

# Concept of Abdaal e-Advia (Therapeutic Interchange) in the Light of “Maqala Fi- Abdal Al- Adwiya Al- Maustamala Fi -Al -Tib Wa Al- Ilaj” Known as “Kitab Al- Abdal”

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## ABSTRACT

**Background and Objectives:** Unani Medicine is mainly based on the drugs collected from plant sources. These drugs are time-tested, but their availability has become a challenge. Rapid industrialization and overpopulation have resulted in mindless exploitation and destruction of these drugs, and as a result, many species have become endangered. Therefore, conservation of such species is imperative. However, despite all the strategies, the purpose is yet to be achieved successfully. It is the need of hour to find the therapeutic interchanges of our precious herbal wealth. “Abu Bakr Mohammad Bin- Zakariyya al-Razi” (Rhazes) (865-925 AD), in his book “Maqala Fi Abdal al-Adwiya al-Mustamala Fi al-Tibb wa al-Ilaj” known as “Kitab al Abdal” has formulated principles and regulation which form the basis of therapeutic interchanges and help in finding new therapeutic interchanges. He wrote an exclusive monograph, the first and most groundbreaking work on therapeutic interchange in Unani medicine. This analysis investigates the major ideas and tenets of Rhazes' Abdaal-e-Advia. The unique therapeutic interchanges mentioned in “Kitab al-Abdal” have been rigorously analyzed in this review in light of Unani core principles. **Methodology:** 122 main drugs described by Razi and their 223 therapeutic interchanges mentioned in *Kitab al Abdal* were analyzed, and parameters for analysis were set from Razi's theoretical considerations. Therapeutic interchanges were categorized accordingly, augmenting the reason for therapeutic interchange. **Results:** A drug is changed during practice when a particular drug claimed for a particular action is unavailable for various reasons. Despite all the efforts, the required drug is not available, as it is costly, banned, or difficult to procure. It is evident that none of the therapeutic interchanges is a therapeutic interchange for all actions. Therefore, while substituting a drug, there must be a strong basis. Unani scholars have discussed these bases, which are based on the similarity of action in the main and therapeutic interchanged drug, similarity in *mizaj* (temperament) of the main and substituting drug, and similarity in physical properties of the primary and therapeutic interchanged drugs. After retrospection, it is apparent that it is mainly the action of drugs that was considered a basis for therapeutic interchange of drugs. **Conclusion:** Razi has laid a strong foundation for drug interchange in routine practice, and detailed guidelines may be formulated for such therapeutic interchange.

**Keywords:** Abdaal-e-Advia, Therapeutic Interchange, Kitab Al Abdal, Rhazes.

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## INTRODUCTION

The problem of non-availability, confused identity, and drug adulteration exists in Unani medicine system. This is because it has to deal with hundreds of herbs and drugs of mineral as well as animal origin.<sup>1</sup> Certain drugs are native to certain countries even if they grow in other countries; the best species is still found in a particular region of the world. Under these circumstances, certain drugs of prime therapeutic value and choice may not be available to

the physician, thus hampering the process of successful treatment. Consequently, the need to search for therapeutic interchanges has arisen. Ancient Unani scholars have also given the concept of the therapeutic interchange of drugs since antiquity, and even classical Unani literature has amply talked about therapeutic interchange of almost all single drugs. Though in many books written on *Ilmul Advia* (Unani Pharmacology), the concept has been specified, many of them have given therapeutic interchange of single drugs only, leaving the rules aside.<sup>2-4</sup> However, some have mentioned the principles and regulations also, but they are scarce.<sup>5-7</sup> One such skilled medical professional who understood the significance of this subject was Razi, also referred to as Rhazes in the West. Razi is the first Unani scholar who has given this idea significant consideration, applied his thinking, established some



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guidelines, and developed a technique to implement therapeutic interchanges. “*Maqala Fi Abdal al-Adwiya al-Mustamala Fi al-Tibb wa al-Ilaj*” was one of his most remarkable contributions, usually referred to as “*Kitab al-Abdal*”. This is earliest surviving text on the specific therapeutic substitution of single drugs in Unani medicine.<sup>1</sup>

## METHODOLOGY

*Kitab al Abdal*- the book that details the therapeutic interchange of drugs, was explored in detail regarding the information it contains. It was explored for the systematic study of the principles underlying therapeutic interchange, and various observations were noted that were specific to the book. Additionally, all the parameters considered for “*Kitab al-Abdal*” have been classified, along with 223 therapeutic interchanges of the 122 primary drugs.

