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## Clinical evaluation of majoon sang-e-sarmahi and sharbat buzoori motadil sada in nephrolithiasis (*Hisat-e-Kulliyah*): A case study

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### Abstract

Nephrolithiasis (*Hisat-e-Kulliyah*) are the common problem worldwide with its increasing prevalence, they are imposing significant morbidity and economic burden for both developing and developed countries. The incidence and prevalence of kidney stones have increased over the past four decades. Renal calculus is a solid or crystal aggregation formed in the kidneys from the minerals in the urine. Many calculi are formed in the kidneys and passed without causing any symptom. The diagnosis ranges from asymptomatic findings of limited clinical significance to multiple painful episodes of ureteral obstruction with eventual kidney failure. Although there have been advances in approaches to predict and manage renal stones, but notable changes remain. So, to overcome these challenges there is an urgent need to develop trust towards the safer indigenous medicine by establishing its validity in treatment and for this purpose Unani medicine can play an important role in dissolution and expulsion of stones with its litholytic, lithotryptic and diuretic actions without any side-effects. The present paper deals with a case study in which a 30 years old male patient of bilateral renal calculi ranging from 3mm to 10.3 mm was treated with Unani Pharmacopeal compound medicines; Majoon Sang-e-Sarmahi and Sharbat Buzoori Motadil Sada as an oral administration. At the end of study patient shows excellent result with complete expulsion of multiple renal calculi within one month of Unani therapy without any surgical intervention.

**Keywords:** Nephrolithiasis, hisat-e-kulliyah, calculi, unani medicine, diuretic, lithotriptic

### Introduction

Renal calculi affects up to 5% of the population with lifetime risk of passing a kidney stone of about 8-10%<sup>[1]</sup>. Increase incidence of renal stones in the industrialized world is associated with the improved standard of living and is strongly associated with race ethnicity and region of residence<sup>[2]</sup>. The peak age in men is 30 years, women have bimodal age distribution, with peak at 35 years and 55 years. Once these stones form the probability that second stones will form within five to seven years is approximately 50%<sup>[1]</sup>. Most stones are composed of calcium oxalate and phosphate; these are more common in men. Mixed infective stones which accounts for about 15% of all calculi; are twice as common in women as in men. The overall male to female ratio of stone disease is 2:1. The risk of occurrence increases if a metabolic or other abnormality predisposing to stone formation is present and is not modified by treatment<sup>[3]</sup>. Eminent Unani physician *Zakaria Raazi* (850-923 AD), mentioned in his classical texts that the cause of the disease is abnormal humor in the form of viscid fluid which moves towards kidneys and forms crests that causes the stone formation which are mainly recurrent in nature<sup>[4]</sup>. According to Modern Medicine renal stones are composed of insoluble salts from the urine and are formed by two basic mechanisms. The first mechanism is the aggregation of crystals with non-crystalline protein (matrix) component. The salt in the urine precipitates and crystallize aggregating the crystals and causing them to grow into a mass sufficient to cause clinical symptoms<sup>[5]</sup>. In second mechanism which is mostly responsible for calcium oxalate stones, deposition of stone material occurs in renal papillary calcium phosphate nidus, typically a Randall's plaque<sup>[6]</sup>. Nephrolithiasis may present in different ways, but the classical presentation is with acute colicky pain from loin to groin associated with nausea and vomiting. This combines with renal angle tenderness, microscopic hematuria, dysuria and strangury<sup>[7]</sup>. Stones that obstruct the ureter or renal pelvis causes excruciating intermittent pain<sup>[8]</sup>. Recent technological improvements in Percutaneous nephrolithotomy (PCNL) techniques are promising but there is a lack of high-level evidence on its safety and efficacy<sup>[2]</sup>.

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So, to provide non-invasive, economical treatment with no side effects to the patient, Unani system of Medicine with its lithotriptic, litholytic, diuretic and anti-inflammatory properties can be beneficial in nephrolithiasis (*hisat-e-kulliyah*) as mentioned in Unani classical literature<sup>[4, 9-12]</sup>.

### Case Presentation

A 30 years old male patient having bilateral multiple renal calculi visited Government Unani Dispensary, Majajpur, Bharatpur, Rajasthan presenting with the complaints of dull aching pain bilaterally over the renal angle which sometimes radiates from loin to groin, associated with nausea, burning micturition and strangury. He also has the history of renal calculi 5 years ago with a positive family history. The diagnosis of nephrolithiasis (*hisat-e-kulliyah*) was confirmed after the Ultrasonography (USG) of whole abdomen including pelvis. The findings of USG are suggestive of bilateral renal calculi, measuring 10.3mm, 3.8mm and 2.5mm in right kidney and 3.1, 3.0mm in left kidney. The patient was advised to take 6 gm of Majoon Sang-e-Sarmahi with 20ml of Sharbat Buzoori Motadil Sada twice a day in morning and evening at empty stomach orally. Both these drugs are pharmacopeal and marketed by Dehlvi Ambar Herbals Pvt. Ltd. which is a GMP certified company and formulated according to Bayaaz-e-Kabeer Vol-2.

