STM JOURNALS

Journal of
AYUSH: Ayurveda, Yoga, Unani, Siddha and Homeopathy

ISSN: 2278–2214 (Online)
ISSN: 2321–6484 (Print)
Volume 15, Issue 1, 2026
January–April
DOI (Journal): 10.37591/JOAYUSH

https://journals.stmjournals.com/joayush/

Research | JOAYUSH

Clinical Evaluation of Efficacy of a Polyherbal Unani Formulation (Mentioned in *Makhzan-Ul-Ilaj*) in the Management of *Warm-e-Lauzatain-Haad* (Acute Tonsillitis)

Shaikh Aqueel[1,*], Mujeeb Pinjari[2], Shaikh Ather[3]

Abstract

Background: *Warm-e-Lauzatain-Haad (Acute Tonsillitis) is an inflammatory condition of the palatine tonsils characterized by throat pain, fever, odynophagia and general discomfort. It is particularly common among adolescents and young adults and contributes substantially to outpatient visits and missed academic or workdays. In Unani medicine Warm-e-Lauzatain is described as a hot inflammatory swelling arising from deranged humors, exposure to irritants or descending catarrhal matter. Classical Unani texts including Makhzan-ul-Ilaj, advocate the use of polyherbal decoctions such as Joshanda due to their anti-inflammatory, demulcent and expectorant effects. This study was designed to clinically evaluate the efficacy and safety of a traditional Polyherbal Unani formulation in the management of Warm-e-Lauzatain-Haad.* ***Methods:*** *An open-label, single-arm clinical study was conducted on 60 patients aged 16–25 years diagnosed with Warm-e-Lauzatain-Haad based on classical symptoms and clinical examination. The polyherbal formulation consisted of Behidana, Unnab, Sapistan, Tukhm-e-Khatmi, Tukhm-e-Khayarain, Tukhm-e-Khubbazi and Asl-us-Soos, prepared as Joshanda. Patients received 20 ml of the formulation twice daily for 12 days. Therapeutic assessment included subjective parameters throat pain, dysphagia, fever, earache and tenderness and objective parameters such as complete blood count (CBC) and erythrocyte sedimentation rate (ESR). Data were analyzed using paired t-test and Chi-square test.* ***Results:*** *Marked clinical improvement was observed by the end of the treatment period. Difficulty in swallowing, throat pain, fever and associated symptoms significantly decreased ($p < 0.0001$). ESR levels showed a significant reduction from baseline ($p = 0.004$), neutrophil counts declined ($p = 0.003$), and lymphocyte counts increased ($p = 0.0039$), indicating anti-inflammatory and immunomodulatory effects of the formulation. No adverse drug reactions or safety concerns were reported during the study.* ***Conclusion:*** *The Polyherbal Unani formulation (Joshanda) as described in Makhzan-ul-Ilaj demonstrated significant clinical efficacy in alleviating symptoms of Warm-e-Lauzatain-Haad and improving inflammatory markers. Its safety, affordability and traditional acceptance highlight its potential as an effective complementary or alternative therapeutic option for acute tonsillitis. Larger controlled trials are warranted to validate these findings.*

Keywords: Acute tonsillitis, Joshanda, Makhzan-ul-Ilaj, Polyherbal Unani formulation, Unani medicine, Warm-e-Lauzatain-Haad

***Author for Correspondence**
Shaikh Aqueel
E-mail: aquee22@gmail.com

[1]Assistant Professor, Department of Moalajat, IQRA Unani Medical College, Jalgaon, Maharashtra, India.
[2]Assistant Professor, Department of Tahaffuzi wa Samaji Tibb, IQRA Unani Medical College, Jalgaon, Maharashtra, India.
[3]PG Scholar, Department of Moalajat (Medicine), ZVM Unani Medical College, Pune, Maharashtra, India.

