

## ORIGINAL ARTICLE

### Cancer Terminologies Used in the Medieval Texts to the Early Modern Iranian Traditional Medicine (ITM)

#### Abstract

A Large number of people are affected by cancer and the primeval history of this malady has attracted attention toward complementary and alternative therapies to manage this disease. The present study has performed a survey on cancer in the Iranian Traditional Medicine during the Islamic era (ITM) by focusing on cancer terminologies and related diseases over a millennium, from medieval to the early modern era. Seven ITM medical texts, in Arabic and Persian languages, from 7th to 18th century AD were evaluated. These medical literatures have been our the sources of ITM cancer recognition clues. These clues have been related to some cancer and cancer-like diseases. The terminologies could be helpful for future ethnopharmacologic assay about cancer in ITM.

**Key words:** Avicenna, Cancer, Historical texts, Iranian plateau, Iranian Traditional Medicine, Tumor

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## Introduction

Despite enormous technology development in recent years, a large number of people are diagnosed with cancer and consequently so many deaths are reported. The statistics released by the American Cancer Society and the International Union against Cancer show approximately 27 million diagnoses and 17 million deaths by 2030 worldwide.<sup>1</sup> Determining the exact time for treatment of illnesses like cancer is too difficult because the herbal and other preparations have already been used for treatment of such maladies since antiquity.<sup>2</sup>

Understanding the knowledge about particular diseases in the past and through history might be possible. Regarding that it is necessary to look for immutable facts in every clue and then attempt to explain them based on the current knowledge. The clues could be collected from several sources including fossils, skeletons, preserved cadavers and written information<sup>3</sup> and it is well noted that this kind of study is an interdisciplinary study.<sup>4</sup>

The Medical literatures were created under the influence of civilizations formed in different nations such as Greeks', Egyptians', Indians'<sup>5</sup>, Chinese's<sup>6</sup> and Persians'<sup>7</sup>. On the way toward studying the history of medicine, it is revealed that an important part is a strong tradition of medicine that is called Islamic Medicine also known as Arabic, Medieval Islamic and Greco-Arab Medicine. This medical tradition refers to science development founded during the flourishing period of the Medieval-Islamic Empire that lasted for about 9 centuries from the middle of the 7th to the end of the 15th century. Although the geopolitical feature of the empire had changed during this 9 centuries and beyond, the land of the initial emperorship mainly, was divided into at least three distinct empires: Iranian, Turkish and Indian.<sup>8</sup> In brief, the effect of Arabic language among the Arabs was the cause of influence of this language not only as the language of religion but also as the official language of all the emperorship especially during Umayyads and also as a scientific language during Abbasids. So, in all of the expanded territory from the western provinces -Spain and Maghreb- to the eastern provinces -Iranian borders of China and India- all scholars wrote and read mostly in Arabic although they were not Arabs or even Muslims.<sup>9</sup> Some of these non-Arab scholars had also created some manuscripts in their original ethnicity. For example, Avicenna wrote some important manuscripts in Persian like "Danish namah-yi' Alai".<sup>10</sup> So, it is acceptable that some of

- 1- Aggarwal *et al.*, 2009:1083-1094.
- 3- Deeley, 1983: 597-608.
- 4- De Vos, 2010: 28-47.
- 5- Aggarwal *et al.*, 2009: 1083-1094.
- 6- Shu, 2010: 85-103.
- 7- Sahebkar *et al.*, 2012: 4-23.
- 8- Saad and said, 2012.
- 9- Bennison, 2010: 158-202.
- 10- Reisman, 2003:163-174.



the important references of our study should have been written in Arabic language.<sup>11</sup> Besides, because of the strong role of Iranians in building the Islamic empire, their language was known as the next important language of the Islamic Tradition.<sup>12</sup> Beginning the 7th century AD, Iranian medical practitioners by merging different Middle Eastern medical systems with their own experiences started taking the integral and indispensable part to form what we call the ITM.<sup>13</sup>

