the planned treatment, and successfully completed the 4-week follow-up. All 40 participants were included in the final statistical analysis. No participants were lost to follow-up or excluded after enrollment. Pain intensity was evaluated using the Numeric Pain Rating Scale (NPRS), while quality of life was assessed using the WHOQOL-BREF questionnaire. Statistically significant improvement was observed in both outcome measures.

Table 1. Baseline Demographic Characteristics (n = 40)

Variable	N	%
Male	18	45.0
Female	22	55.0
18–30 years	12	30.0
31–45 years	18	45.0
46–60 years	10	25.0

Mean age: 36.9 ± 10.8 years.

Table 3. Numeric Pain Rating Scale (NPRS)

Assessment	Mean ± SD	Mean Difference	p-value
Baseline	7.3 ± 1.1		
After 4 weeks	2.2 ± 1.0	5.1	<0.001

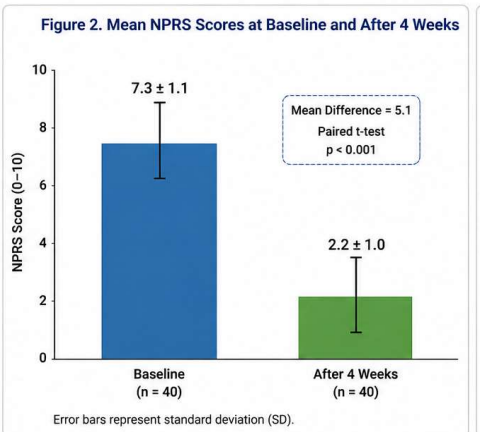

Figure 2. Mean NPRS Scores at Baseline and After 4 Weeks

The bar graph compares the mean Numeric Pain Rating Scale (NPRS) scores at baseline and after four weeks of treatment. Pain intensity decreased significantly from 7.3 ± 1.1 to 2.2 ± 1.0, representing a mean reduction of 5.1 points ($p < 0.001$). Error bars represent the standard deviation.

Table 4. WHOQOL-BREF Raw Domain Scores

Domain (Raw Score)	Baseline Mean ± SD	After Treatment Mean ± SD	p-value
Physical Health (Max 35)	18.9 ± 2.8	28.7 ± 2.6	<0.001
Psychological (Max 30)	16.8 ± 2.4	24.2 ± 2.1	<0.001
Social Relationships (Max 15)	8.4 ± 1.5	12.6 ± 1.2	<0.001
Environment (Max 40)	22.3 ± 3.1	31.5 ± 2.9	<0.001

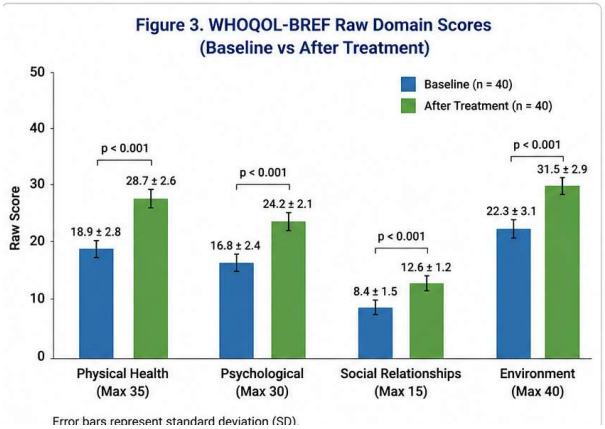

Figure 3. WHOQOL-BREF Raw Domain Scores

The grouped bar graph illustrates changes in WHOQOL-BREF raw scores before and after treatment. Significant improvements were observed in all four domains—physical health, psychological health, social relationships, and environmental health—following four weeks of individualized homoeopathic treatment ($p < 0.001$ for all domains). Error bars represent the standard deviation.

