

HAJAR UL YAHOOD (JEW'SSTONE) ANTI-UROLITHIATIC UNANI MINERAL DRUG – REVIEW

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ABSTRACT

Hajar ul yahood is well known mineral Unani drug used for the treatment of urolithiasis. *Hajar ul yahood* is having Mufattit-e-Hasat (*Lithortriptic*) and Mudirr-e-Baul (*Diuretic*) property. It is used to treat Hasat-e-Kulya (*Renal calculus*), Ehtebas-e-Baul (*Anuria*), Ushr-ul-Baul (*Dysuria*) due to its action mentioned above. Unani classical literature was searched for its complete description viz. temperament, actions, therapeutic uses, and dosage etc. For toxicological studies, pharmacological activities, and clinical trials carried out to prove the importance of *Hajar ul Yahood* computerized databases such as Medline, Pubmed, Ovid SP, Google Scholar and Science-direct were searched. From above review we can conclude that chemical

composition, in vitro mechanism of action and clinical efficacy and safety of *Hajar ul Yahood* in the treatment of urolithiasis is established. Even its formulation “Kushta Hajar ul Yahood” is found to be safe in animals study. To benefit the mass clinical trial on larger sample size may be conducted.

KEYWORDS: *Hajar ul Yahood, Urolithiasis, Lapis judaicus, Unani medicine, Jew's stone*

INTRODUCTION

The Unani System of Medicine is a comprehensive medical system, which is based on Hippocratic (460-377 BC) theory of humours. Unani System of medicine has been known for the use of Plants Minerals and Animal origins drugs for the prevention and treatment of disease.^[1] Various mineral origin drugs are used for treatment of different diseases. Varieties of herbo-mineral and animal original drugs preparation are used to treat urolithiasis. *Hajar ul*

Yahood and its preparations are widely used to treat the urinary stones. Its scientific name is *Lapis judaicus* and used as medicine in Unani system of medicine since a long. The great Unani scholar Dioscorides firstly mentioned this in his treatise *Kitab ul Hashaish*.^[2] *Lapis judaicus* has a long history of use in both eastern and western traditional medicines for urinary diseases.^[3-4]

MATERIAL AND METHODS

In present review Unani classical literature was searched for its complete description viz. temperament, actions, therapeutic, and dosage uses etc. For toxicological studies, pharmacological activities, and clinical trials carried out to prove the importance of *Hajrul Yahood* computerized databases such as Medline, Pubmed, Ovid SP, Google Scholar and Science-direct were searched. All the information on *Hajrul Yahood* available in Urdu, Persian, Arabic and studies published abstract were included.

Vernacular names^[5-18]

English: *Lapis judaicus*/ Judas stone/ Jews stone/Fossil encrinite **Persian:** Sang Yahood, Zaitoon bani Israel **Arabic:** *Hajar ul Yahood* **Hindi:** Pathar ber.

Description: *Hajrul Yahood* is a fossilized, tasteless stone of short length resembling a small nut. It bears various parallel lines coming from opposite directions and intersecting each other giving it an appearance like the bright scales of a fish. It easily dissolves in water.^[3,17] Jews' stones have a variety of morphological presentations i.e. Olive shape, bone shape, shell shape, spindle shapes and other shapes.^[19] The two types of Jews' stone are referred i.e 'male' and 'female' varieties. The 'male' has more slender spines with tuberculated longitudinal ridges, while the 'female' form having more expanded with smooth surface.^[7,20]

Occurrence: It is found in hilly area of Europe, North Africa, Palestine, Syria and Middle East. It is easily available in the market places of Iran, Iraq, Afghanistan, Jordan, India, and Pakistan.^[7-8,21-23]

Temperament: There is conflict in statement among Unani scholars for its temperament some says it is Hot and Dry, according to Galen its temperament is moderate and some other say it is having temperament Cold and dry.^[5,7-17]

Action: Unani scholars mentioned its action as: Mudirr-e-Baul (*Diuretic*), Mufattit-e-Hasat (*Lithoriptic*), Mane Munjammid-e-dam (anticoagulant).^[5-17]

