

## UNANI CONCEPT OF THE NEPHROLITHIASIS (*HISAT-UL-KULIYAH*)

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### ABSTRACT

*Hisat-ul-Kuliyah* (Nephrolithiasis) is one of the oldest diseases known to human being & has been documented in ancient Greek literature. Urinary stones have been found in Egyptian mummies dating back as far as 7000 years & the symptoms of the condition were described by Hippocrates who suggested that drinking of muddy river water causes the excretion of sand in urine. Roman physician Galen postulated that factors like diet, climate, heredity, gout, race and some abnormalities cause the stone formation. *Hisat-ul-Kuliyah* has been described by ancient Unani physicians like, *Razi*, *Ibn Sina* have discussed the signs, symptoms & complication of the disease. Nephrolithiasis is a common disease with an increasing incidence and prevalence worldwide. Lifestyle and dietary habit implicated in the complex of the metabolic syndrome are important factors contributing to such developments. So, keeping the fact in mind want to summarized concept of *Hisat-ul-Kuliyah* in the light of classical Unani literature.

**KEYWORDS:** *Hisat-ul-Kuliyah; Nephrolithiasis; Renal Stone; Kidney Stone.*

### INTRODUCTION

Nephrolithiasis is a solid concretion or crystal aggregation formed in the kidney from the dietary minerals in the urine. The disease is also known as renal calculi; it is one of the most common painful disorders of renal disease, which is known by many Unani physicians since ancient times. In 4800 B.C the complexities of renal pathology have been mentioned by Unani physicians. Unani scholars have mentioned the different aspects of disease in their respective works and also may use the differ terminologies for renal stones such as *Hisat-ul-Kuliyah*, *Hisat-e-Masana*, *sang gurda*, *Hisat* or *Ramal-e- Kuliyah-o-Masana* etc.<sup>[1,2,3,4]</sup>

The concept of urinary stone formation has not changed much and has remained the same since the Hippocratic era, and thereafter as well. Since then several known Unani scholars have mentioned the details of causes of *Hisat-ul-Kuliyah* in their respective works, which is proving to be a great treasure for the scholars these days.<sup>[3,5]</sup>

### MATERIAL AND METHODS

Review material collected from the different ancient Unani books, Dissertation, online authentic research

Journals & different websites and summarized with the help of computer.

### LITERATURE REVIEW

The word *Hisat-ul-Kuliyah* is derived from Arabic and literally means Stone in Kidney respectively and thus term *Hisat-ul-Kuliyah* collectively stands for Kidney stones or renal calculi. In Unani system of medicine, Nephrolithiasis is known as *Hisat-ul- Kuliyah*, *Hisat-e-Masana-o-Sang Gurda*, *Hisat* or *Ramal-e-Kuliyah-o-Masana*, *Sang-e-Gurda*, *Al-Hisat-wal-Ramal-Fil-Kuliyah-wal-Masana*, *Reg-e-Gurda* etc.<sup>[3,5]</sup>

### Unani Concept

According to Jalinoos with reference to the book of Hippocrates "*kitab-ul-Ahwiya-wal-buldan*" that cause of renal and bladder stones formation was the narrowing of the neck of kidney & bladder and increased amount of heat above the normal limit, produced by *khilt-e-kham-luzj-ghaleez*, which was conveyed to these organ through urine. This *khilt* is being produced by excessive intake of *aghzia-e-ghaleeza (Qurrah)*.<sup>[1,2,3,4]</sup>

According to Ibn Sina, there are two important matters necessary for stones formation:

- *Ghaleez maddah* (viscous matter)<sup>[1,2,3,4,6,7]</sup>
- Stasis of viscous matter.<sup>[1,2,3,4,6,7]</sup>

**Ghaleez Maddah:** It produced by viscous foods, i.e. (concentrated milk, cheez, fatty meat, big sea fish, every fry & dry meat, rice & milk, every oily food, bone marrow soup, solid raw *falooda*, *Fateeri rooti* (Bread made of incomplete fermented wheat powder), kheer, orange, white & viscous flour, *Laisdar halwa*, unripe & delay digest fruits, Wines), which are dense in character like *ghaleez*, *nabeez* mainly. When exhaustive exercises are taken after the drink etc. Hence, sometimes matter of stones is reem.<sup>[1,2,3,4,6,7]</sup>

