



## Effect of Unani Formulation (*Nuskha-e-Munziji*) Along with Wet Cupping (*Hijama-bil-Shart*) in Patient of Rheumatoid Arthritis (*Waja ál Mafasil*) as an Adjuvant Therapy: A Case Report

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**Abstract:** Rheumatoid arthritis (RA) is a chronic inflammatory disorder that primarily affects the joints. The conventional system of medicine offers a wide range of treatments, but there is no cure for RA. In the Unani system of medicine, several Unani formulations and regimens are effectively used to manage *Waja'al-Mafasil* (RA). Therefore, the present case report aimed to evaluate the efficacy and safety of the Unani formulation (*Nuskha-e-Munziji*) along with wet cupping (*Hijama bi'l Shart*) as an adjuvant therapy for RA. A 40-year-old female patient diagnosed with RA, based on the 2010 ACR/EULAR Rheumatoid Arthritis classification criteria, was treated with standard treatment along with Unani formulation (*Nuskha-e-Munziji*), in the form of a decoction, which was given for 21 days, after which wet cupping (*Hijama bi'l Shart*) was performed, 3 sittings fortnightly. The patient showed a significant reduction in subjective parameters (i.e., VAS, DAS 28 score, swelling, stiffness, restricted movement, tenderness) and objective parameters (i.e., CRP, RA factor, and ESR). RA factor (quantitative) was 260 IU/ml at baseline, significantly reduced to 88.9 IU/ml after 7 weeks of treatment. There were no adverse effects reported during the treatment. Therefore, Unani formulation (*Nuskha-e-Munziji*) and wet cupping (*Hijama bi'l Shart*) were found effective and safe for treating rheumatoid arthritis as an adjuvant therapy to standard treatment.

**Keywords:** *Hijama bi'l Shart*, *Nuskha-e-Munziji*, Rheumatoid arthritis, Unani formulation, *Waja'al-Mafasil*, Wet cupping.

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## INTRODUCTION

Rheumatoid arthritis (RA) is a chronic inflammatory disease of unknown aetiology characterised by symmetric polyarthritis, the most common form of chronic inflammatory arthritis [1]. The occurrence of RA rises between the ages of 25 and 55 [1]. It impacts around 0.5-1% of adults globally, [1-3] with a prevalence in India ranging

from 0.28 to 0.7% [4]. At a ratio of 3:1, women are more likely than men to have this condition [1,3,5].

The cause of RA is unknown, but there are some genetic factors, such as HLA DRB1 (Human Leukocyte Antigen), and environmental factors, which are responsible for the disease [1].

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Rheumatoid arthritis (RA) is a progressive, multifactorial autoimmune disease characterised by joint pain, stiffness, and swelling, affecting various organs and tissues, leading to increased morbidity and complications.

Laboratory tests, including blood tests for rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibodies, are commonly used to diagnose RA, with 50% of cases showing positive RF at presentation and 20-35% developing positive RF within six months. Rheumatoid factor was the first autoantibody linked to RA; it was an autoantibody against the constant (Fc) region of IgG. RF helps in monitoring the response of therapy [2].

Despite extensive research and modern medical advances, RA has no long-term healing. Standard treatments such as nonsteroidal anti-inflammatory drugs (NSAIDs), disease-modifying anti-rheumatic drugs (DMARDs), biologics, and glucocorticoids, are helpful but come with a lot of adverse effects, such as gastritis, peptic ulcers, osteoporosis, and renal impairment [1]. The immune system is suppressed by biologics, which causes bacterial and fungal infections [1]. Therefore, people with long-term musculoskeletal conditions like RA often look for alternative approaches to treating their condition. The Unani system of medicine, which has been practiced for hundreds of years, can manage a variety of joint disorders, including RA. Usually, modes of treatment are *Ilāj bi'l Taghdhiya* (dietotherapy) and *Ilāj bi'l Dawā* (pharmacotherapy). To eliminate morbid materials, various *Ilāj bi'l Tadbīr* (regimenal therapies) are often performed, including *Hijāma bi'l Sharṭ* (wet cupping), *Dalk* (massage), *Ta'līq al-'Alaq* (leeching), *Faşd* (venesection), *Ishal* (purgation), etc.[6]

