

## CLINICAL STORIES AND MEDICAL HISTORIES RECORDED BY RHAZES (865-925), THE IRANIAN - ISLAMIC PHYSICIAN IN THE MEDIEVAL PERIOD

### KLINIČKE PRIČE I MEDICINSKE ANAMNEZE KOJE JE ZABILJEŽIO RHAZES (865.-925.), IRANSKO-ISLAMSKI LIJEČNIK SREDNJEGA VIJEKA

Mohammad E Zohalinezhad<sup>1</sup>, Alireza Askari<sup>2</sup> and Mojtaba Farjam<sup>3</sup>

#### SUMMARY

*Recording medical histories of patients is not a new issue in clinical medicine. However, the method practiced by the Iranian chemist physician, Rhazes, in the ninth century A.D is incredible. Rhazes has written several textbooks in clinical medicine, but a particular one, "Clinical Stories and Medical Histories" (Qesas va hekayat al-marazi), is a classical case book describing precise clinical courses of thirty three patients. Each chapter includes a title, the name and demographic data about a patient, his/her history of present illness, past medical and family history, findings of physical exam, impression and interventions by the physician, including pharmacological or surgical management. The reasons for each decision made by Rhazes as well as the outcomes are clearly discussed. This book review will shed light on the unknown medical practice methods in Islamic-Iranian golden era.*

**Key words:** *Clinical stories; Medical histories; Rhazes; medieval period; Traditional Persian Medicine*

<sup>1</sup> Health policy Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

<sup>2</sup> Department of Orthopedics, School of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran

<sup>3</sup> Non-communicable Diseases Research Center, Fasa University of Medical Sciences, Fasa, Iran

*Corresponding Author:* Mojtaba Farjam MD PhD, Non-communicable Diseases Research Center, Fasa University of Medical Sciences, Fasa, Iran.

Electronic address: Farjam.md@gmail.com, or mfarjam@fums.ac.ir

## INTRODUCTION



Abu Bakr Mohammad Ibn Zakariya  
al-Razi (Rhazes) (854 CE – 925 CE)

'*Clinical Stories and Medical Histories*' is the title of a concise clinical case book written by *Rhazes* (865-925 A.D) in the golden era of Islamic-Iranian civilization. The author is a pioneering chemist who discovered alcohol as well as a great physician with several text books in clinical medicine [1,2]. His full name is *Abubakr Muhammad Ibn Zakariyā Rāzī* and his innovations in clinical medicine has been appreciated worldwide [3,4]. He is well known because of his scientific writing in evidence-based medicine, precise case records and clinical reports [5]. He has authored 184 books on different subjects of his contemporary scientific era and he has been also acknowledged as a great scientific writer. *Rhazes* is among the Iranian polymath elites who did not only served his society in critical turning points of history [6], but also contributed to development of science by medical recording. These high-quality recordings of patients' histories are the result of his precise observation during clinical courses of patients. He is meticulous and honest: "I do not write what I do not discover through my own practical experience" [7]. The medical text books written by *Rhazes* include *Ketab-al-Mansouri* and *Ketab-al-Havi*. In addition to these detailed text books, *Rhazes* has also written many booklets. The book that we are introducing here is a classical case book, extracted from *Al-Havi* that has been written by *Rhazes* in order to describe his real patient's history. In this book, *Rhazes* recorded patient's history that he visited then described the clinical condition and explained how he has diagnosed and treated every single one of them.

This compact book was written around 900 A.D and it discusses 34 cases visited by *Rhazes*. However, one case has been excluded due to incomplete description of the case. The original language of this book is Arabic. An English translation of this book was published in 1935 by Saint Catherine Press. The translated book was entitled "Thirty-three Clinical Observations

by Rhazes” 900 A.D [8]. Thus, we choose to translate this book’s title to “*Clinical Stories and Medical Histories*” since, the actual title in Arabic is” *Qesas va hekayat al-marazi*”

The current review on this book is a historical research, trying to shed light on the unknown dark angles of medical practice methods at the golden era of the Islamic-Iranian civilisation.