**Stasis of viscous matter:** The main causes are atony of kidney or swelling, or *Qarha* (wound).

**According to Zakaria Razi:** every stone in the body whether in Kidney, or Urinary bladder is because of *Mawad-e-Lazeej* and with the altered hot temperament (*Su-e-mizaj haar*).<sup>[1,2,3,4,6,7]</sup>

1. Those foods which produce concentrated urine and *hararat-e-naria* (fire heat) in the urinary bladder.<sup>[1,2,3,4,6,7]</sup>
2. If the heat in the urinary bladder is near to its normal limits but an inflammation in the neck of urinary bladder is present, this condition causes narrowing of the neck of urinary bladder & *Boul-e-Mukaddar* does not get passed through it. Only liquid part of it passes out and suspended material (*Kadoorat*) get crystallized continuously, leading to vesicle stone formation. (*Al-Ahwiya-Wal-Buldun* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
3. A Person, who has excessive body hairs, hot temperament and narrow urinary tracts (*majara-e-boul*) is also prone to urolithiasis (*Al-Ahwiya-wal-Buldun* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
4. The condition in which an alteration in the temperament of children occurs towards *Yaboosat* (dryness) and their bodies are filled with fuzlaat (waste products) leads to development of urinary stones. (*Al Ahwiya-wal-buldun* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup> Those children who take hot milk in large quantities, the heat in their urinary bladder is produced and this heat leads to the formation of stone. (*Al-Ahwiyatul-wal-Buldun* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
5. *Advia-e-harra* (drugs with hot temperament), which are used in the treatment of chronic diseases, act on waste products of kidneys and bladder (*fuzlaat-e-Kuliyah- o-Masana*) leading to crystallization (*Fil-tahraz minal hisat* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
6. *Tukhma* (indigestion) mostly leads to urolithiasis too (*Ibn Sarafiyon* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
7. Weakness and abnormality of physiological functions (*Afaal-e-Tabiya*) in elderly people also leads to urolithiasis (*Al Sania minal sadisa* as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>
8. *Ghilzat-e-boul* (Supersaturation of urine) is the most important and primary cause of urolithiasis, which is

subjected to excessive heat. (*Al Sania minal sadisa*, as reported by *Razi*).<sup>[1,2,3,4,6,7]</sup>

**According to Allama Samarquandi and Saheb-e-Kamil,** the functional cause of any types of calculi at any location is *hararat* (Temperature) and the *maddi* (materialistic) cause is Ghaleez, *Laisdar ratoobat* (thick, viscous fluids), e.g. *Balgham* (phlegm), *Reem* (pus), or *Ghaleez khoon* (viscous blood).<sup>[1,2,3,4,6,7]</sup>

- The humorous fluid absorbs the heat and is transformed into dry & hard matter. After that exposure of heat on that for a prolonged time makes it more dry & hard as like stones, e.g. there is formation of different size of stone in the tub or pot of bath (*Abezemia-Muqala-e-doem, fasal soem*).<sup>[1,2,3,4,6,7]</sup>
- Mostly the stone form when the Ureteric passage becomes narrow. It may be congenital, or any obstruction or inflammation.

According to Jalinoos, wounds of kidney are also responsible for stone formation (*Qarha Kuliyah*). When the pus is not excreted, it gets deposited in the kidney and becomes stone.<sup>[1,2,3,4,6,7]</sup>

Any physiological (*Tabai*) or pathological (*Ghair Tabai*) conditions, which increases viscosity of *Madda* (due to less water content) that passes through the kidney and bladder, becomes concentrated, leading to the formation of “Reg” or “Pathri”. When the concentrated matter is in the form of minute particles it is termed as “Reg” and when it is larger in size, it is termed as “Pathri”.<sup>[3,4,6,7,8]</sup>

There are many basic *Madda* which takes part in formation of *Reg* or *Pathri*. But sometimes, it can be composed of a single *Madda* also. The formation of *Pathri* at first is initiated at a single place and the basic *Maddah* can be a single, *Balgham*, *Khoon*, *Reem*, *Ratoobat-e-Baiza* due to which, at first it is smooth and later by the mixing or addition of different *Maddah* it becomes harder.<sup>[8,9]</sup>