According to Unani, the disease is caused by an imbalance in *Akhlāt* (humours). The body compositions corresponding to these humours are *Damawī* (sanguine), *Balghamī* (phlegmatic), *Ṣafrāwī* (choleric), and *Sawdāwī* (melancholic). An individual's humoral constitution represents his healthy state. The body's ability of self-preservation or adjustment, called *medicatrix naturae* (*Quwwat Mudabbira Badan*), helps maintain this humoral balance. As the body weakens, an imbalance in the humoral composition begins to change and cause illness. In Unani, significant importance is placed on this ability. The medicines used in this system assist the body in regaining this ability and restoring the humoral balance, thereby maintaining health [6].

*Waja' al-Mafāsil*, an Arabic term, "*Waja'*" for pain and "*Mafāsil*" for joint, is used to explain all types of joint pain in the Unani system of medicine. *Waja' al-Mafāsil* refers to the condition characterised by

joint pain, inflammation, the buildup and deposition of morbid matters, and other joint disorders. *Waja' al-Mafāsil*, commonly known as *Gathiya*, [7] is a condition that is classified as one of the hereditary diseases [8]. *Waja' al-Mafāsil* is also referred to as "*Hudār*", [9] which is a type of *Waja' al-Mafāsil* with similar clinical features to rheumatoid arthritis in the modern system of medicine. According to Ibn Sīnā, *Waja' al-Mafāsil* is a clinical condition characterised by pain with or without stiffness in one or more joints caused by the accumulation of *Ruṭūbat-i-ghariba* (pathological humour) in the joints [8].

Since *Waja' al-Mafāsil* (RA) is caused due to *Ghayr Tab'ee* (morbid) *Balgham* and *Sawdā'*. To bring it to equilibrium, *Tanqiya* (evacuation) of these types of morbid matter is necessary. Before *Tanqiya* (evacuation), *Nuzj* (concoction) of the morbid matter is required, by which morbid matter matures and is easily evacuated from the body. For that reason, *Nuskha-e-Munzīj* was used in the form of *joshanda* (decoction) for the purpose of *Nuzj* (concoction) and *Hijāma bi'l Sharṭ* to evacuate morbid matter in this case report. These all provide additional benefits and prevention from adverse effects when used along with standard treatment. Therefore, the objective of the present case report was to evaluate the efficacy and safety of Unani formulation (*Nuskha-e-Munzīj*) along with wet cupping (*Hijāma bi'l Sharṭ*) in the management of RA as an adjuvant therapy.

## CASE REPORT

A 40-year-old female patient reported to the Out-Patient Department (OPD) of Ajmal Khan Tibbiya College Hospital, Aligarh Muslim University, Aligarh, on 11th May 2022 for Unani treatment, with complaints of pain in the right wrist, bilateral metacarpophalangeal (MCP), proximal interphalangeal (PIP), knees, and ankle joints, and swelling in both wrists, left 2nd MCP, 1st and 2nd PIP, and ankle joints from the past 2 ½ years. She also has swelling in both wrists, MCPs, PIPs, and ankle joints. She also finds it challenging to do her everyday tasks. The pain increased in cold weather and was relieved by hot fomentation. She visited a local medical practitioner for allopathic treatment for joint pain and experienced short-term relief, but after discontinuing it, she experienced severe joint pain. No prior medical history of trauma, joint pain, infections, fever, hypertension, diabetes mellitus, thyroid disorders, etc. was present. No family history of rheumatoid arthritis, osteoarthritis, gout, ankylosing spondylitis, SLE, or any other type of arthritis existed. She was a housewife and had a moderately hard-working lifestyle, was a vegetarian, and had regular bowel movements, a poor appetite, and disturbed sleep patterns due to pain. At the age of 16, the patient experienced menarche, had a regular menstrual cycle, three full-term deliveries,

and no history of abortion or oral contraceptive pill use.