Uses: According to their action Unani scholars recommended *Hajrul Yahood* in the following disease conditions: Used in Hasat-e-Kulya (*Renal calculus*), Ehtebas-e-Baul (*Anuria*), Ushr-ul-Baul (*Dysuria*).^[5-17] A combination of 2.25 gm *Hajar ul Yahood* powder along with 2.25ml hot water and 4.5 ml *Roghan Badam Talkh* (oil of *Prunus amara*) is useful in dissolving kidney stones and relieving dysuria.^[7] It is recommended to be used in two forms either powder as such or in the form of kushta (*calx*).^[7]

Potent Action: The potent action of hajr ul yahood is *Mufattit-e-Hasat (Lithotriptic)*.^[7-18]

Dosage: Unani scholars advocated for the use of powder and calx. For powder from its dose may be 1- 1.5 gm (*powder*),^[7-10, 12-15,18], for calx it may be 125-250 mg (*calx*).^[18,24]

Elemental analysis/ composition: Based on CHN (Carbon, Hydrogen and Nitrogen analyzer) and GC/MS results the *Lapis judaicus* powder contain 26.55% carbon, 0.97% hydrogen almost no nitrogen and any organic material. Moreover, trace amounts (less than 0.001%) of Phosphorus, Chlorine, Nickel, Palladium, Sodium, Sulfur, Titanium, Chromium, Copper, Potassium, Manganese, Palladium, Gadolinium, Bismuth, Ruthenium, Indium and Cerium were founded. *Lapis judaicus* contains high concentrations of calcium, magnesium, and silicon and lower amounts of aluminium, sulfur, iron, potassium, and strontium (CaO 49.77%, MgO 4.28%, SiO₂ 1.07%, Fe₂O₃ 0.50%, Al₂O₃ 0.33% and Sr 0.08%). No heavy metals were identified by atomic absorption spectrometer method.^[19]

Pharmacological Activity

In vitro studies indicated that *Lapis judaicus* powder can reduce the size of calcium oxalate stones due to presence of magnesium, which is a protective agent in calcium oxalate crystal growth. Moreover its basic pH nature could be another inhibitor for stone production. Furthermore SiO₂ can change calcium oxalate monohydrate to calcium oxalate dihydrate, which is more soluble.^[19,25-27]

Clinical Trial

The double-blind randomized clinical trial was conducted to assess the efficacy and safety of *Lapis judaicus* on the size of calcium kidney stones and some related biochemical factors in blood and urine. Sixty patients older than 18 years with renal stones 5 mm or bigger kidney stone disease were included. Thirty patients received 2 g of *Lapis judaicus* powder in hard capsules per day for 10 weeks, and another 30 patients received a placebo for the same

period. Ultrasonography was performed on patients, and blood and urine samples were collected before and after the study to evaluate the efficacy and safety of *Lapis judaicus* in calcium kidney stone patients. *Lapis judaicus* powder significantly reduced the size of stone and in 9 patients the stone was completely dissolved. Moreover, urine calcium concentration and specific gravity were reduced and urine magnesium was increased *Lapis judaicus* did not affect BUN, creatinine, ALT, or AST.^[28]

Toxicity Study of Kushta Hajar ul Yahood

Kushta hajar ul yahood is one of the important formulations and widely used to treat urinary stones. *Acute toxicity study* was conducted as per the OECD guidelines. No mortality was observed up to 5000 mg/kg, hence test formulation was classified as safe (Category 5) as per OECD guideline 423. In *sub-acute toxicity*, *Kushta hajar ul yahood* in doses of 1000, 500 and 333.33 mg/kg b.w. did not show any statistically significant changes in haematological and biochemical parameters and not show any significant changes in cellular architecture.^[29]

Adverse Action: According to Unani scholars *hajar ul yahood* may not be prescribed to persons who have challenges with liver and spleen.^[5,7-10,14-15,18]

