

ORIGINS OF RENAL DISEASES

On pains of the kidney and the bladder in Kitāb al-Tajārib by Rhazes



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Abstract

Abū Bakr Muḥammad ibn Zakariyyā al-Rāzī (865-925), known in the West as Rhazes, was one of the pioneer figures of the golden age of Islamic science and medicine during the middle ages. *Kitāb al-Ḥāwī fī al-Ṭibb* (*Liber Continens*), *Kitāb al-Ṭibb al-Manṣūrī* (*Liber Medicinalis ad Almansorem*) and *Kitāb al-Judārī wa al-Ḥaṣba* (*Liber de Pestilentia*) are his very well-known works in medicine. One of his books *Kitāb al-Tajārib* (*The Book of Experiences/The Casebook*), was written in Arabic and one of its copies is Ahmed III, Nr. 1975 manuscript in Topkapı Palace Library in Istanbul. A physician, Ali Munshi of Bursa, translated *Kitāb al-Tajārib* into Turkish in the 18th century and Hamidiye, Nr. 1013; Veliyuddin Efendi, Nr. 2487 and

Çorum, Nr. 2909 manuscripts are the copies of its Turkish translation in different libraries in Turkey. Both the book and its Turkish translation contain 31 chapters; 30 of them concerning diseases “from head to heel” and the last one on pharmaceuticals. The 21st chapter, “fī awjā’ al-kulā wa al-mathāna wa al-bāh,” of *Kitāb al-Tajārib* is “on pains of the kidney, and the bladder, and coitus”. Evaluation and presentation of the cases in this chapter regarding the kidney and the bladder are the aims of this report.

Key words: bladder diseases, history of medicine, history of nephrology, kidney diseases, Kitāb al-Tajārib, Rhazes

Introduction

Abū Bakr Muḥammad ibn Zakariyyā al-Rāzī (865-925) (Figure 1 [1]), known in the West as Rhazes, was one of the most important figures of the golden age of Islamic science and medicine during the medieval ages. *Kitāb al-Ḥāwī fī al-Ṭibb* (Figure 2 [2]), *Kitāb al-Ṭibb al-Manṣūrī* and *Kitāb al-Judārī wa al-Ḥaṣba* are his well-known works on medicine, which were translated into Latin respectively under titles of *Liber Continens*, *Liber Medicinalis ad Almansorem* and *Liber de Pestilentia* [3]. He also wrote the first book on pediatrics, *Risāla fī Ṭibb al-Aṭfāl / Practica Puerorum* [4] [5] and a book containing several medical case histories, *Kitāb al-Tajārib* (*The Book of experiences / The Casebook*) [6] [7].

Rhazes’ *Kitāb al-Ḥāwī fī al-Ṭibb / Liber Continens* contains a chapter entitled “Al-juz’ al-‘āshir: fī amrāḍ al-kilā wa al-majarī al-bawl wa ḡayrihumā (The 10th Section: On diseases of the kidney and the urinary tract and others) [8]/ “Liber vigesimus tertius praefati continentis Rasis: de dispositionibus renum et vesice et aliquid veretri (The 23rd chapter of Rhazes’ *Continens*: On diseases of the kidney and the bladder and others)” [9] *Kitāb al-Ṭibb al-Manṣūrī / Liber medicinalis ad Almansorem* contains chapters regarding “fī ‘usr al-bawl / de difficultate mingendi (On difficulty of passing urine), fī al-ḥaṣāṭ / de lapide (On the stone), fī waram al-kilā wa al-mathānā / de nascentiis renum et vesice (On swelling of the kidneys and the bladder), fī ḥarqa al-bawl / de ardore qui fit in mictu (On burning sensation during micturition), fī bawl al-dam wa al-midda / de mictu sanguinis et puris (On urinating blood and pus) and fī salas al-bawl / de his qui non possunt retinere urinam (On incontinence of urine)” in “Al-maqāla al-tāsi’a / Tractatus nonus (The 9th discourse) [10] [11].” Rhazes also wrote a separate discourse “On stone in the kidney and the

bladder” under the title “Maqāla fī al-Ḥaṣā fī al-Kulā wa al-Maṭhāna / Dissertatio de calculis in renibus et vesica [12] [13].” The 21st chapter, “fī awjā’ al-kulā wa al-mathana wa al-bāh,” of *Kitāb al-Tajārib* is “On pains of the kidney and the bladder and coitus [14] [15].” Evaluation and presentation of the cases in this