The ingredients of Majoon Sang-e-Sarmahi (Each 5gm contains) Tukhme Kharbuza (*Cucumis melo*, Sd.,Pdr.) 873mg, Tukhme Qurtum (*Carthamus tinctorius*, Sd., Pdr.) 175mg, Aloo Baloo (*Prunus cerasus*,Fr.,Pdr.) 175mg, Kulthi (*Dolichos biflorus*, Sd.,Pdr.) 175mg, Tukhme Kasoos (*Cuscuta reflexa*.Sd., Pdr.) 524mg, Badiyaan (*Foeniculum vulgare*, Fr.,Pdr.) 349mg, Sang-e-Sarmahi (Stone head of *Otoliths* spp.) 349mg, Hajrul Yahud (Fossil encrinite) 349mg, Qand Safed (sugar) 6.8gm and Sodium Benzoate as a preservative<sup>[12]</sup>.

The ingredients of Sharbat Buzoori Motadil Sada are (Each 25ml 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-Kakri (*Curcumis sativus*) Sd. (Ext.) 2.01 gm, Beikh-e-Badiyan (*Foeniculum vulgare*) (Rt.)(Ext.) 2.01gm, Tukhm-e-Kharbooza (*Curcumis melo*)(Sd.)(Ext.)2.01gm, Beikh-e-Kasni (*Cichorium intybus*)(Rt.)(Ext.) 4.32gm, Qand-e-Safaid (Sugar) 24.2gm<sup>[12]</sup>.

### Results and Discussion

The clinical evaluation of efficacy of both Unani pharmacopeal drugs in the conservative management of nephrolithiasis (*Hisaat-e-Kulliyah*) with bilateral renal calculi measuring from 2.5 mm to 10.3mm, after one month of treatment was found to be very effective. Patient noticed severe pain during micturition along with the passing of renal stones at 8<sup>th</sup>, 15<sup>th</sup> and 28<sup>th</sup> day of treatment with relief in symptoms at the end of treatment.

Ultrasonography (USG) performed after one month of treatment reveals normal bilateral kidneys without any sign of calculi. Various previous studies show that renal stones up to 5mm can be managed conservatively but this case study shows that more than 10 mm of calculus can be decrystallised and passed out in urine with the help of Unani Medicines without any side-effect. The above action may be attributed to the litholytic, litotriptic, anti-inflammatory and diuretic action of the compound formulation.

Majoon Sang-e-Sarmahi has been described as litholytic (*mufattit-e-hisat*), lithotriptic (*mukhrij-e-hisat*) and diuretic (*mudir-e-baul*)<sup>[13-15]</sup>. Its chief constituent Sang-e-Sarmahi have litholytic (*mufattit-e-hisat*), and lithotriptic (*mukhrij-e-hisat*) actions<sup>[16-18]</sup>. Aloo Balu (*Prunus cerasus*) shown to have anti-inflammatory and antioxidant properties. It is reported that the phenolic compounds from hydroalcoholic extracts of *Prunus cerasus* fruit has a potent cyclooxygenase enzyme-2 inhibitor<sup>[19]</sup>. The oral administration of methanolic extract of *Foeniculum vulgare* fruits shows the inhibitory effects against acute and sub-acute inflammatory conditions and type-IV allergic reactions. This shows that methanolic extract has anti-inflammatory effect and by removing the methanol of fennel seeds it is swollen through cyclooxygenase and lipoxygenase routes<sup>[20]</sup>. Sharbat Buzoori Motadil is useful as a diuretic<sup>[13, 14, 21]</sup>. It is claimed to have an anti-urolithiasis agent. It can prevent the recurrence of stone formation by forming soluble calcium compound with citric acid. It also has alkalizing effect<sup>[22]</sup>. Its chief ingredient Beikh-e-Kasni (*Cichorium intybus* root) possesses anti-inflammatory and nephroprotective activities<sup>[23-24]</sup>. The ameliorative effect of ethanolic extract of *Cichorium intybus* investigated using cisplatin induced nephrotoxicity with no signs of toxicity<sup>[24]</sup>. Tukhm-e-Kheera (*Cucumis sativus*) shown to have anti-urolithiatic activity by hastening the process of dissolving the stones in the kidney. It prevents oxalate induced lipid peroxidation and causes regeneration of renal epithelium<sup>[25]</sup>.

### Conclusion

Clinical evaluation of efficacy of both pharmacopeal drugs; Majoon Sang-e-Sarmahi and Sharbat Buzoori Motadil Sada was found to be very effective and safe in the dissolution and expulsion of even large sized renal calculus. Unani drugs are economical, safer and their rational use can be helpful in avoiding surgical interventions and their complications. More interdisciplinary research is needed between Unani clinical experts, pharmacologists and biochemists to develop standardized Unani formulation for better management of nephrolithiasis.

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