Received Date: December 30, 2025
Accepted Date: February 13, 2026
Published Date:

Citation: Shaikh Aqueel, Mujeeb Pinjari, Shaikh Ather. Clinical Evaluation of Efficacy of a Polyherbal Unani Formulation (Mentioned in *Makhzan-Ul-Ilaj*) in the Management of *Warm-e-Lauzatain-Haad* (Acute Tonsillitis). Journal of AYUSH: Ayurveda, Yoga, Unani, Siddha and Homeopathy. 2026; 15(1): 13–22p.

INTRODUCTION

Tonsillitis is a very common condition, most frequent in children aged 5 to 15 years and young adults between 15 to 25 years [1]. It causes significant morbidity, particularly in developing countries. Warm-e-Lauzatain-Haad as described in Unani medicine, corresponds to acute tonsillitis in modern terminology. Conventional treatment involves antibiotics and anti-inflammatory drugs, which may lead to side effects and antibiotic resistance. Therefore, there is a need for safe and effective traditional alternatives [2].

Unani physicians have extensively described Warm-e-Lauzatain and its types – Damvi, Safrawi, Balgami and Saudawi corresponding to acute and chronic forms. The Polyherbal Unani formulation mentioned in *Makhzan-ul-Ilaj* has long been used for throat inflammations due to its *muhallil-e-awram* (anti-inflammatory), *musakkin-e-hararat* (antipyretic) and *munaffis-e-balgam* (expectorant) properties [3].

This study aimed to clinically evaluate the efficacy of Joshanda in patients diagnosed with Warm-e-Lauzatain-Haad.

REVIEW OF LITERATURE

Unani View [4–10]

The scholars of Unani describe Warm-e-Lauzatain inflammation of the two glands on either side of the throat associated with pain, fever and difficulty in swallowing. It is divided into four varieties based upon the predominance of humor, namely Damvi (sanguine), Safrawi (bilious), Balgami (phlegmatic) and Saudawi (melancholic). According to Hakim Gulam Jilani, Warm-e-Lauzatain Damvi and Safrawi are the acute varieties and the latter two signify chronic types.

But in Khunnaq, inflammation goes deeper with a white coating. The treatment mentioned in old classics like Makhzan-ul-Ilaj and Al-Akseer are Joshanda which acts as muhallil-e-awram (anti-inflammatory), musakkin-e-hararat (antipyretic) and munaffis-e-balgam (expectorant).

In Unani medicine *Warm-e-Lauzatain* refers to the inflammation of the two palatine tonsils (*Lauzatain*), situated on either side of the throat. Classical Unani authorities such as Ibn Sina, Razi and Jurjani describe it as an acute inflammatory condition characterized by *dard* (pain), *taḥarruq* (burning), *bukhaar* (fever), *sakta-e-lugm* (difficulty in swallowing) and *waram* (swelling). These descriptions parallel the modern understanding of acute tonsillitis, highlighting the long-standing recognition of this disorder in traditional systems of medicine.

Humoral Classification

Unani scholars classify Warm-e-Lauzatain into four types based on the predominance of the humor (*akhlaat*).

- *Damvi (Sanguine):* Marked by redness, heat, congestion, and throbbing pain due to an excess of *khilt-e-dam* (blood).
- *Safrawi (Bilious):* Characterized by intense burning, dryness of the throat, and yellowish discoloration resulting from the predominance of *safra* (yellow bile).
- *Balgami (Phlegmatic):* Associated with pale swelling, excessive mucus, heaviness, and relatively mild pain attributed to accumulation of *balgham* (phlegm).
- *Saudawi (Melancholic):* Recognized by chronic, indurated swelling with dark discoloration, minimal heat and protracted symptoms.

Hakim Gulam Jilani identifies Damvi and Safrawi varieties as acute forms due to their hot and inflammatory nature while Balgami and Saudawi forms typically correspond to chronic or recurrent presentations.