Correctives: Unani system of medicine also has a unique speciality of adding Corrective Drugs (*Mushlih Adwiya*) to counter the toxicity of the main drug. It is recommended that the following drugs are correctives or *Musleeh* for *hajar ul yahood* i.e. *Samag-e-arbi* (gum of *Acacia arabica/nilotica* Willd.), *Asl* (Honey), *Loabiyat* (mucilages).^[5,7,10,14,18]

Substitute: Unani scholars also said that in case of non availability of genuine medicine a substitute may be used. They recommended *Tukhm-e-karafs* as a substitute of *hajar ul yahood*.^[5,7,10,14,18]

Important Formulations: Some important classical Unani formulations in which *Hajar ul Yahood* is one of the ingredients mentioned in National Formulary of Unani Medicine. *Kushta Hajar ul Yahood*^[30-31], *Majoon Hajar ul Yahood*^[30], *Majoon Yadullah*^[32], *Majoon Sang Sarmahi*^[31], *Majoon Ibne Sarafiyoon*^[33], *Sufoof Hajar ul yahood*^[30], *Ikseer Atfal*^[34], *Qurs Suzak*^[34], *Dawa-e-Gurda*.^[34]

CONCLUSION

Hajar ul yahood is well known mineral Unani drug used for the treatment of urolithiasis. Urolithiasis is a common urological disease that affects approximately 15% population

worldwide and about 2.3% population of India. In modern system of Medicine no effective pharmacological treatment available for getting safe removal of stones, such patients are mostly treated surgically either by open surgery, percutaneous nephrolithotomy (PCNL) or extracorporeal shockwave lithotripsy (ESWL). Further the above mentioned medical treatments are costly, and the rate of stone recurrence is high. From above review we can conclude that chemical composition, in vitro mechanism of action and clinical efficacy and safety of hajar ul yahood in the treatment of urolithiasis is established. Even the formulation of Hajar ul Yahood namely "*Kushta Hajar ul Yahood*" is found to be safe in animals. To benefit the mass clinical trial on larger sample size may be conducted. In similar manner clinical trial on *Kushta Hajar ul Yahood* is the need of hour. The use of *Hajar ul Yahood* for the treatment of urolithiasis is cost effective and free from side effects. Moreover the use of *Hajar ul Yahood* preparations along with other Unani formulation may minimize the recurrence of kidney stones.

REFERENCES

1. Anonymous. Unani System of Medicine: The Science of Health and Healing, Ministry of AYUSH Government of India, 2016.
2. Duffin CJ. Lapis Judaicus or the Jews' stone: the folklore of fossil echinoid spines. *Proceedings of the Geologists' Association*, 2006; 117: 265-75.
3. Gould SJ. *I Have Landed: The End of a Beginning in Natural History*. Cambridge, MA: Belknap Press of Harvard University Press, 2011; 167-174.
4. Makbul SAA, Jahan N, Ahmad G. Hajrul yahood (Lapis judaicus): An important mineral drug of Unani system of medicine for the management of urolithiasis. *J Ethnopharmacol*, 2018; 222: 165-70.
5. Ghani MN. *Khazaain-al-Advia* (urdu translation), Idara Kitaabul Shifa, New Delhi, pp 648-49.
6. Ibn-Sina. *Canon of Medicine Book II Materia Medica*, English translation, New Delhi, India, Deptt. of Islamic Studies Jamia Hamdard (Hamdard University): 1998, pp 162-63.
7. Khan MA. *Muheet-e-Azam*. Vol-II, New Delhi, Central council for Research in Unani Medicine Publication, 2013; 332-33.
8. Ibn Baitar ZU. *Kitab-al-Jami-ul-Mufradat-al Adviawal Aghzia*. Vol-II, (urdu translation), New Delhi, Central council for Research in Unani Medicine Publication, 1986; 293-97.
9. Israili AM. *Muqadda Aqsarayi Sharah Moujaz*. Lucknow, Matba Munshi Nawal Kishore, 1907; 705-6.