### Materials and Methods

We studied some of the most influential medical literatures of ITM to understand how the practitioners diagnosed and managed the disorders like cancer and related diseases. The importance and influence of these literatures in ITM came from the reputation of the scientists, who created those literatures and also the solidity and acceptance of transferred and practiced information through 7th to 18th centuries AD. To determine a list of such manuscripts, we used Brockelmann's *Geschichte des Arabischen literature*. This book and its comprehensive supplements described literatures that were created in Arabic language and include all authors up to 1937 and were published periodically from 1943 to 1949.<sup>14</sup> The next reference was the Persian translation of the book *Geschichte des Arabischen Schrifttums*.<sup>15</sup> In the third volume, the compiler made a collection of the scientists' information in the fields of medicine, pharmaceuticals, zoology and veterinary. This volume had two main parts. First, Fuat Sezgin (the author) surveyed the Greek, Syrian, Iranian and Indian scholars that had a strong influence on the basis of Medieval Islamic Medicine -as well as ITM- and their works was translated into Arabic. ITM medieval scientists gave reference to these manuscripts several times. The second part, Sezgin described the Medieval Islamic scholars' manuscripts. This collection of information was about those literature creators who were alive up to 1050 AD and their manuscripts were written in Arabic.

For Persian literature, the book series "Persian literature, a bio-bibliographical survey" written by Charles Ambrose Storey was used. This book had different parts describing various scientific divisions whereas the ITM literature data were gathered in the second volume part b.<sup>16</sup> The next reference was the "Annotated bibliography of Persian works" which covered different areas, but volume 5 of this book was about medicine, pharmaceuticals, natural sciences and chem-

- 11- Bennison, 2010:158-202.
- 12- Lapidus, 2002: 183-193.
- 13- Bayan et al, 2013.
- 14- Brockelmann, 1943-1949: 1943-1949.
- 15- Sezgin, 1970.
- 16- Storey, 1927.





istry manuscripts.<sup>17</sup> Performing the study, we decided to use seven medical literatures from ITM manuscripts (table 1) according to the following parameters:

- A continuous time line during all these centuries as far as possible. We tried to choose notable literatures in every important historical period.

The geographical living zone of the practitioners. We tried to choose literatures from the geographical territory called Iranian plateau. This region is a geological formation in Western and Central Asia which is the part of the Eurasian Plate, located between the Zagros mountains to the west, the Caspian Sea and the Kopet Dag to the north, the Hormuz Strait and Persian gulf to the south and the Indus River to the east in Pakistan.<sup>18</sup> This geographic region was more or less accommodated with the historical region, Khurassan which is a vast geographic region from near the south east of the Caspian Sea to the Great Pamir and Hindu Kush mountain barriers. To the south Khurassan supposedly extend to India. At the same time the term historical Khurassan contains Rayy (present Tehran). People of Khurassan have strong common historical, cultural and linguistic roots.<sup>19</sup>

Naturally, the information which was transferred in these literatures was differently classified according to writers' desire. For data collection, we looked over the headings of the chapter and phrases which had noted the Arabic word ORAM /ɔ:ɾɑ:m/ the plural form of VARAM /væɾæm/ which means "swelling" in the present Persian language and tumor in ITM. This word was our heading main key word in the present study. We chose this key word because former studies about cancer in ITM showed that it could be a good idea to look for different kinds of ORAM as a related term to cancer, specially solid tumors.<sup>20</sup> On the other hand, the phonography of our headings about cancer and related disease names in the ITM (table 2) could help future studies to avoid misunderstanding. This would be applicable about a short and practical definition about maladies.

## Results

In all seven literatures studied (table 1) the ITM scholars, more or less, explained the same etiology for cancer: the unnatural humor, the burned black bile. Most of them clearly expressed that this malignancy was hard to cure or incurable. Nonetheless, all of them had introduced different therapeutic approaches: pharmacotherapy, surgery, and cauterization.

17- Monzavi, 2003.

18- Dictionary, 2014.

19- Daniel, 1979.

20- Motevalizade *et al.*, 2012: 3-18.