On physical examination, she looked mildly ill. She had a white complexion, a lean body build (158 cm tall, 50 kg weight, 20 kg/m<sup>2</sup> BMI), and a painful, slow stride. There was pallor. There were no cyanosis, clubbing, jaundice, oedema, or palpable lymph nodes. Her vitals were within normal range. When moving, the affected joints have pain even though the other joints were in their usual positions. She was of *Balghamī Mizāj*, which was assessed based on the various parameters (*Ajnas-e-Ashrah*) mentioned in classical Unani literature.

The reported patient was a case of RA diagnosed based on the 2010 ACR/EULAR Rheumatoid Arthritis classification criteria. Written informed consent was taken from the patient before the treatment. Standard allopathic treatment was given to the patient, which included Tab. Methotrexate (Folitrax) (7.5 mg, weekly for 4 weeks, then the dose increases to 15 mg weekly for 3 weeks) and Tab. Hydroxychloroquine (Hqtor) (200 mg BD for 7 weeks/49 days). Unani treatment and regimen were also given to the patient as adjuvant therapy.

Unani formulation (*Nuskha-e-Munzīj*) in the form of decoction (*Joshanda*) was given to the patient on an empty stomach in the morning for three weeks (21 days). After that, *Hijāma bi'l Shart* was performed on the 21st, 35th, and 49th days. Three medium-sized cups of 5 numbers were applied on the sunnah point, i.e., two cups at the *Kātifain* (both shoulder regions) and one cup at *Nuqra* (base of the neck). Prophetic medicine was our reference in selecting these points, as they are the safest and most appropriate skin points in the back area, as this area is hidden (from the cosmetic point of view), has a large flat surface (easy to apply cups), is away from critical structures (nerves and vessels), and is more comfortable for the patient. In autoimmune diseases such as RA, *Hijāma bi'l Shart* is performed to eliminate excess

autoantibodies, immune complexes, cytokines, prostaglandins, pathology related substances and to strengthen natural immunity [10].

Approximately, 5 ml blood was withdrawn in each cup. Vitals were also checked before and after the wet cupping procedure.

Ingredients of the Unani formulation (*Nuskha-e-Munzīj*) were Suranjan Shireen (*Colchicum autumnale* Linn.) 5gm, Shahitra (*Fumaria officinalis* Linn.) 7gm, Chirata (*Swertia chirayita* Buch.) 7gm, Aftimoon (*Cuscuta reflexa* Roxb.) 5gm, Bisfaiej fastiqi (*Polypodium vulgare* Linn.) 5gm, Unnab (*Zizyphus sativa* Gaertn.) 5 pieces, Badyan (*Foeniculum vulgare* Mill.) 7gm, Bekh-e-badyan (*Foeniculum vulgare* Mill.) 7gm [11].

All the drugs were soaked overnight in 240 ml (a glass) of water and boiled in the morning until half of the water evaporated, known as *Joshanda* (decoction). This *Nuskha-e-Munzīj* was taken from Bayaz-e-Kabir Volume 1, [11] and all these drugs were obtained from Dawakhana Tibbiya College, AMU, Aligarh.

The efficacy of the drugs and intervention was determined by the subjective parameters, i.e., Visual Analogue Scale (VAS), Disease Activity Score 28 (DAS 28), swelling, stiffness, restricted movement, tenderness, and objective parameters, i.e., C-reactive protein (CRP), rheumatoid factor (RAF) and erythrocyte sedimentation rate (ESR). The quantitative method used was nephelometry. Follow-up was done at 0 days (baseline), 21st day, 35th day, and 49th day. For the assessment of safety, investigations like random blood sugar (RBS), complete blood count (CBC), liver function test (LFT), blood urea, and serum creatinine were carried out at baseline and after the treatment. Haemoglobin, clotting time (CT), and bleeding time (BT) were also carried out before performing *Hijāma bi'l Shart* as a safety measure.

