



EFFICACY OF A TOPICAL DIMAD IN THE MANAGEMENT OF WAJA'AL-RAKBA (KNEE OSTEOARTHRITIS): A CASE REPORT

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Review Paper

Received: 20.09.2024

Revised: 17.10.2024

Accepted: 25.11.2024

ABSTRACT

Background- Osteoarthritis is a global condition causing abnormal joint biomechanics and delayed articular cartilage deterioration, affecting the knee and affecting approximately 250 million individuals. It is a leading cause of impairment in the aged due to diabetes. Traditional treatments include pain medication, exercise, heat and cold therapy, corticosteroid injections, and joint repair or replacement surgery. The Unani medical system offers three treatment methods. '*Ilaj bi'l Tadbir*' (Regimenal Therapy), '*Ilaj bi'l Taghdhiya*' (Dietotherapy), '*Ilaj bi'l Dawa*' (Pharmacotherapy), and '*Ilaj bi'l Yad*' (Surgery), each with its own restrictions.

Objectives- Efficacy of a topical *Dimad* in the management of *Waja-al-Rakba* (knee Osteoarthritis) and provide safe, effective and feasibly available with no or minimum side effect.

Methods- A 40-year old female with bilateral knee pain and stiffness, diagnosed six months ago, presented to the OPD of the *Regional Research Institute of Unani Medicine, Srinagar*. Despite receiving analgesics, anti-inflammatory drugs, and physical therapy, she continued to deteriorate. In this study, a *Dimad* or medicated paste is applied over the anterior part of the left knee for two weeks daily twice a day for at least 15-20 minutes and then washed-out area with lukewarm water.

Result- The study found that topical *Dimad* formulation effectively treated knee joint symptoms and inflammation. The patient's VAS scores decreased from 9 to 1 by the 14th day, indicating a decrease in symptoms. The treatment was safe and bearable, and the patient's quality of life improved significantly. After treatment, there was a statistically significant decrease in mean VAS ratings from day 0 to day 14.

Conclusion- The patient reported a significant improvement in pain, stiffness, and soreness, and a significant decrease in mean VAS ratings from day 0 to day 14 after treatment.

No. of Pages: 7

References: 14

Keywords: Dimad, Waja'al-Rakba, Knee Osteoarthritis, Case Report, Unani management, VAS.

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INTRODUCTION

Osteoarthritis is a condition that causes abnormal joint biomechanics and delayed deterioration of articular cartilage. The pathogenic changes are biochemically induced. Knee osteoarthritis is a common and debilitating cause of joint degeneration.^[1] Knee osteoarthritis affects both the patella-femoral and medial Tibio-femoral compartments of the knee.^[2] Approximately 250 million individuals are impacted globally.^[3] In India, OA affects 22% to 39% of the population, making it the second most prevalent rheumatologic condition.^[4] Diabetes is a leading cause of impairment in the aged, owing to its high prevalence and accompanying disability rates.^[5] The condition is distinguished by joint pain, soreness, restricted mobility, crepitus, intermittent effusion, and various degrees of local inflammation.^[6] Pain medication (NSAID and cox-2 inhibitors), exercise, heat and cold therapy, corticosteroid injections, and joint repair or replacement surgery are among the traditional treatments for osteoarthritis. Even with therapy, osteoarthritis can progress, resulting in ongoing discomfort and dysfunction.^[7] There are now several osteoarthritis treatment options available, each with its own set of restrictions. Unfortunately, there is no cost-effective, side-effect-free medicine for OA that may alleviate symptoms and cure the disease. The aim for economical, effective, and less dangerous drugs needs scientific confirmation of established treatments.^[8,9] This sickness is not precisely explained in the Unani medical system. *Waja'al-Mafāsīl* refers to all types of arthritis.^[10] Ancient Unani physicians classified arthritis according to temperament, the presence or absence of harmful material, the type of harmful material, and the location of symptoms, giving specific names to conditions such as *Niqris* (gout), *Waja'al-Warik* (hip joint pain), *Irq'al-Nasa* (sciatica), and *Waja'al-Unuq* (neck pain).^[11] Similarly, "*Waja'al-Rukba*" refers to knee pain, with "*Waja*" meaning pain and "*Rukba*" meaning knee. Knee osteoarthritis is treated using the *Waja'al-Mafāsīl* instructions from Unani literature. Unani

medicine offers three treatment methods: '*Ilāj bi'l Tadbīr*' (Regimenal Therapy) and '*Ilāj bi'l Taghdhiya*' (Dietotherapy), '*Ilāj bi'l Dawā*' (Pharmacotherapy), and '*Ilāj bi'l Yad*' (Surgery). *Ilāj bi'l Tadbīr* offers non-pharmacological or minimally drug-based therapy. Ancient medics employed *Dimād* or medicated Paste on the skin to address numerous painful musculoskeletal ailments.^[12] In this context, A *Dimād*; which is a pharmacopeial Unani preparation was applied over the anterior part of the left knee for two weeks daily twice a day for at least 15-20 min.