Table 1: Selected Medical literatures of ITM in this study

Author <sup>a</sup>	Original Title	Title in English	Place produced	Text used in this study	Original Language	Author Ethnicity
Ali bin Raban Tabari (ca <sup>b</sup> 775- ca 864 A.D.)	<i>Firdaws al-Hekmah fi al-Tibb</i>	<i>The Paradise of Science on medicine</i>	Iranian Plateau	(Tabari, 2002)	Arabic	Persian
(Rhazes), AbūBakr Muhammad ibn Zakariyā <sup>c</sup> al-Razi (d <sup>c</sup> . ca. 925 A.D.)	<i>Kitāb al-Hawī fi al-Tibb</i>	<i>The Comprehensive Book on Medicine or The Continens</i>	Iranian Plateau	(Rhazes, 1962)	Arabic	Persian
Abū Bakr Rabi ibn Ahmad al-akhavaini al-bukhari (d. 985 A.D.)	<i>Hidayat al-motalemin fi al-Tibb</i>	<i>Guidelines for medical students</i>	Iranian Plateau	(Akhaweyni, 1966)	Persian	Persian
(Avicenna), Abū 'Alī al-Husayn ibn 'AbdAllāh ibn Sīnā (d 1037 A.D.)	<i>Kitāb al-Qānūn fi al-Tibb</i>	<i>The Canon on Medicine</i>	Iranian Plateau	(Avicenna, 1593)	Arabic	Persian
Ismā'īl ibn Muhammad al-Jusayn al-Jurjāni (d. ca. 1136 A.D.)	<i>Zakhirah-i Khwārazm Shāh</i>	<i>The Treasure of Khwārazm Shāh</i>	Iranian Plateau	(Jorjani, 1977)	Persian	Persian
Burhān al-Dīn Naṭṣi bn 'Iwād al-Kirmāni (d. 1449 A.D.)	<i>Sharh al-Asbāb wa-al-'alāmāt</i>	<i>Commentary on the Causes and Symptoms<sup>a</sup></i>	Iranian Plateau	(Ibn 'Iwād, 2007)	Arabic	Persian
Muhammad Husayn ibn Muhammad Hādī <sup>b</sup> 'Alavī Shīrāzi (d. ca. 1749)	<i>Kinulasat al-Hekmah</i>	<i>Abstract of Medicine</i>	India	(Alavī, 2007)	Persian	Persian

<sup>a</sup> The authors' names, title of the books and the title in English have been obtained from National Library of Medicine, 2013 except for Ali bin Raban Tabari which was from Segin, 1970 and Abū Bakr Rabi ibn Ahmad al-akhavaini al-bukhari and the book name "Kinulasat al-Hekmah"<sup>b</sup>. Circa. <sup>c</sup> Dead.

Some even emphasized a change in lifestyle and also supportive methods because they believed that tumors should not be manipulated; otherwise they would spread, leading to the progression of the lesion. Among all of the studied literatures, the most proper and apparent classification belonged to Avicenna's *The Canon on Medicine*.

In the next step, we defined some ITM terminologies which could be related to cancer (table 2). These terminologies were included according to the signs, symptoms and sometimes the definition of disease that could have a relationship to cancer and related states. These conditions could occur before or during malignancies. Table 2 exhibits a section of the terms which were nearly related to the formation of cancer. These aspects of disease were focused, because:

- There was an old idea that some kinds of cancers could cause lesions and these might be infected or even superinfected.<sup>21</sup>
- Nowadays many kinds of cancerous conditions might be formed due to infectious diseases. For example, papillomavirus is a known cause of cancer.<sup>22</sup>
- Because of the ITM classification of cancerous conditions, mostly under the tumor like situations, we focused on dense tumors for ITM survey.

## Discussion

In this study, we have introduced some reliable references of ITM. We have also attempted to find some disorders in these references which could be related cancerous ones. In addition, we have highlighted the strong tradition of medical sciences in the territory "Iranian Plateau" which lasted for about one thousand years. This Medical Tradition could be identified as Iranian Traditional Medicine.

Except for the text *Khulasat al-Hekmah* which was created in India, the other six ITM references were written in historical Khurassan. The book, *Khulasat al-Hekmah*, can be classified under ITM literature since although Indian subcontinent had never been a part of Islamic or Persian Empire it had a strong effect on the Islamic and especially the Persian cultural heritage and vice versa. This could be because of common cultural and historical roots, people migration, especially scholars and Persian speaking Mughal empires of India.<sup>23</sup> The other point about this literature (*Khulasat al-Hekmah*) was the ethnicity of the author "Muhammad Husayn Ibn Muhammad Hādī". His lineal descent went to peo-

21- Brand, 1908: 80-85.

22- Van Doorslaer and Burk, 2010: 41-62.

23- Faruqi, 2012.