## OBSERVATIONS

*Razi, a biographic note:* “Abu Bakr Mohammad Bin Zakariyya -Razi” (Rhazes), a great physician, was born in the city of Ray (Iran) in 240 Hijri (864-925 AD). According to Ibn-e-Abi Usaiba, he had great interest in Philosophy and literature right from a young age and used to compose verses, and was very much fond of music. He was a keen observer, experimenter, and excellent author. He took particular interest in Philosophy, Astrology, Metaphysics, Physics, and Mythology and wrote many books on these disciplines (Table 1).<sup>1,8</sup>

According to Uyoon Al Anba, he visited dawakhana Azdi, Baghdad, and learned how the first drug, “*Hay ul Alam*” evolved, which made him curious about medicine, and he started studying medicine after 30 years of his age.<sup>8</sup> His academic status is credited to the study of Greek scholars and his attachment to the contemporaries like Abu Zaid Balkhi and Ali Ibn Rabban Tabri.<sup>9,10</sup> He also studied Galen thoroughly. He was a man of outstanding personality in context of his comprehensive study, keen observations, therapeutics, and writings. On one hand, he made use of Greek and Syrian knowledge, whereas, on the other, he studied Indian medicine and was greatly impressed by Sushrut.<sup>9-11</sup> Medicine in his time was in poor shape, and only sixteen books of Galen were available, with some interpretations of Galen by Alexandrian writers and few books by contemporaries.<sup>1</sup> He examined, selected, and compiled scattered information systematically. The following phrase, which eventually became a proverb, depicts the picture well. “Medicine was dead Galen gave life to it. It was scattered Rhazes streamlined; it was incomplete -Avicenna completed it.”<sup>1</sup>

He spent some years of his life as CMO in a great hospital in Baghdad. He was the one to differentiate between smallpox and measles. He also gave the idea of selecting the most appropriate location for the hospital by hanging pieces of meat on likely sites and then selecting the one with the least purification.<sup>9-12</sup> Later he resigned and started his own practice in his native place. He had

developed Conjunctivitis in adolescence, which caused him total blindness until he died in 320 Hijri.<sup>9,12</sup> Various interesting case studies exist in different books, like Uyoon al Atiba and History of Medicine (Louis Magner).<sup>9</sup>

Exact number of books written by Razi has yet to be discovered. Each scholar has different opinions about the no of books he authored. Razi is termed “indefatigable” by Louis Magner because he wrote 200 books.<sup>9</sup> According to Uyoon Al Anba, there is a list of 220 books with names that were authored by him.<sup>8</sup> List of books mentioned in *Kitab al Abdaal* (Table 2) by various authors are) Ibn e Nadeem- 167, Jamaluddin Qifti -137, Ibn e Abi Usaiba -244, Abu Rehan-184, Molana Abdus Salam Nadwi -29.<sup>1</sup>

## *Kitab Al Abdal*

“*Kitab al-Abdal*,” also known as “*Maqala Fi Abdal Al-Adwiya Al-Mustamala Fi Al-Tibb wa al-Ilaj*,” is a significant contribution of Razi which is essential from a pharmacotherapeutic point of view. This book is in Arabic language and is just 15 pages. “Central Council for Research in Unani Medicine”, under its literary research program first time in 1980, published the edited Arabic text of this book along with translation and explanatory notes.<sup>1</sup> It was felt that such a rare book should be translated into English so that majority of scholars across the globe may be benefitted. Several Manuscripts of this book exist in India. Four manuscripts were under study while editing and translating this book retrieved from the Rampur Raza Library, Asiatic society Kolkata, Khuda Baksh Oriental Library, Patna, and a private collection at Aligarh.<sup>13</sup> It has also been translated into Persian and is available in the library of Aastan e Qudus Rizvi. This manuscript is preserved in Aya Sophia, Majlis Shura e Milli, Iran, and Library of Aqa Muhammad Ali Tarbiat.<sup>1</sup>

## *Basic principles underlying therapeutic interchange*

It is a fact that ancient physicians did not think the subject of therapeutic drug interchanges worthwhile for scientific learning, which is evident from classical books because none of them have chapters on such a vital aspect of therapeutic interchanges.<sup>14</sup> Also, no writer discussed the related problems because scarcity of drugs was rare. Razi was foresighted and described the importance of the subject as follows: “the way I have studied this vital part of medicine, it deserves a separate book on this topic which would help physicians because all drugs are not available at all places.