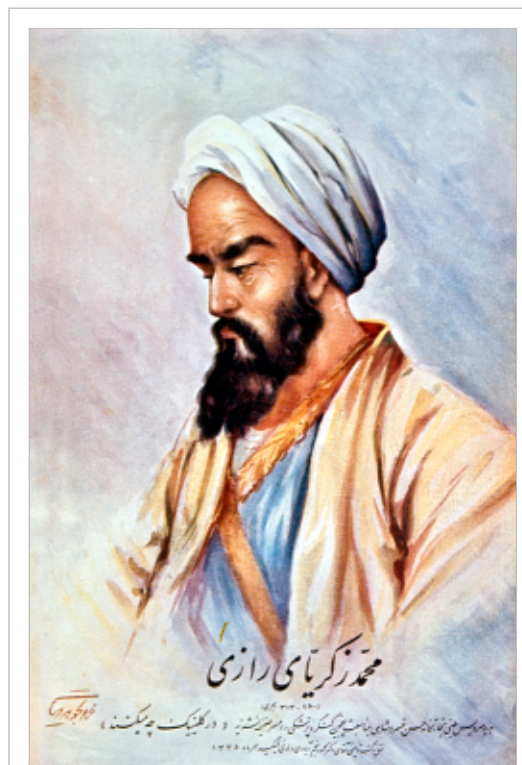


Figure 1.
Abū Bakr Muḥammad ibn Zakariyyā al-Rāzī (865-925).

chapter regarding the kidney and the bladder are the aims of this report.

Material and Method

Kitāb al-Tajārib was collected and arranged by Rhazes' pupils and includes approximately 900 cases [6] [7]. Cases, classified and presented under title of each chapter, contain the gender, age, the complaints of each patient, and Rhazes' diagnosis and suggested treatment. [7] [16]. *Kitāb al-Tajārib* was written in Arabic and one of its copies is *Ahmed III Nr. 1975* manuscript in Topkapı Palace Library in Istanbul (Figure 3) [14]. *Ms. Ahmed III Nr. 1975 of Kitāb al-Tajārib* is 126 folios. It was copied by 'Alī ibn Ayyūb ibn Yūsuf al-Ḳonawī al-Mawlawī and completed in 7 Šafār 656 / 13 February 1258, Wednesday (Figure 4) [7] [14]. A physician by the name of Ali Munshi of Bursa translated *Kitāb al-Tajārib* into Turkish in the 18th century, and *Hamidiye Nr. 1013*, *Veliyuddin Efendi Nr. 2487* and *Çorum Nr. 2909* manuscripts are the copies of its Turkish translation available in different libraries in Turkey [17]. Both the book and its Turkish translation contain 31 chapters; 30 of them concerning diseases *a capite ad calcem* and the last one on pharmaceuticals [6] [7] [14] [15] [16].

Ms. Ahmed III Nr. 1975 of Kitāb al-Tajārib (Figure 5) [14] and its Turkish translation, *Ms. Hamidiye Nr. 1013* [15] were examined for this report. The chapters "On pains of the kidney, the bladder and coitus" in these copies were compared and translated into English. The literature also was reviewed. The numbers of the following reported cases were assigned by the author and were not in the Arabic and Turkish copies.

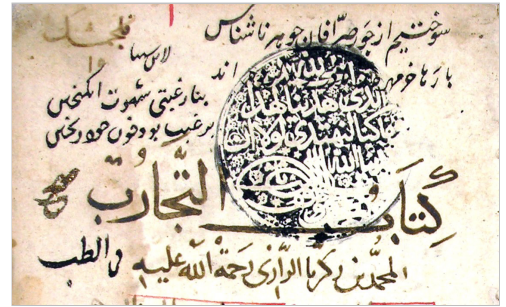


Figure 3. *Kitāb al-Tajārib* lil-Muḥammad ibn Zakariyyā al-Rāzī, rahmat-Allah 'alayh [14, f. 1a].

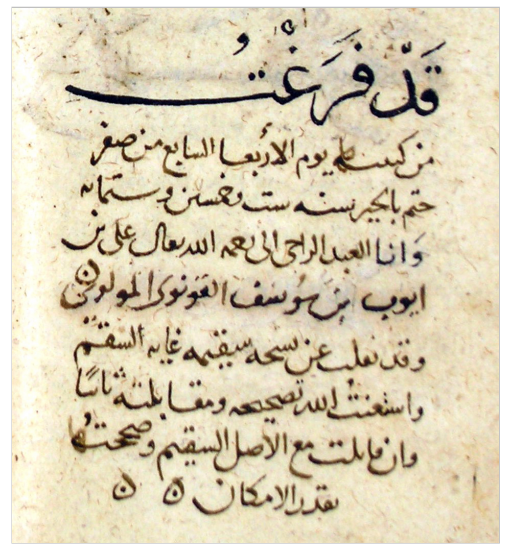


Figure 4. The page enclosing the date of copy and the name of copier of *Ms. Ahmed III, Nr. 1975* [14, f. 125b].