Etiology and Pathogenesis

The pathogenesis (*Asbab wa Asrar-e-Marz*) of Warm-e-Lauzatain in Unani medicine centers on the imbalance and corruption (*taffun*) of humors particularly those with hot and moist qualities. Key etiological factors include.

- Sudda (obstruction) in the tonsillar passages due to thick phlegm.
- Putrefaction of humor especially *dam* and *safra* producing heat and inflammation.
- Exposure to cold, damp weather leading to aggravation of *balgham.*
- Consumption of hot, spicy or excessively dry foods, intensifying *safrawi* tendencies.
- Nazla wa Zukam (catarrhal states) causing phlegmatic secretions to descend into the throat.

These factors disturb the equilibrium of humors resulting in pain, swelling, fever and difficulty swallowing symptoms consistent with contemporary clinical definitions of acute tonsillitis.

Clinical Features in Classical Texts

Unani literature provides detailed symptomatology for Warm-e-Lauzatain including.

- Shiddat-e-dard (severe throat pain).
- Tashannuj-e-lugm (marked difficulty in swallowing).
- Bukhaar-e-hadd (acute fever).
- Warme-Lauzatain (tonsillar enlargement and redness).
- Sual wa balgham (cough with phlegm).
- Dard-e-uzn (referred to otalgia due to shared nerve pathways).

A severe variant *Khunnaq* described by Ibn Sina, involves deeper inflammation extending into the pharynx and upper airway often with a white or yellowish coating. This presentation resembles modern bacterial tonsillitis or peritonsillar involvement.

Therapeutic Principles

Unani treatment aims to:

- Resolve inflammation (tahleel-e-waram).
- Relieve pain and burning (taskeen-e-alam, taskeen-e-hararat).
- Evacuate morbid humor (tanqiya-e-mawad).
- Restore moisture (tarteeb) in cases of dryness, especially safrawi types.

Treatment Strategies Fall Under

- *Ilaj-bil-Ghiza (Dietotherapy):* Soft, moist and cooling foods; avoidance of hot, dry and irritant items.
- *Ilaj-bit-Tadbeer (Regimenal Therapy):* Gargles (*ghargara*), steam inhalation (*bukhoor*), warm fomentation and throat compresses.
- *Ilaj-bid-Dawa (Pharmacotherapy):* Use of polyherbal formulations, demulcent herbs and mucilage-rich preparations.

Joshanda in Unani Therapeutics

Classical sources such as *Makhzan-ul-Ilaj*, *Al-Akseer* and *Khulasat-ul-Advia* consistently recommend Joshanda, a polyherbal decoction for acute inflammatory throat conditions. Joshanda is valued for its multiple therapeutic actions.

- *Muhallil-e-Awram (Anti-Inflammatory):* Reduces swelling and local congestion.
- *Musakkin-e-Hararat (Antipyretic):* Relieves heat and fever.
- *Munaffis-e-Balgham (Expectorant):* Clears thick phlegm.
- *Mulattif (Demulcent/Softening):* Soothes irritated mucosa.
- *Mushil-e-Rutoobat:* Liquefies and expels viscous secretions.

Herbs such as *Asl-us-Soos (Glycyrrhiza glabra)*, *Unnab (Zizyphus)*, *Sapistan (Cordia)*, *Tukhm-e-Khatmi (Althaea)* and *Malva* species are known for their cooling, mucilaginous, anti-inflammatory and mucoprotective properties. Their synergistic use in Joshanda aligns with both traditional theory and the symptomatic requirements of Warm-e-Lauzatain.

Relevance to the Current Study

The classical understanding of Warm-e-Lauzatain, including its humoral basis, symptomatology and treatment principles provides a strong theoretical foundation for evaluating polyherbal formulations such as Joshanda in acute tonsillitis. The emphasis on reducing inflammation, clearing phlegm and restoring mucosal comfort reflects a holistic approach that parallels modern therapeutic objectives. This convergence of traditional rationale and contemporary clinical reasoning underscores the importance of scientifically assessing Unani formulations in the management of acute tonsillar inflammation.