The authors have studied and reviewed the chapters regarding the methods that Rhazes had used in presenting each case, taking history, physical examination, laboratory work up and finally therapeutic interventions including procedures and pharmacotherapy.

### THE METHOD OF CASE PRESENTATION

There are 33 complete chapters in the book and each chapter describes different diseases. Rhazes had chosen a title for each, mostly based on the clinical impression however, there are some exceptions. For example, ‘case one: Renal abscess opened in renal pelvises. In some chapters the title includes name, job and the diagnosis of the case: ‘Case two, Malek, the accountant (bilious bloody diarrhea). Some titles include additional information for instance; the author gives the name of the patient as well as his clinical impression: ‘Case three, Ibn Amrooyeh, otitis media resulting in meningitis’. The titles are represented in table 1.

Table 1 - The list of cases in the book (8)

Chapters/ Cases	Title
1	Renal abscess, perforating into the renal pelvis
2	The Story of Malek, the accountant (A bilious bloody Dysentery)
3	The Story of Ibn Amrawaihh (otitis followed by meningitis)
4	Aortic Regurgitation
5	Genital Herpes
6	Hypertrophy of Prostate (or a Calculus?) causing Paradox Stilicidium, Cystitis and Inflammation in the Pelvis
7	Incomplete
8	An ophthalmia or acute, purulent Conjunctivitis
9	An Appendicitis?

Chapters/ Cases	Title
10	Abnormally concentrated urine after fever
11	A case of Smallpox
12	Obesity and Gout
13	Semitertian fever
14	A Lacrymal fistula
15	A Mastitis
16	Septic arthritis after an abscess in the liver ?
17	Eclampsia?
18	Epilepsy
19	Epilepsy?
20	Hematemesis, varices of the oesophagus in Hepatic Cirrhosis
21	Hemoptysis
22	Alopecia
23	Hydrorrhea tubalis intermittens
24	Acute glomerulonephritis following measles
25	A Cholecystitis?
26	An Abortion or sub mucosal Myoma
27	Phthisis
28	Vasomotor collapse in pleurisy
29	Hay fever followed by Rheumatic polyarthritis
30	Sciatica or Lumbago
31	Sciatica or Lumbago?
32	Sciatica?
33	Cholangitis (?) ; Infectious Icterus
34	Hemiplegia? Incomplete observation

### THE HISTORY OF PRESENT ILLNESS AND THE CLINICAL COURSE OF THE DISEASE

Rhazes talks about the present illness of each case, the name of patient, estimated age as well as relevant demographic details are written. As an example, in case twelve, the patient was described based on the shape of his body: "The case of obesity concerning the son of Hussein Ibn Abdawaih was proposed to be because of..." The chief complaints are clearly mentioned and the concurrent signs and symptoms are described. For example in case one the patient's chief complaint had been mentioned: "the patient suffered from

mixed fevers with 6 days interval, then 4 days and then attacks of alternate days and sometimes everyday...before each episode of fever, the patient had a slight chills, he also complained of urination frequency". In case thirteen he mentions: "the patient was suspected of being attacked by the worst form of semitertian fever". [9]. He briefly defines the type of fever in this case, "sem-tertian fever". Rhazes continues with description of the acuteness of the fever: "The acuteness of the fever was great then became chronic when other physicians administered ..." Hence, he describes the course of the disease and mentions the effect of treatment on this course.

Rhazes also talks about the past medical conditions and indicates the presumed risk factors. In case twenty, the patient presents with bloody vomit. Rhazes notes that the patient is a case of heavy drinker. He believes the case is a case of hepatic cirrhosis. In some cases Rhazes pays attention to the family history. In case one he writes: 'I was unaware that his father suffered from weakness of the bladder...' and continues: 'So we should be careful not to neglect these issues and we should consider these principals with special concern'.