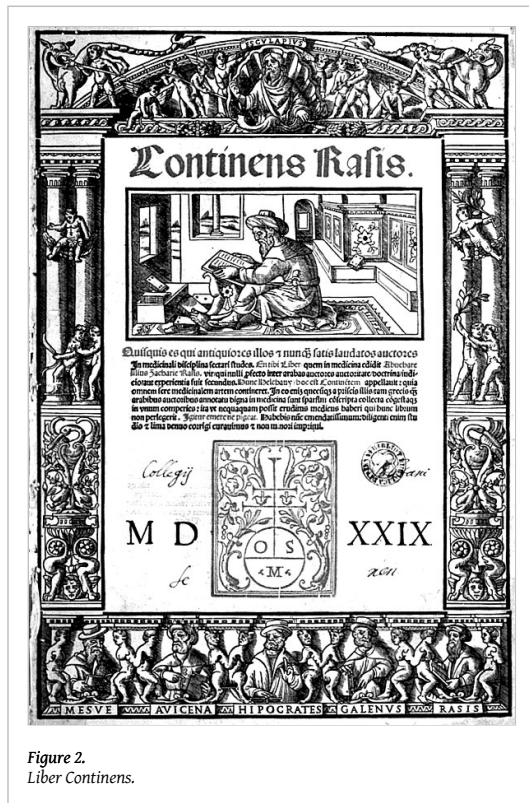


Figure 2. *Liber Continens*.



Figure 5. The beginning pages of *Ms. Ahmed III, Nr. 1975* in Topkapı Palace Library in Istanbul, Turkey [14, f. 1b-2a].

Table 1. Some Arabic terms of symptoms, signs and diagnoses and their translations used in the chapter “On pains of the kidney and the bladder and coitus” of *Kitāb al-Tajārib*

Idrār al-bawl	A making or letting urine flow copiously forth
Ishāl	Purging, diarrhoea
Bāh	Coition
Bard al-mathāna	Coldness of the bladder
Tabawwul al-dam	Urinating blood, <i>hematuria</i>
Taqāṭur bawl	Dripping of urine
Jafāf al-fam	Dryness of the mouth; desert mouth
Ḥabs al-bawl	Retention or suppression of the urine
Ḥarqa	Burning sensation
Ḥarqa al-bawl	Burning sensation in micturition; painful micturition
Ḥarqa fī al-mathāna	Burning sensation in the bladder
Dubayla fī kulā	A small purulent tumor or abscess in kidneys
Dayābīṭīs / Zayābīṭīs	Diabetes
Salas al-bawl	Incontinence of the urine, <i>enuresis</i>
Daʿf	Weakness, feebleness
Daʿf bāh	Weakness of coitus
ʿUsr al-bawl	Difficulty of passing urine, <i>dysuria</i> ; stricture; strangury; suppression of urine, <i>anuria</i>
ʿAtash	Being or becoming thirsty; thirst
Faqd	A missing, not obtaining, lack
Faqd al-bāh	Missing of the coitus
Qarḥa fī mathāna	A sore, a wound in urinary bladder
Midda	Thick, viscous pus, matter
Wajaʿ al-kulā	Pain in the kidneys
Wajaʿ fī ʿāna	Pain in pubes
Wajaʿ fī mathāna	Pain in urinary bladder

Findings

Forty-one cases were presented under the title of “On pains of the kidney, the bladder and coitus [fī awjāʿ al-kulā wa al-mathāna wa al-bāh]” in *Kitāb al-Tajārib* by Rhazes, but the Turkish translation has only 40 cases, missing is Case XXXVII. Of the 41 cases, 34 are male and 7 female [Cases IX, XIV, XX, XXI, XXXI, XXXIV, XXXVIII]. Of the 41 cases, 4 are children (M: 3 [Cases V, XXV, XXXII]; F: 1 [Cases XXXI]); 4 are young male patients [Cases XXII, XV, XVI, XIX]; 1 is a middle-age male patient [Case XXIX]; are 3 are elder male patients [Cases X, XXVI, XXXX]. The rest are adult male or female patients.