MODERN INSIGHT [11–14]

Acute tonsillitis is an inflammatory disorder of the palatine tonsils characterized primarily by sore throat, fever, odynophagia and tender cervical lymphadenopathy. It represents a significant proportion of clinical encounters for upper respiratory tract infections particularly among school aged children and young adults. Although both bacterial and viral agents are implicated, contemporary epidemiological data indicate that viral infections constitute most cases with Group A β-hemolytic *Streptococcus* (GAS) being the most clinically important bacterial pathogen due to risks of suppurative complications and post-infectious sequelae such as rheumatic fever. Most episodes of acute tonsillitis are self-limiting, however, bacterial etiologies, though less common remain the primary indication for antibiotic therapy when supported by clinical or laboratory evidence.

Diagnosis in modern practice relies on a combination of detailed history and focused physical examination supplemented by validated clinical scoring systems designed to estimate the likelihood of streptococcal infection. Tools such as the Centor and Fever PAIN scores are now central to evidence-based management. These scoring systems stratify patients according to risk helping clinicians determine whether symptomatic management alone is appropriate or whether further testing such as rapid antigen detection testing (RADT) or throat culture is warranted. Patients with lower scores are generally advised to supportive care while those with intermediate or high scores undergo confirmatory testing or receive selective antibiotic therapy. This risk-based approach reflects contemporary guidelines that emphasize minimizing unnecessary antibiotic use while ensuring timely treatment of confirmed or strongly suspected streptococcal disease.

Antibiotics remain the standard of care for proven GAS tonsillitis. Penicillin and amoxicillin are preferred agents because they modestly shorten symptom duration, reduce transmission and prevent complications in at-risk populations. Despite these benefits, the improvement in symptoms is relatively small, and most uncomplicated cases are resolved without antimicrobial therapy. As a result, modern guidelines promote restrictive and targeted antibiotic prescribing. Macrolides and alternative agents are reserved for patients with documented penicillin allergies or in areas with known resistance patterns. These stewardship focused recommendations highlight the need for therapeutic alternatives particularly those that may reduce reliance on antibiotics, an important consideration when evaluating traditional polyherbal formulations.

Supportive measures form the foundation of treatment in cases without confirmed bacterial infection. Adequate hydration, analgesics such as NSAIDs or acetaminophen, topical anesthetic lozenges and voice rest are widely endorsed for symptomatic relief. Increasing attention is also directed toward adjunctive anti-inflammatory therapies. Evidence from randomized controlled trials and systematic reviews indicates that a single dose of systemic corticosteroids (e.g., dexamethasone) can accelerate pain resolution and improve overall symptom relief in moderate-to-severe sore throat or exudative tonsillitis. Although the magnitude of benefit varies and concerns routine corticosteroid

use persists, major reviews cautiously support their selective use. This research forms an important comparison point for evaluating herbal or Unani formulations that claim anti-inflammatory and antipyretic benefits.

Advances in the understanding of tonsillar immunopathology have further clarified potential therapeutic targets. Acute tonsillar inflammation involves epithelial injury, activation of innate immune pathways, neutrophil and lymphocyte recruitment, and cytokine mediated pain and oedema. Laboratory markers such as ESR, differential leukocyte counts and CRP can reflect the inflammatory burden, although they are not routinely required in uncomplicated cases. Therapies capable of reducing inflammatory mediator release, inhibiting microbial adherence or replication, modulating excessive immune responses or forming protective demulcent layers over irritated mucosa hold mechanistic relevance. These pathways correlate with the documented properties of several herbs commonly used in traditional Joshanda preparations.

Within complementary and herbal medicine research, a diverse and growing body of pharmacological evidence supports potential benefits of certain botanical agents used in respiratory conditions. Among these *Glycyrrhiza glabra* (licorice) a key ingredient in many Unani formulations has been extensively investigated. Its bioactive constituents, including glycyrrhizin, demonstrate anti-inflammatory, mucoprotective, demulcent and antimicrobial activities in both experimental and clinical settings. Studies involving glycyrrhiza containing formulations suggest symptomatic improvements in various upper airway and oral mucosal inflammatory conditions, providing pharmacological justification for its inclusion in polyherbal therapies targeting tonsillitis.