There are trends to record drug histories in each case as well.

## PHYSICAL EXAM

Rhazes examined patients after taking medical histories. In the case reports, he briefly describes the findings of physical examination. For instance, in case four, the physician records the physical findings of a patient complaining from palpitation of the heart within the chest. Rhazes noted what he had found in the examination: "I put my hand underneath his left nipple and felt sever pulsation on his aorta, so violent, as I had never observed before". Then he continues by examination of his left upper extremity: 'the pulsation of the brachial artery was so violent that it was visible' [10]. In case nineteen, he talks about a case with chief complaint of seizure disorder. He records his signs: 'His jugular veins were full and his face was puffy and red.' We assume that the patient had been a case of hypertensive encephalopathy.

In case nine, he gives the history of a case of appendicitis. The patient has fever and malaise and had developed pain in the abdominal section, near the flank. Rhazes palpates the location of pain and describes it 'hot' and 'hard'. He writes: "I asked him whether he felt throbbing on it when I palpated, the patient answered 'a lot', and I guessed he had an inflammatory swelling".

In another case, Rhazes describes the odor of the mouth (case twenty eight). He uses his smelling sense to examine the patient and predicts the prognosis: “The saliva was malodorous and his condition was poor, like what had been mentioned in acute diseases books. And I predicted that he would not survive more than one day”.

## URINE TESTS AS PARACLINICAL EXAMINATIONS

In many cases, Rhazes talks about testing urine. He considers the color, the consistency and the impurity of the urine samples of different cases [11]. In case one, he writes: “the patient passed a little pus in his urine and the fever was subsided”. He also considers the volume of the urine in this case: ‘polyuria (and/ or frequency) was the reason driving me towards the impression of renal abscesses. In case ten, he talks about a febrile patient who had experienced the urine discoloration after his fever had subsided. In case six he reports that the urine of a post-catheterization incontinent patient contains a whitish crude mixture. He thought that the mixture was originated from the upper parts of the kidney.

These examples show that the physician used urine tests to make diagnoses on patients when indicated.

## PROCEDURES AND INTERVENTIONS

Rhazes practiced interventions when indicated. In case six, he reports a case that had urinary retention and foley catheter was used for him. He records the result of this procedure: ‘the patient developed urinary incontinence from then on’.

In many cases he talks about his phlebotomies like cases Nine, Twelve, Nineteen and Twenty. Rhazes also mentions the exact volume of blood taken from each patient. He prohibits phlebotomy when he finds any contraindications. For instance, in case twenty eight, he prevents the patient from being bled as he finds the arterial pulses too weak.

However, there are a few descriptions of surgical interventions in this book. A gynecological transvaginal operation is noted in case twenty six. In this case, a woman presents with a lower abdominal pain. Rhazes finds the location of the pain to be on her uterus. The patient gives the history of protrusion of a tissue resembling placenta from her anterior parts. Rhazes orders the midwife to examine the interior of the vagina and touch to ascertain the

consistency of the protruded tissue. The midwife finds it soft, flabby and non-tender in vaginal examination. Then Rhazes writes: "I ordered the midwife to bind the patient's legs for two days and cut off the insensible tissue..."

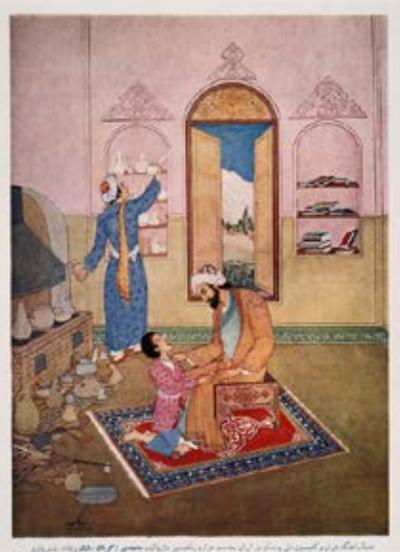
## PHARMACOTHERAPY

From the medieval period, more than one hundred drug dosage forms have been mentioned in pharmaceutical references [12]. Iranian physicians used various dosage forms through different routes of administration [13].