MATERIALS AND METHODS

Case report

A 40 year old k/c/o Hypertension non-diabetic female patient presented to the OPD of Regional Research Institute of Unani Medicine, Srinagar with symptoms of bilateral knee pain and stiffness that date back six months. After receiving care from his family doctor, who recommended analgesics and anti-inflammatory drugs along with physical therapy, she continued to deteriorate. She complained of pain and limited mobility that got worse after standing and walking for more than half an hour. Restricting the movement helped to ease the discomfort. The patient has no additional history of knee trauma or damage, and there is no family history of knee pain complaints.

Therapeutic intervention

The *Dimād* was prepared in the *Saidla* lab of **Regional Research Institute of Unani Medicine, Srinagar** as per the guidelines of the National Formulary of Unani Medicine. The ingredients of given in table.1 and the application of *Dimād* procedure was explained to the patient in detailed before the treatment and written consent was obtained from the patient by the researcher. The *Dimād* was given to the patient in the form of paste and the patient was explained to apply the paste on affected knee joint and cover the sufficient area with paste for 15-20 minutes twice a day and then the area was washed-out properly with lukewarm water.

Ingredients of the *Dimād*^[11,12,13]**Table: 1**

Sl. No.	Unani name	Botanical name/ Scientific name	Action
1.	Barg-e-chinar	<i>Platanus orientalis</i>	Antiinflammatory
2.	Namak Ta'am	(<i>Sodium chloride</i>)	Neuralgic/Rheumatic pain
3.	Turmeric	(<i>Curcuma longa</i>)	Antiinflammatory

Diagnostic assessment

Before starting the procedure, patient underwent through some precautionary physical and musculoskeletal examination. Following results were observed:-

- The onset of pain was gradual and started approximately 2 months back.
- The nature of pain was dull, aching and was felt more on medial side of knees with severity 6/10 on most days, increasing to 8/10 after prolonged activity.
- The symptoms associated were occasional swelling, stiffness lasting 20 to 30 minutes in morning and crepitus felt during flexion and extension.
- Patient appears moderately overweight, walking with a slight antalgic gait (limp to avoid pain).
- Upon palpation, tenderness was found over the medial joint line with no significant warmth around the joint.
- The range of motion was decreased with flexion: 100° (normal :135°) and extension: -10°(normal :0°)

Follow up and outcome measures

The treatment was given daily twice a day up-to 14 days, follow up on every week for two weeks; and findings and outcomes were monitored and patient was then assessed on days 0, 7th and 14th day of the treatment with the help of objective parameters i.e, Visual Analogue Scale (VAS) for measurement of pain and active range of motion scores (Observing intensity of joint stiffness during the daily life activities) and WOMAC scale. The total VAS was 9 (pain is very severe at

this score) at baseline which improved to 5 on the 7th day and 1 on the 14th day, pointing to reduction in the severity of symptoms. Also, during the treatment, no adverse effects were noticed. also Treatment was safe and tolerable for the patient.

WOMAC Scale

The WOMAC questionnaire has three sub-scales: pain (five questions), stiffness (two questions), and physical function (17 questions). The sub-scale ratings range from 0 to 20 for pain, 0 to 8 for stiffness, and 0 to 68 for physical function. The overall WOMAC score is calculated by adding the items from all three sub-scales. (0-96). Higher WOMAC ratings imply more discomfort, stiffness, and functional limits. Table 2: Showing WOMAC Scores at Baseline 0th day, 7th day and 14th day at the treatment.

Table 2: WOMAC Scale Scores.

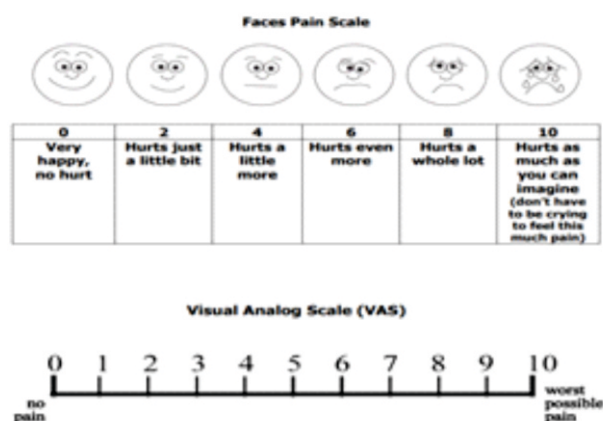
	Baseline 0 th day	7 th day	14 th day
Rt Knee	76	48	22
Lt Knee	60	34	18

Outcomes of the case study

The patient was asked to rate his knee pain on VAS scale and WOMAC scale at the Baseline, 1 week and on 2nd week as shown below in Table 3.

Table: 3

	Baseline 0 th day	7 th day	14 th day
VAS	9	5	1
WOMAC	76	48	22



The VAS scale is used for assessment of severity of pain, where 0 indicates no pain at all and 10 indicates extreme pain which requires immediate medical attention.[14]

Table 4: AROM in degrees.

	Baseline	1 st week	2 nd week
Rt Knee flexion	100°	103°	105°
Rt Knee extension	-4°	-3°	-2

Showcase of AROM scores in degree at baseline, 1ST and 2nd week.