So, if the physician is unaware of therapeutic interchanges which are used in place of primary drug, the objectivity, and benefaction of medical profession would cease.<sup>1</sup> The credit goes to Zakariya Razi for compiling all the information and bringing it to one book and also for framing the principles. He was more qualified to write this book because he was the person who remained attached to hospital for a certain period and served as a general practitioner for the rest of his life. The fundamental principles, uses, dosages, and other details of the various therapeutic interchanges for 122

single drugs are covered in this book in a systematic and succinct manner. Some of the drugs covered in this book were indigenous to the author's home country of Iran.

Rhazes, while working on this book, consulted the Greek and Arabic writings of his predecessors like Jame-Irmas, Jame Bolus, and Galen's translation by Hunain bin Ishaque. Razi quotes, “By this time, I had finished writing this book. I did not come across any such book in which a technical and scientific approach was resorted to except Hunain bin Ishaque's work. I also observed that in therapeutic interchange of drugs methodology, Hunains understanding and logic is far better than his predecessors”. The author has also referred to the books like Jamè Ibn-i-Masawaih, Mayamir li Jalinoos, Adwiya Mufrada li Jalinoos, Tadbir al-Asiha, Jame' Irmas, Jame' Hunain and Jame' Bolus. The author has quoted physicians Ibn Masawaih, Bolus, Bodighorus, Galen, Qunitus, Dioscorides, Masarjoya Hunain bin Ishaque and Irmas in the book.<sup>1</sup>

This original book has also been cited in other works as a significant treatise. The importance of this book could be guessed from the fact that famous botanist Ziauddin Ibn-e-Baitar in his book “Jame' li Mufradat,” has described 27 drugs therapeutic interchanges (Table 3) with reference to *Kitab al-Abdal*:<sup>1,2</sup>

There are excerpts of *Kitab-al-Abdal* in *Minhaj-ud-Dukan*. Ibn-e-Nasar A Attar Israili, in his famous book *Minhaj-ud-Dukan*, acknowledges the contribution of Rhazes, saying, “The drugs whose therapeutic interchanges are mentioned in *Minhaj-ud-Dukan* have been taken from *Kitab al-Abdaal* and some other books.<sup>15</sup> The edited book contains annotations wherein Arabic name, Persian name, Urdu and Hindi name, English name, Botanical name, and pharmacological description (Mizaj, Actions) of main and therapeutic interchange drugs (A,b,c) are mentioned (Table 4).

### Parameters of Therapeutic interchange of drugs Considered

Therapeutic interchanges of 122 drugs have been mentioned, and many main drugs have more than one therapeutic interchange. Fifty-six drugs have one therapeutic interchange; thirty-nine drugs have two therapeutic interchanges; nineteen drugs have three therapeutic interchanges; eight drugs have four therapeutic interchanges. Razi was cautious while allocating therapeutic interchanges; he had considered various aspects while discussing therapeutic interchanges. Some essential parameters which were contemplated by Rhazes are:

**Weight:** Therapeutic interchanges weight is mentioned in relation to main drug (Table 5). Out of 122 drugs, therapeutic interchanges of 78 drugs have been mentioned in what desired weight they can be taken as therapeutic interchanges. e.g., *Shahm e Hanzal* is therapeutic interchange of *Habb al Neel* in half weight.

**Action:** Razi has discussed therapeutic interchanges for many actions. A drug is a therapeutic interchange for another in which action is mentioned only in 40 drugs, (Table 6) while for other main drugs, actions are not specified. eg, *Shahtra* is therapeutic interchange for *Badward* in chronic fevers, and *Abresham* is therapeutic interchange for *Badranjboya* as an exhilarant and cardiac tonic.

**Arabic name Used:** Author has mentioned drugs in Arabic names. eg *Sheeh Armani*, *Labn ul Luqah*, *Hazar Jashan*, *Kamazariyoos* etc.

**Therapeutic interchanges of different origins:** Therapeutic Interchanges of different origin drugs are mentioned. Plant-origin drugs being a therapeutic interchange of animal/ mineral origin drug and vice versa (Table 7).

**Mizaj (Temperament):** In majority of the drugs, the *mizaj* is the same as the main and therapeutic interchange, but in two cases, there is majority slight variation in *mizaj*. (Table 8 ) E.g., *Roghan e Kewra*, which is cold and moist, is therapeutic interchange of *Roghan Al Balsan*, which is hot and dry.

