



EFFECT OF UNANI FORMULATIONS ON URETERIC CALCULUS (HISAT-E-HALIB) – A CASE REPORT

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ABSTRACT

Ureteric stone is an important and frequent emergency in medical practice due to obstruction in urinary tract. Despite advance technology of lithotripsy, the management of renal calculi remains a challenge. Because of the high cost and adverse effects of minimally invasive techniques, it is needed to adopt the alternative and safe treatment like Unani system of Medicine to avoid surgical procedure. The present paper deals with a case study in which a 25 years old male patient of uretric calculi was treated with Unani pharmacopeal medicine; *Qurs Kaknaj*, *Kushta Hajrul Yahood*, *Jawarish Zaruni*, *Sharbat Buzoori Motadil* and *Sharbat Aloo Balu* as oral administration, with the aim to evaluate the efficacy of drugs and to avoid Surgery. Patient has shown excellent result in subsequent investigations and finally patient got free from ureteric calculus of 8mm in size just within 6 days of unani treatment without operation.

KEYWORDS: Urolithiasis, Uretric Stone, Unani Medicine, Anti-urrolithiatic, Diuretic, Litholytic.

INTRODUCTION

Ureteric calculi or stones are those lying within the ureter, at any point from the ureteropelvic junction (UPJ) to the ureterovesical junction (UVJ). They are the classic cause of renal colic-type abdominal pain. They are a subtype of the broader pathology of urolithiasis. The lifetime prevalence of Uretric stones is 5–12% of the population and recurrence rates approach 50%. The risk is increased with a past history of ureteric calculi and with positive family history.^[1]

Basically Ureteric stones are formed in kidney. According to Greek-o-Arab physician, *Ali Ibn-e-Abbas Majoosi* (930-994 AD), when more concentrated humors (*akhlath*) and highly viscous fluid adhere to the calyces of kidney, thus these humors and fluid dried by the high virulent temperature to form crystal and after some time gradually becomes stone.^[2] while according to recent concept it formed due to two mechanisms; first is where stone-forming substances such as calcium or uric acid supersaturate the urine beginning crystal formation, and other mechanism depends on stone-forming substances depositing in the renal medullary interstitium forming a Randall plaque and eventually eroding into the papillary urothelium, creating a calculus.^[3] When they move along the ureter, causes blocking the flow of urine and intermittent, sudden on onset, severe pain associated with nausea, vomiting and hematuria. If neglected it can cause obstructive uropathy, sepsis, and renal failure.^[4]

Despite various technological advances in minimally invasive therapy like extracorporeal shock wave lithotripsy (ESWL), ureteroscopic lithotripsy, and percutaneous endourological techniques the management of renal calculi remains a challenge. Due to the high cost, adverse effects and complications of minimally invasive techniques, it is needed to adopt the alternative and safe treatment like Unani Medicine to avoid surgical procedure. In Unani System of Medicine, the recommended lines of treatment to control urolithiasis and to expel out the destroyed stones are illustrated as plenty of fluid, *tafteet-e-hisat* (litholytic / lithotriptic), *idraar-e-baul* (diuresis), *tahleel-e-waram* (resolution) *dafey-e-tashannuj* (anti-spasmodic), along with *taqwiyat-e-kul 'yah* (nephroprotective).^[2,5]

CASE PRESENTATION

A 25 years old man having urolithiasis, visited to Govt. Unani Dispensary, Bheemganj Mandi, Kota, Rajasthan, India, for treatment. Since 22 days he suffered from recurrent intermittent pain in right renal angle, right lumbar & iliac regions of abdomen, radiating towards suprapubic, scrotum, tip of penis and thigh, associated with nausea, vomiting, increase frequency & dribbling of urination, burning micturition with foul smelling and reddish yellow color of urine. He had past history of nephrolithiasis 2 years ago.

The diagnosis was confirmed by Ultrasonography (USG) of abdomen and pelvic; findings suggested as a single

stone of 8 mm in size at lower end of right ureter and by plain X-ray of abdomen for KUB (Kidney Ureter Bladder); finding showed as ureteric calcification.

The patient has been prescribed to take two pills of *Qurs Kaknaj*, 5 gm of past (*jawarish*) prepared by mixing of *Kushta Hajrul Yahood* 7.5 gm with *Jawarish Zarooni* 125 gm, 20 ml of *Sharbat Buzoori Motadil* with plain water twice a day at morning and evening, and 20 ml of *Sharbat Aalu Balu* at noon and night on empty stomach orally. All advised Unani compound drugs are pharmacopeal, marketed from GMP certified company Hamdard and formulated according to Bayaz-e-Kabeer Volume-2.^[6,7]