**Table 1: Effects on subjective parameters**

Parameters/Follow Up	0 day	21 <sup>st</sup> day	35 <sup>th</sup> day	49 <sup>th</sup> day
VAS score	7	6	4	2
DAS 28 score	6.4	5.3	4.8	4.1
swelling	2	2	1	0
stiffness	2	2	1	0
restricted movement	1	1	0	0
tenderness	2	2	1	1

**Abbreviations:** VAS (visual analogue scale) score: 0 = no pain, 1-3 = mild, 4-6 = moderate, 7-9 = severe, 10 = worst pain

A score of DAS28 (disease activity score) between 2.6 and 3.2 indicates low disease activity, > 3.2-≤ 5.1 moderate, and > 5.1 high disease activity.

Arbitrary grading scale for swelling, stiffness, restricted movement, and tenderness: 0 = no, 1 = mild, 2 = moderate, 3 = severe.

**Table 2: Effects on objective parameters**

Follow up→ Parameters↓	0 day	21 <sup>st</sup> day	35 <sup>th</sup> day	49 <sup>th</sup> day
CRP (qualitative)	positive	positive	positive	positive
RA Factor (quantitative) (IU/ml)	260	194	126	88.9
ESR (mm/hr)	43	38	35	35

**Table 3: Effect on Haematological & Biochemical Parameters**

Parameters		Baseline	After treatment
Hb (g/dl)		10	12
Random blood sugar (mg/dl)		110	111
RBC (million/mm <sup>3</sup> )		3.8	3.9
TLC (cells/mm <sup>3</sup> )		9300	9800
DLC (%)	Neutrophils	73.9	71.2
	Lymphocytes	21.8	22
	Monocytes	02	02
	Eosinophils	01	01
	Basophils	0	0
Serum Bilirubin (mg/dl)		0.8	0.56
SGOT (U/L)		52	36
SGPT (U/L)		39	69
S. alkaline phosphatase (U/L)		176	163
Blood urea (mg/dl)		40	23
Serum creatinine (mg/dl)		1.0	0.4

**DISCUSSION**

In this case report, the effect of Unani formulation (*Nuskha-e-Munziji*) along with wet cupping (*Hijama-bil-Shart*) as adjuvant therapy in a patient with rheumatoid arthritis. The patient showed a significant reduction in subjective and objective parameters after 7 weeks of treatment. As shown in Table 1, the VAS score was 7 at baseline of treatment, indicating severe intensity, and decreased to 2 (mild) at the end of treatment. The DAS 28 score was 6.4 at baseline (indicating high disease activity) and remained at 4.1 (moderate disease activity) after treatment. The moderate swelling, which was scored 2 before treatment, had completely disappeared after 7 weeks of treatment. The stiffness, which was initially scored 2 on day 0, had completely disappeared by day 49. The mild restricted movement, scored 1, before treatment was also alleviated after treatment, and the moderate tenderness, scored 2, on day 0 decreased to mild after treatment.

The CRP was positive before and after treatment because it was performed qualitatively; the test becomes negative when the values become normal. The RA factor, which can be used to monitor response to therapy, was initially 260 IU/ml and significantly decreased to 88.9 IU/ml after treatment. In addition, ESR decreased from 43 mm/hour at baseline to 35 mm/hour on day 49, which is a significant effect (see Table 2). In haematologic and biochemical parameters, there is an increase in SGPT levels, which could be a laboratory error, as the

patient had no adverse symptoms throughout treatment.

This result may be due to the pharmacological action of different ingredients of the Unani formulation (*Nuskha-e-Munziji*) used in the decoction, which consists of eight *Mufrad* (single) drugs that have different properties.

According to Unani literature, pain occurs when the *Mizāj* of an organ is altered. In *Waja' al-Mafāṣil* (RA), *Mizāj* deviates towards *Burūdat*. The Unani formulation (*Nuskha-e-Munziji*) administered to the patient was intended to return the deranged *Mizāj* to normal by eliminating the morbid humours with the drugs like Shahitra, Aftimoon, Bisfayej, Unnab, and Badyan, which have *Mushil* properties that help in the expulsion of pathological humours, and also relieving the pressure caused by its accumulation, which is responsible for pain.