**According to Jalinoos & Ahmadul Hassan jurjani:** The formation of calculi usually occurs, when there is some alteration in the normal chemical changes taking place in the body. Males are more often affected than females. It is predominant in persons of sedentary life style and habits. And those who consume less water, and also due to intake of excess sweets, flesh, tomatoes, milk and few varieties of fish which produces or enhances the formation of calculi. Indigestion, liver disorders, kidney and bladder, hyperparathyroidism etc. are also responsible for the calculi disease.<sup>[3,4,6,7,8,9]</sup> In some regions occurrence of stone formation in human is high, these places are called as “*Baladul Hisat*”.<sup>[3,9]</sup> e.g., Central India, Rajasthan (Rajputana). It is also narrated that calculi diseases are mainly found in those countries, where the people are consuming impure water containing excessive amount of metallic substances<sup>9</sup>. Urinary stone

is never found in old age because digestion and metabolism is very weak in this age.

It is also formed in youngsters due to *Madda-e-Niqras* and indigestion. Its caused due to high intake of red meat in diet, and reduction in the physical activities which is most common cause of type 1 stone.<sup>[3]</sup> The person, who eats mostly vegetables like, carrot, turnips, tomato, Spinach, brinjal etc, is having the more chances of formation of type-3 stone (*Hisat-e-Tutiya*).<sup>[3]</sup>

The common age of stone formation is 3-12 years because in this age humors and matter are in abundance and their urine are sticky. So, heat makes them solid (*Al-fasoolus-Saniya*).<sup>[1,2,3,10,11,12,13,14]</sup> *Hisat-ul-Kuliyah* is commonly found in obese person and *Hisat-e-Masana* is common in lean and thin person (*al maut-ul-saree*) reported by Razi.<sup>[1,2]</sup> The main cause of Nephrolithiasis is *Soo-e-Mizaj haar*, when there is excessive heat (*Aghiyatul Oola*).<sup>[1,2,3,10]</sup> Urinary stone is commonly found in salty urine (*Yahoodi*), as reported by Razi.<sup>[1,10]</sup>

**Akbar Arzani** has described that the raw material (Fluid) is sticky unripe fluid which is changed to stone if viscous and sticky properties are in excess, and if it is not viscous enough then it transforms in to sand and sometimes, rarely, pus and blood give rise to stone. Causative factor for stone and sand is strong desiccating heat which converts sticky fluid into hard matter after a long period. His opinion was that this disease is often inherited.<sup>[15]</sup> By going through the classical Unani literature, it is observed that most of the Unani scholars like *Ibn Sina* etc., have mentioned the etiology of formation of kidney and urinary bladder stones is almost same, and it does not seem to be a much difference of opinion. Some of the details about the etiology are described as under:

According to **Ali Ibn Abbas Majoosi & Hakim Ajmal Khan**, if the less concentrated and adhesive material reaches the kidneys gradually, the excretory power of kidneys will expel it out, leading to precipitation of gravel in the urine. If the incoming material of kidneys is excessively concentrated and adhesive it stagnates there without passing through and will transform into stone after being subjected to strong heat. This stone grows in size by the deposition of the same material on it leading to a larger stone formation.<sup>[16,17]</sup>

The gravel and stone formation in the kidneys occur due to strong heat (*Hararat-e-shadeed*) and concentrated humours (*Khilt-e-Ghaleez*) which is also adhesive. The moisture of the concentrated and adhesive humour dries up by the heat leading to the transformation into a stone, especially in the condition when external urinary path way is narrowed. (*Majoosi*, 1889)<sup>[17]</sup>

**According to Baghdadi:** When the concentrated and adhesive waste products in the kidneys and urinary bladder are exposed to abnormally excessive & strong

heat (*Hararat-e-ghreeba qavia khariji*) they get dried up leading to the formation of gravel of stone. Gravel is produced by less concentrated humour (*Khilt*) which is otherwise usually expelled out of the body naturally. (Baghdadi 363 H.).<sup>[6]</sup>