RESULTS AND DISCUSSION

In the present case study, we found that the application of topical *Dimād* formulation in treating the symptoms and reduction in pain and inflammation in the knee joint is showing significant results. Follow up was done on 7th and 14th day of the study at *Regional Research Institute of Unani Medicine, Srinagar* OPD and the patient was evaluated on days 0, 7, and 14 of the treatment with the use of objective parameters, such as the Visual Analogue Scale (VAS) for measuring pain and active range of motion scores (observing the intensity of joint stiffness during the daily activities) and the WOMAC scale. The treatment was administered twice daily for 14 days, with follow-up every week for two weeks. The baseline total VAS score was 9, which indicates very severe pain. By the seventh day, it had dropped to 5, and by the fourteenth day, it had dropped to 1, indicating a decrease in the

severity of symptoms. Additionally, no side effects were seen during the course of therapy. Additionally, the patient found the treatment to be both safe and bearable. Both the VAS score for pain, stiffness, and soreness as well as the quality of life significantly improved. Additionally, following treatment completion, a statistically significant decrease in mean VAS ratings from day 0 to day 14 was noted.

Declaration of patient consent

The authors attest that all required patient permission forms have been submitted to them. The patient signed these documents consenting to the journal's sharing of their clinical data. Although every attempt will be made to keep the patient's identity confidential, total anonymity cannot be ensured. The patient is aware that their names and initials will not be published.

Conclusion and Future scope

We have attempted to demonstrate the potential of *Dimād* formulation in a non diabetic patient with osteoarthritis in the knee in this case study. One of the special therapeutic modalities mentioned in the Unani medical system, the reduction of pain and inflammation, was effectively addressed. To further elucidate the efficacy of this therapy method, however, large-scale randomized controlled trials are needed.

Ethical approval

Not applicable

Acknowledgments

The authors express their gratitude to Dr. Irfat Ara, the Deputy Director of the Regional Research Institute of Unani Medicine in Srinagar, as well as the library staff for their invaluable assistance and provision of a wide range of literature related to this manuscript during the writing of this case report.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Chen D, Shen J, Zhao W, Wang T, Han L, Hamilton JL. Osteoarthritis: toward a

- comprehensive understanding of pathological mechanism. *Bone Res.* 2017; 5:16044.
2. **Mora JC, Przkora R, Cruz-Almeida Y.** Knee osteoarthritis: pathophysiology and current treatment modalities. *J Pain Res.* 2018; 11:2189-2196.
 3. **Pal CP, Singh P, Chaturvedi S, Pruthi KK, Vij A.** Epidemiology of knee osteoarthritis in India and related factors. *Indian J Orthop.* 2016; 50(5):518-522.
 4. **Sinusas K.** Osteoarthritis: diagnosis and treatment. *Am FAM Physician.* 2012; 85(1):49-56.
 5. **Felson DT.** Clinical practice. Osteoarthritis of the knee. *N Engl J Med.* 2006; 354(8):841-8.
 6. **Braun HJ, Gold GE.** Diagnosis of osteoarthritis: imaging. *Bone.* 2012; 51(2):278-88
 7. **Wu Y, Goh EL, Wang D, Ma S.** Novel treatments for osteoarthritis: an update. *Open Access Rheumatol.* 2018; 10:135-140.
 8. **Sina I.** Alqanoon Fit Tib. (Urdu translation By GH Kantoori). New Delhi: IdaraeKitabus Shifa; YNM, 1.
 9. **Khan Azam HM.** Akseer e Azam (Al-Akseer), New Delhi: Idara kitab al shifa; New Delhi: YNM, 836
 10. National Formulary of Unani Medicine (in Hindi), Part-1, GOI, Ministry of Health & Family Welfare. Dept of AYUSH New Delhi, Page-213.
 11. **Raghubanshi, Alam MT, Amir, Mohammad I, Khan MN, Akhtar J, et al.** Namak Ta'am (Sodium chloride), an inorganic compound drug: A review. *International Journal of Unani and Integrative Medicine.* 2024;8(1):51-54.
 12. **Thahira Banu Azeez, Janeline Lunghar, 5 -** Antiinflammatory effects of turmeric (*Curcuma longa*) and ginger (*Zingiber officinale*), Editor(s): Sreeraj Gopi, Augustine Amalraj, Ajaikumar Kunnumakkara, Sabu Thomas, Inflammation and Natural Products, Academic Press, 2021, Pages 83-102, ISBN 9780128192184, <https://doi.org/10.1016/B978-0-12-819218-4.00011-0>.
 13. A Realistic Approach for Anti-Inflammatory, Antinociceptive and Antimutagenic Activities, and Risk Assessment of the Aqueous Extract of *Platanus orientalis* L. Leaves Author(s): Erdem Yesilada*, Esra K. Akkol, Ahmet Aydin and Muhammed Hamitoğlu Volume 14, Issue 5, 2021 Published on: 11 January, 2021, Page: [753 - 759]
 14. https://ttuhscep.edu/opp/_documents/EP-3/ep-3-13A.pdf