Table 4. Clinical Characteristics

Characteristic	N	%
Chikungunya	16	40.0
Dengue	10	25.0
Viral fever	11	27.5

Malaria	3	7.5
Polyarthralgia	24	60.0
Oligoarthralgia	16	40.0
Mean duration of arthralgia	18.4 ± 6.2 days	-

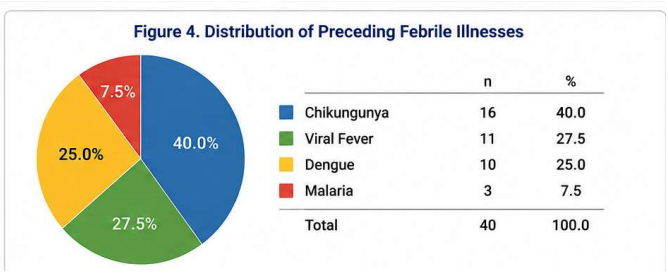

Figure 4. Distribution of Preceding Febrile Illnesses

The pie chart shows the distribution of preceding febrile illnesses among the 40 participants. Chikungunya was the most common diagnosis (40.0%), followed by viral fever (27.5%), dengue (25.0%), and malaria (7.5%). The chart summarizes the etiological profile of patients presenting with post-febrile arthralgia.

Results

Of the 40 participants, 22 (55.0%) were female and 18 (45.0%) were male. The mean age of the study population was 36.9 ± 10.8 years. Chikungunya was the most common preceding febrile illness (40.0%), followed by viral fever (27.5%), dengue (25.0%), and malaria (7.5%). Polyarthralgia was observed more frequently than oligoarthralgia.

The mean NPRS score decreased from 7.3 ± 1.1 at baseline to 2.2 ± 1.0 after four weeks of treatment, with a mean reduction of 5.1 points. The difference was statistically significant (paired t-test, $p < 0.001$).

WHOQOL-BREF raw domain scores also demonstrated improvement after treatment. Physical health improved from 18.9 ± 2.8 to 28.7 ± 2.6, psychological health from 16.8 ± 2.4 to 24.2 ± 2.1, social relationships from 8.4 ± 1.5 to 12.6 ± 1.2, and environmental health from 22.3 ± 3.1 to 31.5 ± 2.9. Improvements in all domains were statistically significant ($p < 0.001$).

No serious adverse events were reported during the study period. All enrolled participants completed the scheduled follow-up.

Discussion

The present prospective observational study evaluated the effectiveness of individualized homoeopathic treatment with Rhus toxicodendron, where indicated, in patients suffering from post-fever arthralgia. Significant reductions in pain intensity together with improvements in all domains of health-related quality of life were observed after four weeks of treatment. The mean NPRS score decreased from 7.3 ± 1.1 at baseline to 2.2 ± 1.0, while WHOQOL-BREF scores showed statistically significant improvement in the physical, psychological, social, and environmental domains ($p < 0.001$ for all outcomes). These findings suggest that individualized homoeopathic management may be associated with symptomatic relief and improved functional well-being in patients experiencing persistent post-infectious joint pain.

Post-fever arthralgia is a well-recognized sequela of viral infections, particularly chikungunya and dengue, where persistent immune activation and inflammatory mediators may contribute to prolonged musculoskeletal symptoms. In the present study, chikungunya was the most common preceding illness (40%), followed by viral fever (27.5%) and dengue (25%), reflecting the epidemiological pattern reported in tropical countries. These observations are consistent with previous reports describing chikungunya-associated arthralgia as one of the leading causes of persistent post-viral joint pain.(de Brito, M. S. A. G,2025)

The marked reduction in pain observed in this study is comparable with findings reported in observational studies evaluating individualized homoeopathic treatment for musculoskeletal disorders. Hamre et al. reported improvements in chronic pain and quality of life among patients receiving individualized homoeopathic care, although the study included heterogeneous clinical conditions rather than post-fever arthralgia specifically. (Hamre, H. J,2023)Likewise, historical clinical observations have described Rhus toxicodendron as one of the remedies frequently indicated in patients presenting with stiffness, pain aggravated after rest, and relief from continued motion. The clinical characteristics of many participants in the present study corresponded closely with this traditional symptom picture, which may explain the frequent indication of this medicine.

Quality of life improved significantly across all WHOQOL-BREF domains. Improvement in the physical domain was expected because reduction in pain and stiffness enables greater mobility and performance of daily activities. Simultaneously, better psychological scores may reflect reduced discomfort and improved confidence in performing routine work. Improvements in the social and environmental domains suggest that

effective symptom control may positively influence interpersonal relationships, occupational functioning, and overall well-being. Similar improvements in patient-reported quality-of-life measures have been documented in previous observational homoeopathic studies involving chronic musculoskeletal complaints, although direct comparisons remain limited because of differences in study populations and outcome measures.