**According to Mansoori:** The gravel and stone formation in the kidney and urinary bladder is caused by the adhesive humour (*khilt-e-lazij*) when it is exposed to abnormal heat (*Hararat-e-ghreeba*), the liquid of the humour dries up and vanishes leading to stone formation. If the matter is more in quantity and is adhesive, it leads to stone formation, otherwise gravel is produced.<sup>[17]</sup>

**Ibn Sina** in his famous book *Al-Qanoon Fit-Tibb* defines *Hisat-ul-Kuliyah* that, there is a similarity in the cause of urolithiasis in the kidneys and urinary bladder. The stone is formed by same material which is prone to solidification (urolithiasis) after exposure to functional power (*Quwwat-e-failia*). The causative matter is a fluid (*Ratoobat*) which is adhesive & concentrated in nature. It may be phlegm (*Balgham*), pus or blood accumulated at the site of inflammation. (*Shaikh-ur-Rayees*).<sup>[2]</sup>

**Ibrahim** also mentioned in his book that *Kachcha, laisdar Kaimoose* (A raw, concentrated and cohesive material), and narrowing of urinary tract are the main causes of renal stone. (*Ibrahim* 1267- H.).<sup>[5,18]</sup>

Narrowing of neck of urinary bladder and excessive excretory product in the urine lead to urolithiasis in urinary bladder in children. (*Masael Al-Ahwiya-wal-buldan*, as reported by Razi).<sup>[1,10]</sup>

*Rutoobat-e-lazij* (viscous fluid) which transformed in to stones need *qawi hararat* (excessive heat) to vanish the *Rutoobat-e-lateefa* for its solidification. (*Abezemia Al salisa minal Sania*, as reported by Razi).<sup>[1,10]</sup>

With the above-mentioned references and information, it is observed, that there are basically two factors, around which the concept of Urinary stone formation revolves. One is that when excessive amount of *hararat-e-ghareezia*, leads to drying of the *Ajza-e-lateefa* (lighter substances) and results in stone formation, whereas, on the other hand, some classical Unani physicians, have mentioned its cause weakness of *hararat-e-ghareezia* (physiologically normal energy in the body) as in the case of old people. When it gets weakened, thereby leading to coagulation / condensation (*injimad*) of *ajza-e-ghaleeza* (heavier substances) in the already saturated urine.<sup>[1,2,3,10]</sup>

**Sabit Bin Qurrah** says that *sabab-e-faily* is *hararat-e-naria* (fire heat) and when it is present, first granules are formed from which small gravel, like crystals are formed and they unite to form larger stone after becoming bard. (Qurrah1987).<sup>[4]</sup>

**Mazhar (1896)** says that if *madda* is very much cohesive then stone formation occurs and if it is less cohesive then it transforms into gravel. *Mulla Sadiduddin-al-Ghazrooni* (1925): He described that “Stones are produced by viscid and sticky phlegm. Rarely pus or purulent blood may form stones. Heat converts these matters into hard stony materials turbid. Intake of turbid water and weakness of kidney rise to stones formation<sup>5,19</sup>. In “*Dastoorul ilaj*” it is mentioned that if *madda* is more in quantity then stone is formed and if *madda* is less in quantity then gravel is formed.<sup>[10]</sup>

**Hkm. Syed Afzal Ali Khan** incorporated the knowledge in Tibb-e-Unani for the first time and mentioned in his book “*Jama-e-Shifaya-wa- Afadat-e-Kaureniya*” in 1987 that the constituents of urine are water, uric acid sodium, Potassium, Sulphate, Phosphate, Calcium, Magnesium, Ammonia, Ammonium chloride and bile, *saфра* (yellow bile) and *Balgham* are mentioned as pigment bodies (*Ajsam-e-maloon*). The properties of Urinary constituents vary with the variation of seasons, warmth and coldness<sup>5</sup>. Urinary constituents remain suspended and homogenous (*Makhloot -wa-Mamzooj*) in normal physiological ratio. When the formation of these constituents exceeds the normal physiological proportion, they precipitate in the urine either in the kidneys or in the urinary bladder or outside the body. Thus, gravel and stones are formed in the urine (Khan 1887).<sup>[5]</sup>