Rhazes prescribes different medications for his patients based on his observations. In some cases, the rationale for drug therapy is mentioned briefly. Rhazes is a pioneering physician, who explains the pharmacological logics of drug therapy based on his concurrent understanding of the pathophysiology of diseases. This issue is commonly believed to be a quite modern approach in rational prescription, but Rhazes describes why he has used the drugs whenever he can. In case one diagnosed with renal abscess, Rhazes administers diuretics to facilitate and accelerate the passage of puss. In case two, he explains the reason of prescribing laxatives in a patient with dysentery: 'The physician should administer laxatives and enema with liquid glazes in this kind of malignant dysenteries'. Emetics are prescribed for some cases. In case thirty, he prescribes emetics and orders them to be used on full stomach. In case three, Rhazes believes that the patient has not been cured because emesis has not been induced and the previous physicians missed the case.

Enema is used by Rhazes for some cases. In case two, enema with liquid glazes is recommended.

Enema and emesis are two types of therapy which were used widely for cleaning up of human body [14].



Rhazes, a physician, examines a kneeling boy who has his mouth wide open, they are in a surgery full of equipment. Colour process print after H. Behzad. By: Hossein Behzad  
Published: Wellcome Library,  
London

Rout of drug administration is recorded for each drug. Many cases are reported to receive oral medications, while for many others, topical and rectal drugs are prescribed. In case thirty, for example, mustard is topically applied on the skin of the hip for a case of sciatica. Direct administration of drugs to the eyes is reported in case eight: "I irrigated his eyes from discharges and applied white powder into the eyes".

## DISCUSSION AND CONCLUSIVE REMARKS

The process of case recording and presentation can be found widely in the concise case book of Rhazes, '*Clinical Stories and Medical Histories*'. The book is an ancient clinical hand book which can clarify many mysteries about the methods of clinical practice in Iranian- Islamic civilization. Rhazes has recorded details of patients' clinical observations and diagnostic and therapeutic interventions. Rhazes wrote as a pioneering family practitioner as well as a medical teacher. The book elucidates the successes and limitations of traditional practice of medicine, when the modern science had not yet been born. Although the authors of current research do not aim to mislead the readers and avoid exaggeration about the modernity of clinical practice of Rhazes, thus, the book shows that in traditional Persian medicine, some modern approaches in case recording and presentation was practiced by Rhazes in many centuries ago. Of course there are epistemological gaps between clinical practices in the traditional medicine and the medicine practiced in modern times.

The method Rhazes used in case presentation is an advanced completed method of some pioneering physicians when contrasted with historiographical resources in biomedical studies [15]. Rhazes, however, added valuable recordings as discussed before [16]. One prominent characteristic of his work is issued in logical designing of records based on the pathophysiological targeting of disease for interventions. Another outstanding difference is his educational purposes in his style of case presentation [16]. He also used these cases to teach medical students. So he is actually a medical writer and a teacher during his time. To provide a more precise image of Rhazes and his methods, further studies should concentrate on the social, ideological, cultural and political contexts of Rhazes's time in Iran.

### *Acknowledgment:*

*The authors would like to thank the RCC department of Shiraz University of Medical Sciences in assisting us with editing this article. This article was edited by Mr. H. Argasi a professional linguist From Carleton University, Canada.*