**Badrqa:** The author has also mentioned the *badrqa* (adjuvants) to be taken with therapeutic interchanges *Irsa-Mazariyoon* 1/3 of its weight with three ounces of Camels milk for inducing watery purgation. Similarly, *Tukhm e Badiyan*, half its weight with 1/3 of sweet almonds, is therapeutic interchange of *Afzar*.

**Compound drug therapeutic interchange:** Therapeutic interchanges of compound drugs (Table 9) have also been mentioned, like *Dawa al Qust-Dawa al Kumkum and Dawa al luk*. Also, therapeutic interchange of single drugs is compound drugs like *Dohn e Yasmeen* is the therapeutic interchange of *Labani (Mea e Saila)*. Also some oils therapeutic interchanges have also been described. e.g., therapeutic interchange *Roghan-e-Hina* is *Roghan-e-Marzanjosh* and therapeutic interchange for *Roghan-e-Gul* is *Roghan-e-Banafsha*.

**Table 1: Biography of Abu Bakr Mohammad Bin Zakariya Razi.**<sup>1,9-12</sup>

Born	Ray (Iran) in 240 Hijri (864-925 AD)
Main Interest	Philosophy, Literature, Medicine, Music.
Special Interest	Astrology, Metaphysics, Physics, Mythology.
Contemporaries	Abu Zaid Balkhi and Ali Bin Rabban Tabri.
Discipline of	Ali Bin Rabban tabri and Galen.
Profession	CMO in Baghdad, a Prominent physician.
Exquisite qualities	Generous, messiah of poor, gentle with patients, large-hearted, and a great lover of arts.
Outstanding personality	Keen observer, experimenter, and an excellent author.

**Table 2: List of books mentioned in *Kitab al Abdaal*.<sup>1</sup>**

Sl#	Books Title	Sl#	Books Title
1	Kitab al hawi fi't-Tib	16	Kitab al-Kafi fi't-Tib
2	Al-Mansoori	17	Kitab al-Mudkhal fi't-Tib
3	Kalam -fil- Furuq Bain al-Amraaz	18	Kitab al – Qulanj
4	Kitab at'imatul Maraza	19	Kitab al-Tafhim wal Tashjir
5	Kitab Auja'il Mafasil	20	Kitab al-Tib al-Muluki
6	Kitab Bar-us-sa'ah	21	Maqala fi Abdal al-Adwiya al-Mustamala fit-Tib wal Ilaj
7	Kitab fil-Fasd	22	Maqala fi Annahu lima za yahussun naim minal bardi ma la yahussuhu yaqzan
8	Kitab fi annal Hummayat al Mufratata tazurru bil Abdan	23	Maqala fi Illat allati min ajaliha yarzuzukam fi fasli al-Rabi
9	Kitab fil-Bah	24	Maqala fi Sabab fi qatli rihis samoom li aksaril haiwan
10	Kitaban fit Tajarib	25	Maqala fi Sikanjabin
11	Kitab Ila Man La Yahzuruhu al-Tabib	26	Maqala fi Zukam wal Nazla
12	Kitab Manafiul Aghzia Wa Daf-e-Muzarriah	27	Murshid (al-Fusul fit-Tib)
13	Kitab al-Fakhir fi't-Tib	28	Qarabadin Saghir
14	Kitab al-Hisa fil Kuliya Masana	29	Taqdimul Fakiha fit-Taam wa takhiroha minho
15	Kitab al-Judri wal Hasba		

**Table 3: List of Therapeutic interchanges Taken from *Kitab al-Abdal* in Jame' li Mufradat.**

Ushna	Asaroon	Irsa	Beladar	Badashqan
Jaosheer	Jauzutteb	Jadwar	Hamama	Habb al-Ban
Zaranbad	Zafran	Tafsia	Zarnab	Shaqaqul
Daroonaj	Tambol	Dibaq	Difla	Persaiwashan
Reward	Badranjboya	Khulanjan	Darchini	Zirwand Taweel

**Table 4: Details of 122 main drugs and 223 therapeutic interchange drugs mentioned in Annotations.**

Main drug	Therapeutic interchange - a, b, c
Arabic name	Arabic name
Persian name	Persian name
Urdu and Hindi Name	Urdu and Hindi Name
English Name	English Name
Botanical Name	Botanical Name
Description-Mizaj, Actions	Description-Mizaj, Actions

**Citations in the book:** Reference has been mentioned clearly in the book's text against the therapeutic interchanges taken from other sources. According to *ibn Masawih*, therapeutic interchanges of nine drugs are taken; according to Galen, therapeutic interchanges of seven drugs are taken. According to *Badighorus, Bolus, and Discoridues*, one is taken.