#### TYPES OF HISAT-UL-KULIYAH

1. ***Hisat-e-Baulia*** (Uric Acid & Urate Stone).<sup>[3,13,14,15]</sup> This type of stone is round, oval with smooth or granulated surfaced. Their colour varies from red to yellowish – brown. On cross –section round partitions are seen. Their size varies from the size of poppy seeds (*khas khas*) to mustard (*Rai*), at times it may be bigger. It occurs in acidic urine.
2. ***Hisat-e-Layyinah*** (Xanthine stone)<sup>[3,13,14,15]</sup> This type of stone is soft and smaller in size.
3. ***Hisat-e-Tutiya*** (Oxalate stone)<sup>[3,13,14,15]</sup> This type of stone is very hard, blackish brown in colour, irregular in shape like *Shehtoot* (Mulberry). At early stage it seems to be brownish, round and shining appearance. Usually found single in number.
4. ***Hisatul Zobaniah*** (Cystine Stone).<sup>[3,13,14,15]</sup> It is so called as *Hisatul Zobaniah* because when it is heated under specific condition it melts like wax, it occurs in alkaline (*Boraqui*) urine. It occurs in the renal pelvis or renal tubules. It becomes larger in size when it reaches in the bladder. And forms crystal which is soft granular and white in color.
5. ***Hisat ul Quimuliyavi*** (Phosphate stone/staghorn Stone).<sup>[3,13,14,15]</sup> These types of stones are white in color, appear as a lump of mud and their surfaces are lustrous and break down easily like mud lump. Its size may vary pea to egg of hen size.

#### USOOL-E-ILAJ

- *Izala-e-sabab* (To treat the cause).

- To use *Musakkin-e-Alam, Muhallil-e-Auram & Mukhaddirat*
- To use *Mufattit-e Hisat* drugs.
- To use *Muddir-e-Baul* drug.
- To use *Mulaiyanat* (Laxative drug).
- Use *Aab-e-nakhud, Aab-e-turb.*
- Use of *Aab-e-Kulthi & Arhar.*
- Use semi solid diet.
- To use *Talyyan-e-taba* (Relaxation)
- To use *Muqawwi-e-Kuliyah* medicine.
- To use *Manna-e-toleed-e-Hisat* (Antilith. drug).
- Use *Dafa-e-Muquaiyyat* (Anti emetic) if vomiting is present.
- Use *Habis wa Quabiz-ud-dam* (Haemostatic med.), if Haematuria is present.
- Use *Daf-e-Humma* (Anti pyretic), If fever is present.
- Preventive measures.

**Restricted diets:** Avoid *saqeel* (Solid) & *Naffakh* (flaylence) food, red meat, fish, *maas ki daal*, Turnip, tomato, black grapes, brinjal.

#### General Management:

- Bed rest
- Drink plenty of water.

#### DISCUSSION AND CONCLUSION

In Unani system of Medicine, the philosophy of the disease and health depends on maintenance of all four humors in their appropriate proportions, qualities and quantities, as inherited from the nature and fulfillment of six essential pre-requisites, controlled by *Quwwat-e-Mudabbir-e-Badan* (Mediatrix nature of the body). According to *Allama Samarqandi* and *Saheb-e-Kamil*, the functional cause of any types of calculi at any location is *hararat* (Temperature) and the *maddi* (materialistic) causes is *Ghaleez, Laisdar ratoobat* (thick, viscous fluids), e.g. *Balgham* (phlegm), *Reem* (pus), or *Ghaleez khoon* (viscous blood).<sup>[1,2,3,4,6,7]</sup>

The term Nephrolithiasis (kidney calculi or stones) refers to the entire clinical picture of the formation and passage of crystal agglomerates (crystals aggregate together to form larger particles) called calculi or stones in the urinary tract (Wolf, 2004). Urolithiasis (urinary calculi or stones) refers to calcifications that form in the urinary system, primarily in the kidney (Nephrolithiasis) or ureter (ureterolithiasis), and may also form in or migrate into the lower urinary system (bladder or urethra) (Bernier, 2005). Urinary tract stone disease has been documented historically as far back as the Egyptian mummies (Wolf, 2004)

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