Other frequently used botanicals such as *Althaea officinalis*, species of *Malva*, *Zizyphus* and *Cordia* offer complementary therapeutic actions. These herbs are rich in mucilage, exhibit emollient and mild anti-inflammatory properties and have demonstrated mucosal soothing and mucolytic effects in experimental studies. Such actions can reduce throat irritation, improve lubrication and facilitate expectoration important symptomatic endpoints in acute tonsillitis. Although systematic evaluations of multi-herb formulations remain limited compared with studies on single herbs available data suggest that combinations designed to address multiple mechanisms may enhance clinical benefit. Nevertheless, variability in study quality underscores the need for well-designed controlled clinical trials.

From methodological perspective modern clinical research provides clear guidance for evaluating polyherbal formulations intended for conditions like acute tonsillitis. Key considerations include stratification of participants based on GAS status use of validated clinical scoring systems, adoption of standardized symptom assessment scales and integration of objective markers such as ESR and CRP when appropriate. Documentation of concurrent symptomatic therapies, antibiotic use and adverse events is essential. Trials must be adequately powered to detect meaningful differences in symptom duration, intensity and overall recovery rather than relying solely on surrogate biomarkers. Such methodological rigor ensures that findings align with contemporary clinical standards and contribute meaningfully to evidence-based practice.

PHARMACOLOGICAL BASIS OF THE FORMULATION [15–17]

The therapeutic efficacy of the Polyherbal Unani formulation is attributed to the synergistic pharmacological actions of its constituent herbs. Ingredients such as *Asl-us-Soos*, *Sapistan*, *Unnab*, *Behidana*, *Tukhm-e-Khatmi*, *Tukhm-e-Khubbazi* and *Tukhm-e-Khayarain* possess well-documented anti-inflammatory, demulcent, mucolytic, soothing and immunomodulatory properties. These drugs collectively reduce tonsillar inflammation, alleviate mucosal irritation, promote liquefaction and expulsion of phlegm and support natural healing processes of the upper respiratory tract. The combined actions of these herbs form the scientific basis for using this Joshanda in *Warm-e-Lauzatain-Haad* and justify its inclusion in traditional Unani therapeutic protocols (Table 1).

Table 1. Each constituent of Joshanda has actions confirmed through the latest research.

S. N.	Drug	Action
1	Asl-us-Soos (*Glycyrrhiza glabra*)	anti-inflammatory, demulcent and antimicrobial.
2	Sapistan (*Cordia latifolia*)	soothes and expectorant.
3	Unnab (*Zizyphus vulgaris*)	antioxidants, mucolytic, anti-inflammatory.
4	Behidana (*Cydonia oblonga*)	mucilaginous, soothes an irritated throat.
5	Tukhm-e-Khatmi (*Althaea officinalis*)	emollient, anti-inflammatory.
6	Tukhm-e-Khubbazi (*Malva sylvestris*)	demulcent and soothing.
7	Tukhm-e-Khayarain (Cinamomum.Z)	cooling and anti-inflammatory.

These ingredients act synergistically to relieve inflammation, soothe mucosal surfaces and enhance immune response (Figures 1 to 7).

Figure1. ASL-US-SOOS [18].

Figure 2. Sapistan [19].

Figure 3. UNNAB [20].

Figure 4. Behidana [21].

Figure 5. TUKHM-e-khatmi [22].

Figure 6. TUKHM-e-khubbazi [23].

Figure 7. TUKHM-E-Khayarain [24].

MATERIALS AND METHODS

- *Study Design:* Open-label, single-arm clinical study conducted as per ICMR guidelines.
- *Sample Size:* 60 patients of either sex, aged 16–25 years enrolled after taking permission of institutional ethics committee and consent was taken from all patients.