**Antidote:** Antidotes are mentioned as Therapeutic interchanges. *Jadwar* as antidote, *Zaranbad* weighing three times, *Zait –Zubd (butter)* as antidote to toxic drugs.

**Potency:** The potency of some therapeutic interchanges has been mentioned:

Galen says in “*Tadbir Al-Asiha*” “use *Salikha* of good quality in place of *Darsini* in *Ayarij Fiqra*, which is closer to *Darsini* in potency. Nevertheless, good *Darsini* is always better than good *salikha*, but I do it out of necessity when *Darsini* is unavailable”.

**Dohn Al-Khirwa (castor oil):** Galen says that potency of *Dohn al-fuji* is equal to that of *Dohn-ul-khirwa*, but *Roghan Bed Anjeer* (Castor oil) is much similar to old olive oil. Hence it should be preferred as a therapeutic interchange to castor oil.

**Dohn Al-Qurtum:** This oil is same as *Anjarah* oil except that *Roghan-e-Anjarah* is weaker.

**Table 5: List of Therapeutic interchanges of Different Pharmacological Weight.**

Weight	Annotation No.	Main drug		Therapeutic interchange	
		Name	Weight	Name	Weight
Equal weight	002	Afsanteen	1	Asaroon	1
	008	Abhal	1	Salikha	1
	017	Bahman	1	Tudari	1
	020	Badranjboya	1	Abresham	1
	021	Persiawashan	1	Banafsha	1
Half Weight	002	Afsanteen	1	Halela Zara	0.5
	060	Habb al Neel	1	Shahm e Hanzal	0.5
	075	Mur	1	Filfil Siyah	0.5
	104	Qust	1	Aqar qarha	0.5
	119	Khayarshambar	1	Turanjabeen	0.5
One and Half Weight	016	Bisfaj	1	Aftmoon	1.5
	025	Jauz ut teeb	1	Sumbul	1.5
	026	Jityaana	1	Asaaroon	1.5
	084	Sumbul	1	Izhar	1.5
	109	Rewand	1	Gul e surkh	1.5
One third Weight	122	Ghariqoon	1	Aftmoon	1/3
	005	Asaroon	1	Waj, Hamama	1/3
	048	Waj	1	Rewand	1/3
	011	Irsa	1	Mazariyoon	1/3
Two third Weight	013	Aftmoon	1	Saad	2/3
	100	Fifilmoya	1	Suranjaan	2/3
	107	Qasab	1	Kasni	2/3
	112	Shahtraj	1	Haleela Zard	2/3
	117	Kharbaq	1	Ghariqoon	2/3
One fourth Weight	015	Baladur	1	Dohn ebalsan	1/4
	059	Tukhm e bed injeer	1	Lauzu mur	1/4
	069	Kamafitous	1	Salikha	1/4
	080	Nar mushk	1	Zanjabeel	1/4
	104	Qust	1	Aqar qarha	1/4
One sixth Weight	015	Baladur	1	White neft	1/6
	080	Narmushk	1	Sumbul	1/6
One tenth Weight	012	Afzar	1	Asl al Baladur	1/10
	058	Habb ul ban	1	Bisbaasa	1/10
	122	Ghariqoon	1	Khirbaq	1/10
Double Weight	072	Lulu	1	Sadaf	2
	103	Sibr	1	Huzaz	2
Three Times Weight	119	Khayarshambar	1	Lahm us zabeeb	3
	064	Yatuat	1	Irsa	3
	027	Jadwaar	1	Zaranbaad	3
Five Times Weight	015	Baladur	1	Bunduq	5
	091	Ood balsan	1	Qushoor e Salikha	5

**Zarnab:** Used with *kababa*, its potency is equal to that of *salikha*, and it is a good therapeutic interchange for *darchini Maserjoya* says its potency is equal to *Jauz tib*, lighter than *zarnab*.

**Hamama:** Its potency is the same as *Waj*. *Hamama* is more cathartic, and *Waj* is more dessicant, so it would be better that while using *Hamama* a retentive is added and a laxative while using *Waj*.

**Farbiyoon-Hilteet** is being used because fresh *Farbiyoon* produces more heat than *hilteet*

**Laghiya:** Galen says that its potency is equal to that of *Farasiyoon*, so it should be used as a therapeutic interchange, while others say that *Laghiya* is less active than *Farasiyoon*.