10. Rafiquddin M. Kunzul Advia Mufrada. (Aligarh, University publication unit, Sarfaraz house, 1985; 304-5.
11. Haleem MA. Mufradat-e-Azizi, Reprint, New Delhi, Central council for Research in Unani Medicine Publication, 2009; 71.
12. Hakeem MA. Bustan-ul-Mufradat. Delhi, Aijaz Publishing House, 2011; 201.
13. Majoosi AA. Kamil-us-Sana. (Urdu translation by Ghulam H Kantoori), vol-II, part I New Delhi, Central council for Research in Unani Medicine Publication, 2010; 282-4.
14. Kabiruddin M. Makhzan-ul-Mufradat. vol-I, Hyderabad, National fine Printing Press, 1955; 260.
15. Ali SS. Unani Advia Mufrada. 10th Eds, New Delhi, National Council for Promotion of Urdu Language, 2004; 300.
16. Lubhaya R. Bayanul Advia. Vol-I, Lahore, Idara Matbul Sulemani, 2001; 190.
17. Singh D. Unani Daravyagun Vigyan. Bombay, Nirnay Sagar press, 1949; 509-10.
18. Mustehasan, Ali A. Advia Madania. New Delhi, Aijaz Publishing House, 2004; 31-32.
19. Faridi P, Seradj H, Mohammadi-Samani S, Roozbeh J, & Mohagheghzadeh A. Elemental analysis, physicochemical characterization and lithontriptic properties of Lapis judaicus. *Pharmacognosy Journal*, 2013; 5(2): 94-6.
20. Christopher J, Duffin Lapis. Judaicus or the Jews' stone: the folklore of fossil echinoid spines, 2006; 117(3): 265-75.
21. Hooper D, Field H. Useful plants and drugs of Iran and Iraq. Botanical series field museum of natural history, 1937; 9: 73-241.
22. Lev E, Dolev Z. Ethnopharmacological survey of traditional drugs sold in the kingdom of Jordan. *J. Ethnopharmacol.*, 2002; 82: 131-45.
23. Ali SAM, Mahdi Hassan S. Bazaar medicines of Karachi-the drugs of animal origin. Pakistan, Bazaar drugs and Folk Medicine in Pakistan, 1984; 69-73.
24. Vohra SB, and Athar M. Mineral Drugs Used in Ayurveda and Unani Medicine. New Delhi, Narosa Publishing House, 2008; 22-23, 90.
25. Rao N, Shah J, Patel K, Gandhi T. Evaluation of the efficacy of Hajarul Yahud Bhasma in urolithiasis using rat as an experimental model. *Indian J Pharmacol*, 2008; 40: 184.
26. Basavaraj DR, Biyani CS, Browning AJ, Cartledge JJ. The role of urinary kidney stone inhibitors and promoters in the pathogenesis of calcium containing renal stones. *Eau-ebu Update Ser*, 2007; 5: 126-136.

27. Yu H, Sheikholeslami R, Doherty WOS. The effects of silica and sugar on the crystallographic and morphological properties of calcium oxalate. *J Cryst Growth*, 2004; 265: 592-603.
28. Faridia P, Seradjb H, Mohammadi-Samanic S, Vossoughid M, Mohagheghzadehan A, Roozbeh J. Randomized and double-blinded clinical trial of the safety and calcium kidney stone dissolving efficacy of *Lapis judaicus*. *J. Ethnopharmacol*, 2015; 156: 82-87.
29. Ahmed SA, Makbul A, Jahan N. Acute and Sub-acute Toxicity Study of Kushta Hajrul yahood (Calx of *Lapis judaicus*): A Unique Herbomineral Unani Formulation. *International Journal of Pharmaceutical Sciences Review and Research*, 2020; 60(1): 16-23.
30. Anonymous. National Formulary of Unani Medicine. Part-I, New Delhi, Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India, 2006; 70,127,235.
31. Anonymous. National Formulary of Unani Medicine. Part-V, New Delhi, Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India, 2008; 55: 105.
32. Kabeeruddin M. Bayaz e Kabeer. Part-II, Hyderabad, Hikmat book depot, 1938; 145.
33. Anonymous. National Formulary of Unani Medicine. Part-II, New Delhi, Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India, 2007; 72-73.
34. Anonymous, National Formulary of Unani Medicine part-VI (Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India), 2011; 26: 35, 100.