Inclusion Criteria

- Diagnosed cases of Warm-e-Lauzatain-Haad based on clinical signs and symptoms.
- Patients attending OPD/IPD of ZVM Unani Medical College and Hospital, Pune.

Exclusion Criteria

- Patients with systemic diseases (Diabetes, CHD, TB, etc.) or complications (Peritonsillar abscess, Quinsy, etc.).
- Pregnant or lactating women.
- Mentally challenged patients.

Formulation

Joshanda (as per *Makhzan-ul-Ilaj*) is composed of (Table 2):

Table 2. Drugs and quantity.

S. N.	Drug	Quantity
1	Asl-us-Soos (*Glycyrrhiza glabra*)	05 Masha.
2	Sapistan (*Cordia latifolia*)	11 Dana.
3	Unnab (*Zizyphus vulgaris*)	07 Dana.
4	Behidana (*Cydonia oblonga*)	03 Masha.
5	Tukhm-e-Khatmi (*Althaea officinalis*)	05 Masha.
6	Tukhm-e-Khubbazi (*Malva sylvestris*)	05 Masha.
7	Tukhm-e-Khayarain (Cinnamomum Zeyanicum)	06 Masha.

Dosage

20 ml of Joshanda twice daily after meals for 12 days.

Assessment Parameters

- *Subjective:* Pain in throat, dysphagia, fever, earache and tenderness.
- *Objective:* CBC & ESR.

Statistical Analysis

Data analyzed using SPSS v20. Paired t-test and Chi-square test applied. Significance level $p < 0.05$ is observed.

RESULTS

A total of 60 patients (66.7% male, 33.3% female) completed the study. Most participants were aged 20–25 years. All were students and unmarried, predominantly from middle income groups.

Post treatment analysis revealed marked symptomatic improvement. Pain in throat, fever and difficulty in swallowing showed significant reduction ($p < 0.0001$). By day 12, 93.3% of patients were afebrile and free from pain. ESR decreased from 10.33 ± 4.03 to 8.48 ± 2.76 mm/hr ($p = 0.004$) and neutrophil count declined significantly, while lymphocytes increased ($p = 0.0039$). No adverse effects were recorded.

DISCUSSION

The present study demonstrated that the Polyherbal Unani formulation Joshanda is effective in managing Warm-e-Lauzatain-Haad (Acute Tonsillitis). The combination of ingredients such as *Asl-us-Soos*, *Unnab* and *Sapistan* may contribute to its anti-inflammatory, mucolytic and soothing effects.

The reduction in ESR and neutrophil count indicates decreased inflammation, while increased lymphocyte count suggests improved immune response.

These findings align with Unani principles of balancing *Safra* and *Balham* to restore normal temperament and relieve inflammation. The safety rate was excellent, with no adverse reactions reported.

Limitations include a small sample size, short duration and absence of a control group. Future randomized controlled trials are recommended.

CONCLUSION

The Polyherbal Unani formulation Joshanda, mentioned in *Makhzan-ul-Ilaj* significantly reduces clinical symptoms and inflammatory markers in patients with Warm-e-Lauzatain-Haad (Acute Tonsillitis). It is safe, well-tolerated and offers a promising traditional alternative for managing acute throat infections. Larger and controlled studies are warranted to validate these findings.

