

Editorial

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Medicine and Nephro-urology in Ancient Iran: Part III: Rhazes and His Recommendations for Nephrolithiasis

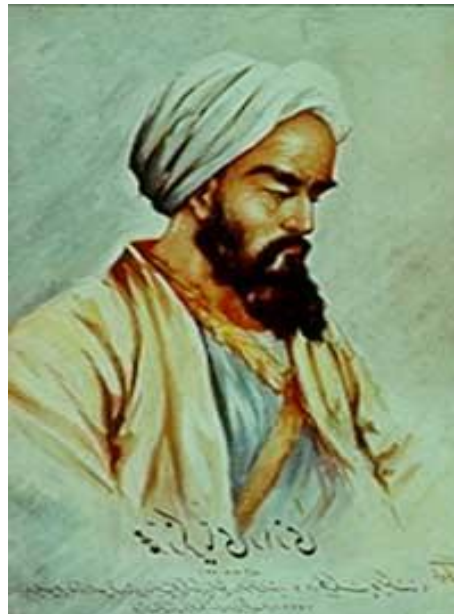
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Abu Bakr Muhammad Ibn Zakariya Razi (Rhazes) was born in Rayy, a town near Tehran, in 865 AD. He was a Persian Muslim polymath. He is credited for the discovery of ethanol and sulfuric acid. Rhazes has been described as the father of pediatrics and he was the first to differentiate smallpox from measles too. He wrote about 224 books on various subjects. His most renowned book is a medical encyclopedia, Al-Hawi fel-Tibb,

known in Europe as *Continens*, which is his personal medical practice, clinical observations and case studies [1,2]. Kidney and Bladder Stones is another Rhazes' book which describes the nephrolithiasis and its management. It seems that his main interest was pathophysiology of the urinary tract, venereal diseases, and nephrolithiasis. He also described neuropathic bladder following vertebral fracture. Urine

analysis, kidney function, and diseases of the kidneys are other aspects of his manuscripts [2]. The aim of this article is to summarize some aspects of Rhazes recommendations for nephrolithiasis.

Etiology of kidney and bladder calculi:

Rhazes believed that the etiologies of stone were concentrated materials, obstruction in the urinary ducts, and natural heat.

Clinical manifestations of kidney and bladder calculi:

According to Rhazes, the pain of the kidney stone resembles the pain of the colon disorders. These two kinds of pain should be differentiated. The pain in the loin, sediment in the urine, bloody or black urine, and pain during urination could be the symptoms. For better differentiation, the site of the pain is important: in abdominal colic, the pain is more generalized and tends to be in the anterior parts of the abdomen while in kidney stones, the pain is more limited and tends to be in the flanks or back [3]. He demonstrated the characters of kidney stone pain in his manuscripts and explained that “when the stone enlarges, it causes intolerable pain, and may lead to mental confusion. The pain is not persistent and each occasion of the pain is called an episode” [4,5].

Diagnosis of kidney and bladder calculi:

He also purposed methods for the diagnosis and treatment of kidney stone for the first time in medical history. His observations were the most important diagnostic methods in diagnosis of nephrolithiasis. Based upon his observations and idea, the symptoms of calculi in distal ureter were simple abdominal pain, tingling pain in the pelvic, and pricking sensation in the urethral area. He pictured kidney calculus signs and listed them as dark urine, deposition of calculus materials in the urine, feelings of heaviness and discomfort in the abdomen, and stretching sensations in this area and feel heaviness in the flanks [2,6].

Treatment of kidney and bladder calculi:

Rhazes recommended that during the episodes of pain, the patient should sit in a tub full of warm water in a solution contains the leaves of cabbage, marsh-mallow, chamomile, dwarf yellow, fenugreek, flaxseed, seed of mingwort and star-

thistle. After using the warm water, the back of the patient should be massaged gently with wallflower oil, and then the patient should climb fast down a ladder, jump on one foot or ride a horse. If the stone lodges in the penis, the patient complains of penile pain. If so, the penis should be sucked or the patient should put the penis in warm water and massage it to expel the stone. After that, use of violet oil and marsh-mallow in the urethra can help pass and extract the stone. If the stone is too large or lodged transversely and cannot be expelled, an incision of the urethra has to be made to extract the stone [4]. He also believed that immersion in khazineh (A big bathtub full of hot water) to augment urinary output alleviated the pain and facilitated the passage of the calculus [2]. The other medicines used for extraction of stone are Jews' Stone (Lapis Judaicus) grinded in clean water, root of cumin, Scholopendriun, seed of Caper, Capillaire, round cypress, root of star-thistle, Caraway, seed of Melon, seed of Cucumber, seed of pentaphyllum, Gum of the plum tree and beetroot concentrate [4,7]. He explained that these drugs were the first line medications for the treatment of renal stone and ground pine, dittany, herb ivy, decoction of black pea, asparagus root, Indian djatrah, crown of the root of agrimony and seed of radish were effective, as well. He believed that these drugs were strong, but care should be taken as it could lead to bladder ulceration [4]. For breaking the stone, he also proposed the radish leave juice, water of soaked chick peas, prunus mahaleb and bitter almonds [2].

Prevention of kidney and bladder calculi:

Rhazes recommendations for the prevention and treatment of renal stones are quite scientific, useful and practical [2]. He believed that highly concentrated foods like fresh fruit, cow and camel meats and everything that is concentrated like fresh cheese and hard-boiled eggs should be avoided in patients with renal stone [8]. He also reported that in these patients, those drugs that dilate the urinary duct like the seed of melon, cucumber, white cucumber, seed of marsh-mallow and seed of sweet squash could be useful [4]. He recommended the use of diuretic vegetables and foods like the cucumber, fig, grapes, melon and crystal clear water from natural sources for the prevention and treatment of kidney stones [8].

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