**Sakbinaj:** Galen, in his article "*Al-Adwiyatil Muqabila Lil Adwa*," says that *Qinna* can be a therapeutic interchange, primarily white *Qinna*. However, its potency is less than *Sakbinaj*, i.e., with respect to being an antidote to lethal poisons.

**Species:** Species of one genre of a plant are the therapeutic interchange of each other, e.g., for *Artemesia absinthinum*, *Artemesia maritima* Linn., and *Mentha piperita* Linn, *Mentha aquatica* Linn is used.

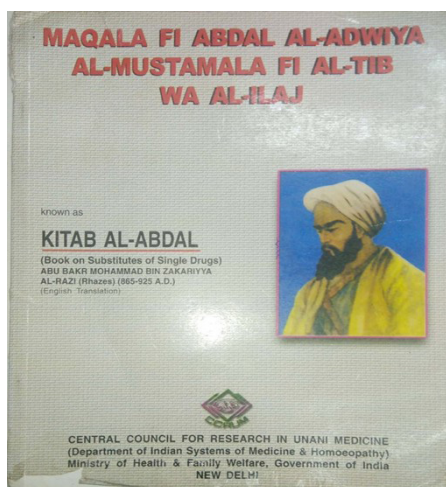
**Rare drug:** Some rare drugs are used as therapeutic interchanges, e.g., the skin of *Samoor*, *Ezam Aswaqt al Ghazlan*. *Yatuat* means all plants that secrete toxic latex are called *Yatuat*. The following seven plants are recognized in this category- *Ushq (Madaar)*, *Laghiya*, *Artanisa*, *Mahu*, *Dana*, *Mazriyoon Bantafilon*, *Shibram* and *Sadawaran* (A type of gum found on Bun trees is also discussed), its therapeutic interchange is *Feel zahraj (Rasaut)*.

## DISCUSSION

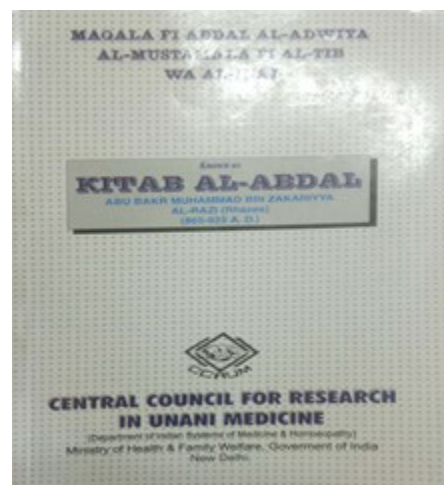
This is first book on this subject. Razi benefitted from the views of all his predecessors and added his own observations and clinical experiences. The edited book is the only book that has compiled fundamental principles of therapeutic interchange of drugs. This book provides valuable information in a clear and organized manner about the uses, dosages, and other therapeutic interchanges for 122 medications. To therapeutically interchange a drug, some rules have been devised so that when a drug is interchanged, it is tested on these parameters and new alternatives suggested.

In his book "Canon," Avicenna advises that therapeutic substitution should only be employed when the intended medicine is unavailable.<sup>6</sup> Avicenna is very cautious in suggesting therapeutic interchanges for single drugs. That is why he has described just sixty one therapeutic interchanges from a long list of seven hundred eighty one drugs mentioned in al-Qanoon. Therapeutic interchanges for other drugs have yet to be specified.<sup>6</sup>

Rhazes has also quoted the following principles for the therapeutic interchange of drugs from Galen's book, "*Al Adwiyat-al-Maqabela Lil Adwa*". "If you need a single drug of good quality which is unavailable, use a drug of reduced quality, it will be less harmful. Then if you want to prepare a compound drug of which one single drug is not available, reduced quality drug double the weight of the original drug can be used. Thus, the efficacy of the drug would remain same" No drug can completely replace another drug therapeutically in all aspects, according to Avicenna and Rhazes. To quote part of al-Qanoon, "*Badalahu fima zaama bazuhum al khas fi jamee' af'alihi*". Avicennas does not give any weightage to the view of some physicians that *Khas* could be a therapeutic interchange for *Dam al-Akhwain* in all its actions.<sup>1,16</sup>



Kitab al Abdal ( Arabic with English translation)



Kitab al Abdal ( Arabic with Urdu translation)

Image courtesy: Central Council for Research in Unani Medicine (CCRUM), New Delhi