The ingredients of *Qurs Kaknaj* are *Aslussoos* (*Glycyrrhiza glabra*) (Rz.) (Pdr.) 49.5 mg., *Behdana* (*Cydonia oblonga*) (Sd.) (Pdr.) 49.5 mg., *Tukhm-e-Khubbazi* (*Malva sylvestris*) (Sd.) (Pdr.) 49.5 mg., *Tukhm-e-Khurfa* (*Portulaca oleracea*) (Sd.) (Pdr.) 49.5 mg., *Tukhm-e-Khashkhash* (*Papaver somniferum*) (Sd.) (Pdr.) 58.5 mg., *Tukhm Khatmi* (*Althaea officinalis*) (Sd.) (Pdr.) 49.5 mg., *Habb-e-Kaknaj* (*Physalis alkekengi*) (Fr.) (Pdr.) 99.0 mg., *Kateera* (*Cochlospermum religiosum*) (Gum) (Pdr.) 39.0 mg., *Gond Safaid* (*Acacia arabica*) (Gum) (Pdr.) 198.0 mg., *Maghz Kharbooza* (*Curcumis melo*) (Kernel) (Pdr.) 69.0 mg., *Maghz-e-Kaddu* (*Cucurbita moschata*) (Kernel) (Pdr.) 69.0 mg., *Nishasta Gandum* (*Triticumsativum*) (Sd.) (Pdr.) 49.5 mg.^[6]

The constituents of *Kushta Hajrul Yahood* are (Each 90 mg. contains) *Hajrul Yahood* (*Lapislazuli*) 93.50 mg., *Shora Qalmi* (*Potassium nitrate*) 187.00 mg. *Aab-e-Turab* (*Rafanus sativus*) (Rt.) (Jce.) 1.496 gm.^[6]

The ingredients of *Jawarish Zaruni* are (Each 5 g contains) *Tukum-e-Karafs* (*Apium Graveolens*) (Sd.) (Pdr.) 135.2 mg, *Tukum-e-Gazar* (Sd.) (Pdr.) 135.2 mg, *Tukum-e-Ispast*, (*Peganum Hemala*) (Sd.) (Pdr.) 135.2 mg, *Ajwain* (Sd.) (Pdr.) 135.2 mg, *Badyan* (*Foeniculum Vulgare*) (Sd.) (Pdr.) 135.2 mg, *Maghz Tukum Kharbooza* (*Cucumis melo*) (Sd.) (Pdr.) 135.2 mg, *Maghz Tukum Khiyarain* (*Cucumis Sativus*) (Sd.) (Pdr.) 135.2 mg, *Post-e-Beikh-e-Karafs* (*Apium Graveolens*) (Rt. Brk.) (Pdr.) 135.2 mg, *Aqarqarha* (*Anacyclus Pyrethrum*) (Rt.) (Pdr.) 42.0 mg, *Khurfa* (*Portulaca Oleracea*) 42.0 mg, *Zafran* (*Crocus Sativus*) (Stg.) 42.0 mg, *Mastagi* (*Pistacia Lentiscus*) (Rs.) (Pdr.) 42.0 mg, *Shahad* 3.75 g, Preservative: Sodium Benzoate.^[6]

The ingredients of *Sharbat Buzoori Motadil* are (Each 25 ml. contains) Aqueous extract from *Tukhm-e-Kasni* (*Cichorium intybus*) (Sd.) (Ext.) 2.01 gm. *Tukhm-e-Kheera* (*Curcumis sativus*) (Sd.) (Ext.) 2.01 gm. *Tukhm-e-Kakdi* (*Curcumis sativus*) (Sd.) (Ext.) 2.01 gm. *Beikh-e-Badyan* (*Foeniculum vulgare*) (Rt.) (Ext.) 2.01 gm. *Tukhm-e-Kharbooza* (*Curcumis melo*) (Sd.) (Ext.) 2.01 gm. *Beikh-e-Kasni* (*Cichorium intybus*) (Rt.) (Ext.) 4.32 gm. *Qand-e-Safed* (*Sugar*) (Crystal) 24.2 gm.^[6]

The constituents of *Sharbat Aloo Balu* are (Each 25 ml contains) aqueous extract from *Aalu Balu* (*Prunus Cerasus*) 6.25 gm, *Qand-e-Safaid* (*Saccharum officinarum*) 25.00 gm.^[6]

RESULTS AND DISCUSSION

The clinical improved response was excellent and significant and 8 mm calculus flushed out in three broken part at 6th day of treatment through urine (Figure-1 & Figure-2). Ultrasonography (USG) and plain X-ray of abdomen for KUB (Kidney Ureter Bladder) performed after flushed out of stone at 7th day of treatment, findings suggested as normal and no any calculus or mass seen in ureter. Spontaneous passage of stone by 20 weeks, at the rates; 0-3 mm: 98%, 4 mm: 81%, 5 mm: 65%, 6 mm: 33%, >6.5 mm: 9% has been reported but in this study, passing out of 8 mm stone through unani medicine, just within 6 days, is recorded. All prescribed Unani pharmacopeal medicines were found to be safe and effective. The beneficial actions of these pharmacopeal medicines can be attributed to the presence of complex spectrum of actions including anti-inflammatory, antimicrobial, diuretic, antispasmodic, litholytic and lithotriptic activities in their ingredients.