The cases are related to the urinary system more than the genital system. The chapter also includes cases of spinal trauma [Case XXI] and diabetes [Cases II, VIII, XI, XXIII], which are not directly related to the urogenital tract. Each case report, usually includes the gender, age, symptoms and signs of the patient, and features of the urine, followed by Rhazes’ diagnosis, treatment and nutritional advice. Simple and compound medicines frequently were used in the treatment of the various diseases.

Symptoms and signs of kidney and bladder diseases were accepted as diagnoses of some cases (Table 1) [14] [15] [18].

[Case I] A man complained of difficulty of passing urine [ʿusr al-bawl] and burning sensation [ḥarqa] when he urinated and a little blood passed from the urethra. And he [Rhazes] ordered him balls of the seeds [banādiq al-buzūr] and to sit in warm water three times a day and to eat all the cold and moist food and *isfīdbāc* [a kind of dish made of meat, onions,

butter, cheese &, or of bread and milk] with fatty fowl [dajaj samīz] or almond oil [duhn lawz] [14, f. 73b; 15, f. 90a].

[Case XIX] A young man complained of frequent urination of blood [tabawwul al-dam] with burning sensation in the penis [ḥarqa fī al-qqāḍīb]. And he [Rhazes] ordered phlebotomy of the saphenous [vein] on the side of the burning sensation and to drink lozenges of the yellow amber [aqrās al-kahribā] and *summāqīyya* [the food cooked with summach] [14, f. 76a; 15, f. 93a].

In some cases a diagnosis was given in addition to the reported symptoms and signs.

[Case II] A man had urinary incontinence [salas al-bawl] and his urine was straw colored and he had extreme thirst [ʿatash shadīd] and the dry mouth [jafāf al-fam]. He [Rhazes] ordered him to be assiduous [in using] barley water [māʿ al-shaʿīr] with a quarter [amount] of it the bitter pomegranate juice [māʿ al-rummān al-murr] and the food *summāqīyya* and he [Rhazes] said: “This is diabetes [dayābīṭīs] [14, f. 73b; 15, f. 90a].”

In some cases, with polyuria, the differential diagnosis of diabetes is considered and a different treatment prescribed.

[Case XXXIV] A woman brought her urine which was white and thin. And he [Rhazes] asked her: “Do you thirst a lot? And she said: “No.” Then he [Rhazes] said: “This is polyuria [idrār al-bawl].” And he ordered a warm ischuretic [māsik al-bawl al-hār] drug and to cook rue [sazāb] with olive-oil [zayt] and to anoint her bladder with it and to foment with warm rags and

to eat dry yellow figs [*tīn aṣfar yābis*] [14, f. 78a; 15, f. 95a].

Cases directly related to kidney diseases are few in number.

[Case XVI] A young man complained of difficulty in passing urine [*ʿusr al-bawl*] for ten years and he felt heaviness when he lied down face downward and was not able to prostrate and sometimes, pus exited from him. And his urine was raw and a little turbid. He [Rhazes] said: “This is the pain in the kidney [*wajāʿ fī al-kulya*] from a wound [*qarḥa*].” Then, he ordered him three drachms of lozenges of the winter cherry [*aqraṣ al-kāknaj*] with boiled wine [*mayfūchtaj*] in the daytime and three drachms of weight of balls of the seeds [*banādiq al-buzūr*] with the rose-water [*julāb*] at the night time [14, f. 75b-76a; 15, f. 92b].

[Case XX] White urine similar to pus [*midda*], he [Rhazes] asked her: “Do you find heaviness in the back [*zahr*]?” She said: “Yes.” Then he [Rhazes] said: “This is an abscess in her kidneys [*dubayla fī kulā*].” He ordered her balls of the seeds [*banādiq al-buzūr*] and a diet of greasy food [*isfīdbājāt*] [a kind of dish made of meat, onions, butter, cheese &, or of bread and milk] [14, f. 76a; 15, f. 93a].

Cases about kidney and the bladder stones are also presented.

[Case XXV] Blackish urine of a boy who complained of difficulty in passing urine presented. And he [Rhazes] said: “This urine is the best evidence of stone in the kidney.” He [Rhazes] claimed that he had found it in some of Rufus’ books, and had himself repeatedly experienced. And he [Rhazes] ordered him balls of the seeds [*banādiq al-buzūr*] [14, f. 76b-77a; 15, f. 93b-94a].

Only one case includes complications and prognosis of the kidney disease.