Table 2: Extracted medical keywords

ITM terms <sup>a</sup> (In Arabic)	Phonography of ITM terms by IPA <sup>b</sup>	ITM terms English translation <sup>c</sup>	ITM term definition <sup>d</sup>
Ghorrooh-e-Akele	/gʊruːheːkele/	Cankers	Cancers might cause invasive hard to cure ulcers with disgusting appearance and thick red or green borders inclined to the extrem of the lesion. The lesion caused decay.
Ghorrooh-e-Khabise	/gʊruːheːxəbise/	Horrid ulcers	It was a kind of ulcer that was formed because of waste villainous humors of the body. These humors could cause ulcers that would not or hardly be cured and might lead to death.
Ghrooh-e-mozmene	/gʊruːhemɔzme/	Chronic ulcers	Cancers might cause ulcers. Occasionally, they would be cured or changed into chronic black ugly ulcers and dispersed.
Khanazir	/xənuːzɪr/	Pigs, Scrofula	It was a kind of tumor, stucked to the neighboring tissues. It might grow and might new ones be formed from the first one, just like warts. It mostly occurred around the neck and armpit. It was called Pigs because of the resemblance of the patient's neck to a pig's neck. It had an amplitude from benign to malignant tumors.
Nasour	/nɑːsuːr/	Fistula	It was an old sore with thick borders. The progression into the tissue was like a pipe and had a permanent discharge.
Oran-e-sodavi	/ɔːrɑːmesɔːdɑːviː/	Black bile tumors	They were constructed from black bile but showed no other signs of cancer except for hardness and dark appearance.
Varam-e-sard	/vəːremesərd/	Cold tumor	It was a tumor, constructed from black bile or phlegm. Normally, it was non-invasive and benign. It had a slow growing rate. It was non-sensitive and had cool touch.
Varam-e-solb	/vəːremesɔːlb/	Hard, dense or solid tumor	They were made from phlegm, black bile or the combination of both and were classified from benign to malignant tumors.

<sup>a</sup> The key words are ITM terms that were transferred to English and managed in alphabetic order in this table. <sup>b</sup> International Phonetic Alphabet. <sup>c</sup> We tried to find the closest alternative in English language. <sup>d</sup> The definitions are summarized descriptions, extracted from selected historical manuscripts of ITM, from ITM literatures (mentioned in the table 1).

ple from an important Persian city “Shiraz” used to belong to historical Khurassan.<sup>24</sup>

In the present study, understanding the knowledge about cancer through historical ITM literatures has been based on the Islamic Traditional Medical heritage which has hired the Galenic humoral theory.<sup>25</sup> ITM etiologic data of the lesions and the description and pattern of them have helped us to construct table 2. Similarities between narrations in various literatures and step by step progression in the procedure of diagnosis, treatment approaches and prognosis, Have also helped us understand the disease. It can be concluded that cancer as a malignancy, as well as its management, has a longtime story. The ITM also has had its own approach similar to Greek medicine. For example, Hippocrates (460-375 BC) used the terms Carcinoma as a tumor, Carcinoma as a malignant tumor and Cancer as a non-healing malignant ulcer and to Galen (ca. 130-200 AD) Tumor meant all swellings, even obesity.<sup>26</sup> This finding basis, besides rational sub-classifications, detailed descriptions, disease transformation observations and differential diagnosis made by ITM scholars, is of crucial importance for demonstrating what traditionally was called cancer.

The data gathered in the present study would be helpful to perform further ones about more detailed aspects of cancer history in the ITM and practical ethnopharmacological assays.

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### References

- Aggarwal BB, Danda D, Gupta S, Gehlot P. Models for prevention and treatment of cancer: Problems vs promises. *Biochemical Pharmacology*. 2009; 78: 1083-1094.
- Akhaweyni RA. *Hidayat-al-Muta'allimin fi al-Tibb*. Matini J, Editor, 1st ed. Mashhad: Ferdowsi University press; 1966. [In Persian]
- Alavi (Ibn Muhammad Hādī 'Alavī Shīrāzi) MH. *Khulasat Al-Hekmah*. Nazem I, Editor. Qom: Ismailian Publications; 2007. [In Persian]
- Avicenna (Ibn Sina) H. *Kitab al Qanoun fi Al Tibb* (The Continens). Rome: Medical Press. 1593: The fourth book: 84-110. [A facsimile n Arabic]

24- Zargarani, 2012: 103-104.

25- Campbell, 2011: 5-19.

26- Ibid.