**Table 6: List of Therapeutic interchanges for Different Pharmacological Actions.**

Annotation No	Actions	Main drug	Therapeutic interchange
002	Deobstruent and stomachic	Afsanteen	Asroon and Halela Zard
011	Watery Purgation	Irsa	Mazariyoon
012	Strength in the memory	Afzar	Kundur, Tukhum-e-Badiyan,
013	Insanity	Aftimoon	HazarJashan
016	Melanous Diarrhoea	Bisfaj	Aftimoon
019	Disease of the head	Biranasif	Babuna
020	Exhilarant and cardiac tonic	Badranjboya	Abresham and post-Utraj
021	Asthma	Persiwashan	Banafsha and Sosan (Leaves and Roots)
022	Chronic Fever	Badaward	Shahtara
026	Inflammation of liver and spleen	Jintiyana	Asaroon and Bekh-e-Kibr
028	Vermifuge, diuretic, emmenagogue	Jodah	Anar and post shakh-e-salikha
029	Demulcent and resolvent	Darsini	Abhal
030	Atony of Nerves	Dar Shishaan	Zarawand
032	Sclerotic inflammation	Diffa (Kaner)	Asabi al-Malik and Barg-e-Injeer
033	Uterine Flatus	Darunaj	Zarabad and Qaranfal
037	Alopecia	Dohn al-Ghar	Zift-e-Ratab
041	Swelling and inflammation	Dibaq	Kaur (Muqil) and Abhal
046	Gout	Hasht Dahan	Qunturioon-e-Daqiq
048	Flatus and cold disease of spleen and liver	Waj	Kamoon and Rewand
050	Poisonous insects and flatulence	Zaranbad	Darunaj, Tarkhashqooq Barri, and Habbul Utraj
054	Flatus	Zarawand Taweel	Zaranbad and Anzaroot
063	Diarrhoea and bleeding	Tarasees	Qishr-e-Baiza-e-Murgh and Muharraq magshool
064	Purgation of melanin and hydrogogue pupose	Yatuat	Irsa and Sakbinaj
067	Emetic	Kundush	Jauz ulqai and filfil
068	Paralysis and neuralgia	Karkarhan	Aqarqarha and Sheetraj
078	Stomachic	Maurid Asfaram	Afsanteen
086	Chest pain	Sosan	Nargis
087	Gout	Suranjan	Barg-e-Hina and Muqil Azraq
088	Hair tonic	Sadawaran	Asl-ul-Qasab
092	Hot inflammation	Ausaj	Ushna and Fofal
093	Eye Cleansing and improving eye sight	Urooq	Mamiran
094	Abortifacient and antidote to poisons	Artanisa	Zarawand Taweel, Habb-e-Utraj and Faudanj
100	Pains due to o cold humours, especially colic and gout	Filfilmoya	Nar Mushk and Suranjan and Qurtum Muqashshar
109	Dysfunction of liver and stomach	Reward	Gul-e-Surkh and Sumbul-e-Asafeer
111	Aphrodisiac action	Shaqaqul	Buzidan
112	Evacuation of stomach and in wet itching	Shahtaraj	Senna half and Helela Zard
116	Alopecia	Tafsia	Hurf
120	Renal colic and to enhance sexual powers	Khusrodaru	Darchini and Bazrul Qareez
122	Cathartic for phlegmatic and mealanous humours	Ghaariqoon	Turbud, Aftimoon, and Khirbaq

**Table 7: List of Therapeutic interchanges for Different Origins.**

Origin	Annotation No.	Main drug	Therapeutic interchange
Plant-origin drugs being a therapeutic interchange of animal-origin drug.	006	Ushuq	Wasakhul Kor (wax)
	011	Irsa	Labn ul Luqah (Sheer e Mada -e- Shutur)
	051	Zaufa ratab	Mukh Saqul Baqar (Bone marrow of cow legs)
	063	Tarasees	Qishr-e-Baiza Murg Muharraaq maghsool
	071	Labani	Jundbedstar
	095	Farbiyoon	Khar al himar
	098	Fawania	Far al Sumoor Ezam Aswaqt Al Ghazlaan
Animal origin drug –Plant origin drug.	023	Jundbedstar	Filfil Siyah
therapeutic interchange of mineral origin drug is mineral origin drug.	057	Hajar e faroiya	Hajar e Fizza
	066	Kohl (Sang e Surma)	Nuhas Moharraaq
therapeutic interchange of animal origin drug is animal origin drug.	072	Lulu	Sadaf