REFERENCES

1. Nimmana BK, Paterek E. Tonsillitis. Treasure Island (FL): StatPearls Publishing; 2025 Jan–. Available from: https://www.ncbi.nlm.nih.gov/books/NBK544342/.
2. Bartlett A, et al. Acute tonsillitis and its complications: An overview. J R Nav Med Serv. 2015;101(1):69–73.
3. Kabeeruddin H. Sharh-e-Asbab. New Delhi: Idara Kitab-ul-Shifa; 2009. p.360–361.
4. Kabeeruddin H. Al-Akseer. Ejaz Publications House; 2003. p. 399.
5. Gulam Jilani H. Makhzan-ul-Elaj. New Delhi: Idara Kitab-ul-Shifa; 2005. p.262–267.
6. Shamsul Arifain H, Wasim Ahmed Azmi H. Jahan-e-Tibb. Lucknow: Central Research Institute of Unani Medicine; 2010 Apr–Jun. p. 235–236.
7. Victoria State Government. Emergency care. Melbourne: Vic.gov.au; 2026 [cited 2026 Feb 17]. Available from: https://www.health.vic.gov.au/patient-care/emergency-care.
8. Bhargava KB. ENT Diseases. 9th ed. Usha Publications; p. 245–247.
9. Maqbool M. Textbook of Ear, Nose, and Throat Diseases. 7th ed. New Delhi: Jaypee Brothers Medical Publishers; p. 350–355.
10. Maran AGD. Diseases of the Ear, Nose, and Throat. 10th ed. Bombay: K.M. Varghese Company; p. 84.
11. Dhingra PL. Diseases of the Ear, Nose, and Throat. 3rd ed. New Delhi: Elsevier; p. 311–315.
12. Campisi P, Tewfik TL. Diagnosis. Can J Diagn. 2003 Feb; p. 100–103.
13. Kasmi Jonpuri AA. Khulasat-ul-Advia. Faisal Publication; 1997. p. 8, 14, 20, 22, 24, 26.
14. Mohammed Abdul Hakim H. Bustan-ul-Mufrdat. New Delhi: Idara Kitab-ul-Shifa; 2002 Jun. p. 149, 257, 264, 396, 488, 518, 556.
15. Naseer Ahmed Tarik H. Taj-ul-Mufrdat. New Delhi: Idara Kitab-ul-Shifa; 2004 Jul. p. 171, 334, 342, 501, 660, 693.
16. Kabeeruddin H. Makhzan-ul-Mufradat. New Delhi: Idara Kitab-ul-Shifa; 2010 Jan. p. 117, 153, 154, 211, 251, 295, 390.
17. Najmulgani Rampuri H. Khaza-e-nul Advia. New Delhi: Idara Kitab-ul-Shifa; p. 419, 661, 676, 787, 950, 1260.
18. Zaigham M. Aslussoos (Glycyrrhiza glabra Linn): A root with immense pharmaceutical potential and its utilization in Unani system of medicine. Int J Herb Med. 2019 Jan 1.
19. Tsammalex Project. Cordia myxa. Available from: https://tsammalex.clld.org/parameters/cordiamyxa [cited 2025 Dec 9].
20. Lone AH, Ahmad T, Anwar M, Sofi G. Clinical efficacy and safety of a pharmacopial polyherbal Unani formulation in pityriasis versicolor: A comparative randomized single-blind study. J Altern Complement Med. 2012 Oct;18(10):978–82.
21. Ahmad N, Nawab M, Kazmi MH, Fatima SH. Evaluation of efficacy and safety of a polyherbal Unani formulation in diabetes mellitus type 2 (Zayābīṭus sukkari qism sāni): A randomized controlled clinical study. Indian J Tradit Knowl. 2021;20(1):15–20.

22. Lone AH, Ahmad T, Anwar M, Sofi G, Naiyar AH. Clinical evaluation of efficacy and safety of a polyherbal formulation in acne vulgaris. Egypt Dermatol Online J. 2011;7(2):2.
23. Ali SM, Alam M, Jamal A. Clinical evaluation of the efficacy of polyherbal Unani formulations in scabies. Indian J Tradit Knowl. 2006 Apr;5(2):220–3.
24. Parveen FS, Quamri M, Shahid A, Ahmed K, Santosh T. Efficacy and safety of a polyherbal Unani formulation versus atorvastatin in dyslipidemic patients: A monocentric, prospective, randomized, standard-controlled clinical trial.