Suranjan Shireen has *Muḥallil* (resolvent), [12,13] *Musakkin* (soothing agent), [12] *Mushil-i-Balgham* (purgative of phlegm), [12] and antioxidant properties [13,14]. Colchicine, an alkaloid of Suranjan, binds with the microtubule of the neutrophils (WBC) and terminates the cell division of neutrophils, resulting in reducing the pain and swelling in joints. Thus, colchicine is also known as a mitotic inhibitor [15].

Shahitra has an alkaloid protopine, which inhibits histamine H1 receptors and platelet aggregation and acts as an analgesic (*Musakkin*) [16]. Quercetin of Shahitra (Wealth of India), [17]

Methanolic extract of the aerial part of Chirata (Khan *et al.*, 2018), [18] and essential oil, methanol, and extracts of Badyan (Anwar *et al.*, 2009), [19] all have antioxidant properties that reduce the load of oxidants and free radicals, which increases in inflammatory conditions like RA and is associated with tissue damage that is caused by oxygen-free radicals (Kelly and Firestein) [3].

Badyan, Chirata, and Aftimoon have *Muqawwī-i-Mi'da* (stomachic), [20] *Hādim* (digestive), [21] and *Kāsir-i-Riyāh* (carminative), [20] properties that help in maintaining and strengthening the digestive system, which is deranged in arthritis patients due to the use of NSAIDs [2]. That is why the Unani drugs have additional properties to strengthen the digestive system.

In Unani medicine, Bisfaej has important pharmacological effects such as *Mulattif* (making the morbid humours detachable from joints) and *Mukhrij-i-Sawdā'wa Balgham* (eliminator of morbid humours *Sawdā'* and *Balgham*); therefore, it can be used in the advanced stage of RA (Amin *et al.*, 2006) [22].

According to Taibah's theory, *Hijāma* exhibits immunomodulatory effects by decreasing the causative immunological reactions underlying the pathogenesis of RA, which are explained through their cutaneous excretion through skin incisions and suction force in cupping therapy. Inflammatory cytokines, such as TNF, are produced at inflammatory sites, and wet cupping therapy can help in the evacuation of these inflammatory substances, potentially reducing their severity [23,24].

Abdullah *et al.*, (2021) showed that a statistically significant reduction was observed in CRP level (p-value<0.05) and in RF level (p-value<0.007), which significantly declined after cupping therapy. This might be caused by the excretion of causative pathological substances that are removed during wet cupping therapy [25].

In 2005, Ahmed and colleagues showed that wet cupping therapy significantly reduces the visual analogue score (VAS), tender joint count (TJC), swollen joint count (SJC), and disease activity score (DAS) pain and laboratory markers, including ESR, CRP, and RA factor, of rheumatoid arthritis activity [26].

*Hijāma* can induce systemic comfort and relaxation through the release of endogenous opioids from the hypothalamus and pituitary, thereby increasing the pain threshold and blocking the pain gate, leading to decreased pain [27].

In addition, the Unani formulation (*Nuskha-e-Munzij*) and the regimen (*Hijāma bi'l Shart*) were found to be safe and effective Unani management for rheumatoid arthritis, as they significantly reduced the signs and symptoms and lowered the RA factor from baseline to 7 weeks duration, and no haematological or biochemical abnormalities were observed, as shown in Table 3, and no clinical side effects were reported throughout the entire period of treatment.

## CONCLUSION

In view of the above discussion, it can be concluded that the Unani formulation along with the regimen were found effective, which may be due to the cumulative effect of the pharmacological actions of *Munzij* drugs and the intervention of *Hijāma bi'l Shart*. Although standard treatment is effective, it comes with lots of adverse effects. Combining current medical treatments with Unani drugs and regimen expands its spectrum and effectiveness. So, our *Nuskha-e-Munzij* and *Hijāma bi'l Shart* give additional benefits to prevent adverse effects and to delay the complications and deformities that develop in a few years of the disease. Therefore, it can be concluded that the Unani formulation, along with the regimen, can be used as an adjuvant therapy along with standard treatment to control the symptoms, minimise the adverse effects, and improve quality of life. However, large randomised controlled trials are required to validate these findings.

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