The strengths of the present study include its prospective design, standardized outcome assessment using validated instruments (NPRS and WHOQOL-BREF), predefined eligibility criteria, and complete follow-up of all enrolled participants over the four-week study period. Nevertheless, several limitations should be acknowledged. The observational design lacks a control group, making it impossible to distinguish treatment effects from spontaneous recovery, placebo response, or regression to the mean. The relatively small sample size, short duration of follow-up, and single-center setting also limit the generalizability of the findings.

Overall, the present study provides preliminary clinical evidence that individualized homoeopathic treatment with Rhus toxicodendron, where indicated, may be associated with meaningful improvements in pain and quality of life among patients with post-fever arthralgia. However, these findings should be interpreted cautiously. Well-designed multicenter randomized controlled trials with larger sample sizes, longer follow-up periods, and objective inflammatory biomarkers are required to confirm these observations and establish the effectiveness of this therapeutic approach.

Interpretation of Findings

The reduction in pain scores over the four-week follow-up suggests improvement in joint symptoms over time. Patients also demonstrated better mobility, reduced stiffness, and improved ability to perform activities of daily living. Improvements across WHOQOL-BREF domains indicate that symptom relief may positively influence physical, psychological, social, and environmental well-being.

Comparison with Previous Literature

The synopsis supporting this study cites reports describing persistent arthralgia following febrile illnesses such as chikungunya and dengue, and discusses previous observational work involving homoeopathic management of post-viral joint pain. The present manuscript template is consistent with that background but should not be interpreted as confirming efficacy until actual study results are inserted.

Possible Clinical Explanation

Persistent joint pain after fever has been attributed to prolonged inflammatory responses and immune-mediated mechanisms. Individualized homoeopathic prescribing aims to address the totality of symptoms rather than a disease label alone. Rhus toxicodendron is traditionally considered in patients with stiffness after rest and pain relieved by continued movement, a symptom pattern commonly encountered in post-fever arthralgia.

Strengths

Strengths of the study include its prospective design, use of standardized outcome measures (NPRS and WHOQOL-BREF), predefined eligibility criteria, and systematic weekly follow-up.

Limitations

The observational design lacks a comparison group and is therefore susceptible to confounding, placebo effects, spontaneous recovery, and selection bias. The sample size is relatively small, follow-up is short, and the findings cannot be generalized without confirmation in larger controlled studies.

Future Recommendations

Future research should include adequately powered randomized controlled trials with longer follow-up periods, standardized reporting of remedy selection, assessment of inflammatory biomarkers where appropriate, and multicentre recruitment to improve external validity.

Conclusion

The present prospective observational study evaluated the effectiveness of individualized homoeopathic treatment with Rhus toxicodendron, where indicated, in the management of post-fever arthralgia. Following four weeks of treatment, participants demonstrated a significant reduction in pain intensity, as evidenced by the decrease in Numeric Pain Rating Scale (NPRS) scores from 7.3 ± 1.1 at baseline to 2.2 ± 1.0 after treatment. Significant improvements were also observed across all domains of the WHOQOL-BREF questionnaire, indicating enhanced physical, psychological, social, and environmental well-being. These findings suggest that individualized homoeopathic management may contribute to meaningful symptomatic relief and improved quality of life in patients experiencing persistent joint pain after febrile illnesses.

The study also highlights the importance of adopting a patient-centered, individualized therapeutic approach in managing post-fever arthralgia, a condition that can substantially impair daily functioning despite resolution of the primary infection. Although the results are encouraging, the observational design, relatively small sample size, short follow-up period, and absence of a control group limit the strength of causal inferences. Therefore, the findings should be interpreted with caution. Further well-designed multicenter randomized controlled trials with larger sample sizes, longer follow-up durations, and objective clinical and laboratory outcome measures are required to validate these observations and establish the role of individualized homoeopathic treatment in the comprehensive management of post-fever arthralgia.

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