[Case XXVI] An old man had pain in the kidneys [*wajāʿ al-kulā*] with severe burning in the penis [*iḥtirāq shadīd fī al-qaḍīb*] and redness of the urine, then, dysentery [*zakhūr*] followed this. And he [Rhazes] said: “He will not survive, because the kidney was adhered to the bowel and the bowels were perforated from the heat of the kidney.” And he died after ten days [14, f. 77a; 15, f. 94a].

A probable spinal trauma case was included in this chapter because of urinary incontinence.

[Case XXI] He [Rhazes] reported a woman who fell into a well and her feet / [legs] became flaccid and she did not hold her urine. And he [Rhazes] said: “Does the stool involuntarily come out?” They said: “No.” Then, he [Rhazes] ordered the purgative clyster [*ḥuqna mushila*] and water of the seeds [*māʿ al-buzūr*] with rinds of the cassia [*fulūs al-khiyārshanbar*] and a little almond oil [*duhn lawz*]. Then he [Rhazes] said: “Perhaps there is a swelling.” He ordered ten drachms rinds of the cassia [*fulūs al-khiyārshanbar*] with thirty drachms of the violet syrup [*sharab al-banafsaj*] and to put almond oil [*duhn lawz*] on it and to anoint the painful site with lukewarm oil of the yellow wallflower [*duhn al-khūrī*] [14, f. 76b; 15, f. 93a-b].

Diabetes was accepted as a kidney disease and a probable case of juvenile diabetes was presented without diagnosis.

[Case XXXI] A skinny eight-year-old female child came and he [Rhazes] was told that she slimmed and emaciated without nutrient deficiency and she was frequently thirsty [*aṭash*] and when she slept, her urine flowed until the morning. And he [Rhazes] made her drink barley water [*māʿ al-shaʿīr*] and pomegranate juice [*māʿ al-rummān*] or the sour unripe grape juice and he included other treatments for this illness of the food [*ḥisrimiyya*] [a dish flavored with green grapes] and *summāqiyya* or the beef [14, f. 77a-77b; 15, f. 94b].

Discussion

Case histories in medical literature go back to Greco-Roman era. Álvarez-Millán informs us that the earliest samples of case histories are in seven books of *Epidemics* of the Hippocratic Corpus (5th-4th centuries BC). Twenty-one cases of Rufus of Ephesus (the first century AD) are another sample of case histories. Galen also wrote case histories in his works, such as *On Prognosis*, *On the Affected Parts* and *On the Method of Healing* [19].

Rhazes, who according to Meyerhof, “was a pupil of Galen in medical theory, but a pure Hippocratist in practical observation and therapy” used case histories based on his observations in his monumental work, *al-Ḥāwī fī al-Ṭibb* [20]. Meyerhof [20] published 33 cases from *al-Ḥāwī* -and their Latin translations also were published by Temkin [21]- who evaluated Cases I and XXIV as of “renal abscess, perforating into the renal pelvis” and “acute glomerulonephritis following measles,” respectively. Eknoyan [22] then evaluated same cases as “renal abscess or severe pyelonephritis” and “Schönlein-Henoch purpura” and he also proposed Case XXXIII as “hepatorenal syndrome,” which was considered as “cholangitis (?) infectious icterus” by Meyerhof.

Rhazes’ *Kitāb al-Tajārib* (*The Book of Experiences/The Casebook*), with Álvarez-Millán’s words [7], is “the largest and oldest collection of case histories, so far as is known, within medieval Islamic medical literature contains many cases.” Álvarez-Millán [19] evaluates that “the cases in the *Tajārib* reminds us of those in *Epidemics* II, IV, and V in their sketchy style, their concern with pathology as it manifests in real cases, their link with instruction in therapy rather than in diagnosis and prognosis” and states that “al-Rāzī’s case histories as a whole are Hippocratic in essence.”

The treatments of the cases in the chapter “On pains of the kidney, the bladder and coitus” were based on principles of humoral paradigm and reflect that Rhazes had a good knowledge of the literature of his era. He refers to Rufus when he diagnosed kidney stone in [Case XXV]. Rufus of Ephesus indeed wrote about the diagnosis in the chapter “On kidney stones” in his book, *Diseases of the Kidney and Bladder*: “...In general, black urines determine (diagnose) the disease, other urines also determine the disease, but they are more tenuous than diagnostic... [23]” It is also known that the term “diabetes” was first used by Aretaeus of Cappadocia (the second century AD)

[24] (full text) [25] (full text), and Rhazes used this term as a diagnosis.

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