Qurs Kaknaj has been described as diuretic (*mudirr-e-baul*), litholytic (*mufattit-e-hisat*), lithotriptic (*mukhrij-e-hisat*), renal and urinary bladder wound healer.^[8] Its chief constituent *habb-e-kaknaj* (*Physalis alkekengi* fruit) is commonly used since ancient times in unani medicine as diuretic, lithotriptic, anti-inflammatory and nephroprotective.^[9-10] It is investigated the main phytochemical constituents of *Physalis alkekengi* are alkaloids (Tropanes), flavonoids, sterols, fattyacids and amino acids.^[11] The flavonoids are reported to have a role in analgesic action by targeting the prostaglandins and alkaloids are known for their ability to inhibit pain perception.^[12] It also possesses antispasmodic activity mainly via calcium influx blockade, partially through blocking β -adrenoceptors and nitric oxide synthesis.^[13]

Kushata hajrul Yahood is useful as a diuretic and a lithotriptic.^[7,8] It is specially given in pathological conditions of the urinary tract such as retention of urine, gonorrhoea and urethral ulcer.^[7,8] *Hajrul Yahood Bhasma* is a rich source of Magnesium hydroxide [$Mg(OH)_2$] which react with Calcium Oxalate Calculus and forms Magnesium oxalate soluble complex.^[14] This process helps disintegration of large calculi into the smaller particles. *Aab-e-Turab* (*Rafanus sativus* root juice) demonstrated for its anti-urolithiatic and diuretic activities.^[15]

Jawarish Zaruni has been described as diuretic, kidney tonic and nephroprotective, useful in burning micturition, nephritis and nephrotic syndrome like condition. It is investigated as diuretic, by striking increase in total urine output over a period of 6 hours, and increase in excretion of sodium and potassium significantly. It is also investigated that it produced remarkable

nephroprotective effect against gentamicin-induced nephrotoxicity.^[16]

Sharbat Buzuri Moatadil mainly indicated as diuretic (*mudirr-e-baul*).^[18] It is claimed to have an anti-urolithiatic agent. It can prevent the recurrence stone formation by forming soluble calcium compound with citric acid. It also has alkalizing effect.^[17] Its chief ingredient *Beikh-e-Kasni* (*Cichorium intybus* root) possesses anti-inflammatory and nephroprotective activities.^[18,19] It is reported the ethyl acetate extract of *Cichorium intybus* roots produced inhibition of prostaglandin E2 (PGE2) production in human colon carcinoma HT29 cells by inhibition of expression of cyclooxygenase-2 (COX-2) and direct inhibition of COX enzyme activity.^[18] The ameliorative effect of ethanolic extract of *Cichorium intybus* was investigated using cisplatin induced nephrotoxicity on rats. The extract was found to reduce nephrotoxicity with no sign of toxicity.^[19] *Tukhm-e-kheera* (*Cucumis sativus*) shown to have anti-urolithiatic activity by hastening the process of dissolving the stones in kidney. It prevents oxalate induced lipid peroxidation and causes regeneration of renal epithelium.^[20]

Sharbat Aloo Balu used as diuretic (*mudirr-e-baul*), litholytic (*mufattit-e-hisat*), lithotriptic (*mukhrij-e-hisat*).^[21] Its chief ingredient *Aalu Balu* (*Prunus Cerasus*) investigated as Antioxidant and anti-inflammatory activities. It is reported that phenolic compounds from hydroalcoholic extracts of *Prunus Cerasus* fruit has a potent cyclooxygenase enzymes-2 inhibitor.^[22]

Photograph of excreted out Hisat-e-Halib (Ureteric Calculus)



Figure1



Figure 2

CONCLUSION

The present study shows that unani pharmacopeal medicine; *Qurs Kaknaji*, *Kushta Hajrul Yahood*, *Jawarish Zaruni*, *Sharbat Buzoori Motadil* and *Sharbat Aloo Balu* are safe and effective in the treatment of ureteric calculus (*hisat-e-halib*) as these decrystallizes and helps in expulsion of ureteric stone faster with symptomatic relief. Hence unani formulations could be useful in urolithiasis (*hisat-e-bauliyah*) as alternative therapy to avoid surgery.

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ABBREVIATIONS

Rz. = Rhizome, Pdr. = Powder, mg. = Milligram, Sd. = Seed, Fr. = Fruit, Rt. = Root, Jce. = Juice, gm. = Gram, Brk. = Bark, Stg. = Stigmas, Rs. = Resins, Ext. = Extract.

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