## REFERENCES

1. Whitehead E, Bush R. Abu Bakr Muhammad ibn Zakariya al-Razi (Rhazes) (850?-923?). *Invest Urolo* 1967;5(2):213-7.
2. Nikaein F, Zargaran A, Mehdizadeh A. Rhazes' concepts and manuscripts on nutrition in treatment and health care. *Anc sci life* 2012;31(4):160-3. doi: 10.4103/0257-7941.107357.
3. Zarrintan S, Najjarian F, Tahmasebzadeh S, Aslanabadi S, Zarrintan MH. Abu Bakr Muhammad ibn Zakariya Razi (AD 865-925) and early description of clinical trials. *Int J cardiol* 2014;174(3): 758-9. doi: 10.1016/j.ijcard.2014.04.083.
4. Compier AH. Rhazes in the Renaissance of Andreas Vesalius. *Med hist* 2012;56(01):3-25. doi: 10.1017/S0025727300000259.
5. Zarrintan S, Aslanabadi S, Rikhtegar R. Early contributions of Abu Bakr Muhammad ibn Zakariya Razi (865-925) to evidence-based medicine. *Int J cardiol* 2013;168(1):604. doi: 10.1017/S0025727300000259.
6. Nadim M, Farjam M. Qutbal-Din Shirāzi (1236–1311), Persian polymath physician in the medieval period. *J med biogr* 2014;22(2): doi: 10.1177/0967772013518165
7. Shoja MM, Tubbs RS. The history of anatomy in Persia. *J anat* 2007;210(4):359-78. 8.8888. 8. Meyerhof M. Thirty-three clinical observations by Rhazes (circa 900 AD). *Isis* 1935;23(2):321-72.
9. Jarcho S. A history of semitertian fever. *Bul Hist Med* 1987;61(3):411.
10. Dalfardi B, Mahmoudi Nezhad GS, Ghanizadeh A. Rhazes' description of a case with aortic regurgitation. *Int J cardiol* 2014;172(1):147-8. doi: 10.1016/j.ijcard.2013.12.096.
11. Shamsi M, Haghverdi F, Changizi AS. A Brief Review of Rhazes, Avicenna, and Jorjani's Views on Diagnosis of Diseases Through Urine Examination. *Iranian J kidney dis* 2014;8(4):278-85.
12. Ramezany F, Ardakani MRS. Ali ibn Hosein Ansari (1330–1404): a Persian pharmacist and his pharmacopoeia, *Ekhtiyarat i Badi i*. *J med biograph* 2011;19(2):80-3.
13. Zarshenas MM, Zargaran A, Müller J, Mohagheghzadeh A. Nasal Drug Delivery in Traditional Persian Medicine. *Jundishapur J Nat Pharm Prod* 2013;8(3):144.
14. Borins M. Traditional Medicine in India. *Canad Fam Physic* 1987;33:1061.
15. Alvarez Millan C. Graeco-Roman case histories and their influence on Medieval Islamic clinical accounts. *Soc hist med* 1999;12(1):19-43.
16. Alvarez Millan C. The case history in medieval Islamic medical literature: *Tajarib and Mujarrabat* as source. *Med hist* 2010;54(2):195-214.

## SAŽETAK

*Bilježanje medicinske anamneze pacijenata nije novo pitanje kliničke medicine. Kako bilo, metoda koju je prakticirao Rhazes, iranski kemičar i liječnik, u devetom stoljeću zadivljujuća je. Rhazes je napisao nekoliko udžbenika iz kliničke medicine, ali ona kratka, Kliničke priče i medicinske anamneze, klasična je knjiga prikaza slučajeva koja opisuje točan klinički tijek kod trideset i tri pacijenta. Svako poglavlje uključuje naslov, ime i demografske podatke o pacijentu, njenu/njegovu povijest trenutne bolesti, prošlu medicinsku i obiteljsku povijest bolesti, nalaze fizikalnog pregleda, utiske i intervencije liječnika, uključujući farmakološke i/ili kirurške postupke. Razlozi su svake Rhazesove odluke kao i rezultati jasno raspravljani. Čitanje zabilješki u ovoj knjizi pomaže osvijetliti nepoznate kutke koji se tiču metoda medicinskih praksi u vrijeme rađanja islamskoiranske civilizacije.*

**Ključne riječi:** kliničke priče; medicinske anamneze; Rhazes; srednovjekovlje; Iran