**Table 8: List of Therapeutic interchanges for Different Origins.**

Annotation No.	Main Drug	Temperament	Therapeutic interchange	Temperament
011	Irsa	Hot and Dry	Labn ul Luqah	Hot and moist
031	Roghan Al Balsan	Hot and Dry	a. Roghan e Naryal	Hot and moist
			b. Roghan e Kewra	Cold and moist

It is similarly vital to be explicit for which action a particular medicine is replaced by another because it frequently happens that a drug is therapeutically substituted for another drug for a specific activity, even though the latter's other effects may be quite different. Secondly, if a medicine is therapeutically interchanged with another drug that has the same property, the second drug should be the original drug's therapeutic interchange for that activity, even though the second drug can be replaced by a third drug for a different action.<sup>1,16,17</sup>

It is essential that the temperament of original drug and therapeutic interchanged drug should match. For instance, the therapeutic interchange should be hot and dry in the first degree if the medicine is hot and dry in the first degree; but if therapeutic interchange is hotter and drier, the dose of it should be less than the original drug. Similarly, if the therapeutic interchange is of lower temperament, the dose should be increased. It is not possible that a drug of hot and dry temperament could be therapeutically interchanged by a cold and moist temperament drug.<sup>1,16</sup>

There are numerous instances where a drug of one origin is substituted with a drug of another origin. For instance, a medicine of animal origin may be therapeutically replaced with a drug of plant origin, e.g., therapeutic interchange for *Jund Bedastar* (*Castor fiber* L) is *Mirch Siyah* (*Piper Nigrum* L.) half its weight.

**Table 9: List of Therapeutic interchanges for Compound Drugs.**

Annotation No.	Main drug	Therapeutic interchange
034	Dawa al Qust	Dawa al Kumkum,Dawa al luk
031	Dohn Al Balsan	Oil of keora
035	Dohn al Khirwa	Roghan Zaitoon
036	Dohn al Qurtum	Roghan Anjarah
037	Dohn Al Ghar	Zift -e-Ratab
038	Dohn As Sosan	Dohn-al-Ghar
039	Dohn Al Hina	Dohn-al-Marzanjosh
040	Dohn al Ward	Dohn-e-Banafsha
042	Dohn al Nilofer	Dohn-e-Banafsha
071	Labani (Mea e Saila)	Dohn e Yasmeeen.

Avicenna has described the therapeutic interchange in the same way, “Therapeutic interchange for *Jund* (*Castor fiber* L) is equal weight of *Waj*(*Acorus calamus* L.) with half weight of black pepper (*Piper nigrum* L.).” According to Avicenna, an animal-origin medicine may be used therapeutically in place of a drug with a plant origin. For example, *Zaufa ratab* is a therapeutic interchange for *Mukh Saqul Baqar* (Bone marrow of cow legs). One species of



a plant could be a therapeutic interchange for the plant of other species. Rhazes, quoting Galen, says that therapeutic interchange for *Podina Kohi* (Mentha) is *Podina Nahri* (Panny Royal).<sup>1,16</sup>

Sometimes another part of the same plant serves as therapeutic interchange. For instance, as in the case of blood purification, another part of the same plant is used if a particular part of the plant or tree is unavailable. For example, if Margosa flowers are unavailable, Margosa leaves, or bark is used. According to this principle, therapeutic interchange for *Persiawashanan* (Maiden hair fern) is *Sosan* leaves (Lily) with *Banafsha* (Violet) or *Sosan* root.<sup>1,16</sup>

## CONCLUSION

In most drugs, the author has appropriately mentioned the desired weight, which they could prove as therapeutic interchanges. The basis of the therapeutic interchange of drugs is based upon action and temperament. However, a fair comparison between the therapeutic interchange and original drug must be made regarding whether or not both drugs have the same temperament and how much they correspond with each other in actions. Besides, in what diseases they could be therapeutically interchanged. When a therapeutic interchange is suggested as an alternative, the possibility of a particular medicine serving as a therapeutic interchange for a given disease and drug should be discussed and stated. In this context, different kinds of research can be conducted. One is literary research, which allows for pharmacological and phytochemical comparisons after a literature review.<sup>17</sup> The second approach may be clinical, which would involve testing the medications on actual patients and recording which medication would take the place of another and

how they are comparable. Thus, such distinctive fundamental elements for the therapeutic interchange of medications can be considered for future topic of scientific investigation and harmonization. However, this book is a milestone in respect of medicinal therapeutic interchanges and opens new avenues of research for exponents of medicine.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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