- Baguley BC. *A Brief history of cancer chemotherapy*. In: Anticancer drug development. San Diego, California: Academic Press; 2002: 1-9.
- Bayan L, Modarres SM, Gorgi A. History of Neurological Disorders in Persian Medicine. *Research on history of Medicine*. 2013; 2(4).
- Bennison AK. *The Great Caliphs, the golden age of Abbasid Empire*. London: Yale University Press; 2010: 158-202.
- Brand AT. Some remarks on the infectivity of Cancer. *The Lancet*. 1908 January, 11th: 80-85.
- Brockelmann C. *Geschichte der arabischen Litteratur*. Leiden: Brill; 1943-1949.
- Campbell K. *Infectious causes of cancer, a guide for nurses and health-care professionals*. West Sussex, UK: Wiley & Sons; 2011: 5-19.
- Daniel EL. *The political and social history of Khurassan under Abbasid rule 747-820 AD*. Minneapolis and Chicago: Bibliotheca Islamica; 1979.
- De Vos P. European materiamedica in historical texts: Longevity of a tradition and implications for future use. *Journal of Ethnopharmacology*. 2010; 132, 28-47.
- Deeley TJ. A Brief History of Cancer. *Clinical Radiology*. 1983; (34) 597-608.
- Faruqui MD. *The Princes of the Mughal Empire, 1504–1719*. Cambridge: Cambridge University press; 2012.
- Ibn 'Iwād N. *Sharh al-Asbāb wa al-'alāmāt*. Qom: Jalal al-din Publication; 2007. [In Arabic]
- Jorjani SI. *Zakhireh Khaarazmshahi*. Edited by: Saeedi Sirjani AA. Tehran: The Iranian Culture Foundation; 1977. [In Persian]
- Lapidus IM. *A History of Islamic Societies* (2nd ed). Cambridge: Cambridge University Press; 2002: 183-193.
- Monzavi A. *Annotated bibliography of Persian works* Vol. 5. Tehran: The Center of Great Islamic Encyclopedia, Library Publication series; 2003. [In Persian]
- Motevalizadeh Ardakani A. et al. Medical treatment of cancer in Traditional Iranian Medicine references. *Journal of islamic and Irranian Traditional Medicine*. 2012; 3(7): 3-18. [In Persian]
- National Library of medicine. <http://www.nlm.nih.gov/hmd/arabic/get-started.html>. Accessed in: 26/10/2013.
- Reisman DC. (Editor) with the assistance of: Al-Rahim AH. Before and after Avicenna, proceeding of the first conference of the Avicenna study group. Leiden and Boston: Brill; 2003: 163–174.
- Rhazes (Razi) MZ. *Al-Hawi fi al-Tibb* (The Continens). Abdul Muid Khan, (Editor). Bureau, Osmania: Oriental Publications: 1962: Book. 12. [In Arabic]
- Saad B, Said O. *Greco-Arab and Islamic Herbal medicine*. Hoboken, New Jersey: John Wiley & Sons: 2011.
- Sahebkar A, Tayarani-Najran N, Tayarani-Najran Z, Emami SA. *Cancer and Its treatment in main ancient books of Islamic Iranian Traditional medicine*. In: Alternative Medicine. 1st Edition. Croatia: In Tech; 2012: 4-23.
- Sesgin F. *Geschichte des Arabischen Schrifttums*. Translated by: Fehres-



tegan Institute. Tehran: Ministry of Islamic Culture and Guidance publication and printing organization; 1970.

Shu JH. *Esophageal cancer*. In: *Alternative and Complementary Therapies for cancer*. New York: Elsevier; 2010: 85-103.

Storey CA. *Persian literature: a bio-bibliographical survey*. London: Luzac & Co: 1927.

Tabari AR. [*Firdausu'l hekmat*]. Beirut: Dar al Kotob al-elmiah; 2002. [In Arabic]

Van Doorslae K, Burk RD. *Evolution of Human Papillomavirus Carcinogenicity*. In: *Advances in virus research*. 1st edition. Oxford: Academic Press: 2010: 41-62.

Dictionary. <http://dictionary.reference.com/browse/iranian+plateau>. Accessed in 5/1/2014.

Zargar A. The City of Shiraz and Fars Province, the Root of Medical Sciences in the History. *Research on History of Medicine*. 2012; 1(4).

