

Research Article

# Comprehension of Rukni Amraz (Elemental Diseases) in Perspective of Unani Medicine

Prof. Mohammad Zulkifle, Sayed Tauleha

Department of Kulliyate Tib, National Institute of Unani Medicine, Kottigepalya, Magadi Main Road, Bengaluru, India- 560091

Correspondence should be addressed to Prof. Mohammad Zulkifle, [zulkiflenium@gmail.com](mailto:zulkiflenium@gmail.com)

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**Abstract** According to Unani medicine, *arkān* are primordial constituents of *mawālīd thalātha* (three primary matters) i.e. animals, plants and minerals. Therefore, they are responsible for sustenance and growth by providing adequate replenishment to the dissolution occurring in the body. Balance in the proportion of *arkān* is responsible for healthy state of body and any disturbance in their normal proportion leads to *rukni amrāḍ* (elemental diseases) e.g. Loss of body water leads to dehydration. One *rukni* is *arḍ* along with all its constituents. In *arḍi amrāḍ* deficiency or excess of any constituent of earth may lead to disturbance in its proportion and can lead *arḍi amrāḍ* e.g. Deficiency or excess of calcium and iron. This category of disease is mentioned in Unani literature but not described in detail and under the head of elementary diseases. In this paper the hidden aspect of Unani medicine is explored in light of modern knowledge.

**Keywords** *Arkān; Mawālīd Thalātha; Unani medicine*

## Introduction

Unani medicine relates seven factors towards *Ṭabīʿat* (Medicatrix naturae), for well-being and existence of the human body. These factors collectively called as *Umūr Ṭabīʿiyya* (Factors of the existence).<sup>[1]</sup> These factors are considered essential for the functioning of *Ṭabīʿat*. *Ṭabīʿat* is the supreme planner and executer of various functions of the body.<sup>[2,3]</sup> *Ṭabīʿat*, itself, can reside only in a body and isolated existence of *Ṭabīʿat* cannot be imagined. These seven factors are placed in an evolutionary order from simplest to the most advance. The first factor amongst these is *Arkān* (Primary building blockers).<sup>[4]</sup> *Arkān* provide material, along with other factors, for the body building.<sup>[5]</sup> These *Arkān* are not of uniform qualities rather are of opposing and contrary qualities.<sup>[6,2]</sup> *Arkān* namely *Arḍ* (Earth), *Māʾ* (Water), *Hawā* (Air), *Nār* (Fire). *Māʾ* and *Nār* are opposite to each other and *Arḍ* and *Hawā* are opposite to each other.<sup>[7]</sup> When these four assemble in a body, then they tend to ruin each other and because of this and others endogenous as well as external dissolving factors, these *Arkān* dissolve continuously. For continuation of existence and sustenance, replenishment of these is obtained from diet, air, water and heat.<sup>[8]</sup> According to Unani philosophy human body is built from these four *Arkān*.<sup>[4]</sup> In all human proportion of these four is not uniform and compositional

variations exist.<sup>[9]</sup> There is dominance of one or other *Rukn* in every body. Existing *Mizāj* (Constitution or Temperament), sometimes, relates with qualities of dominant *Rukn* or with metamorphic form of that *Rukn* i.e. humour. This proportion of *Arkān* give rises *Mizāj* and this proportion is also said *Mizāji*,<sup>[10]</sup> because *Mizāj* and thereby functions depend upon this proportion of *Arkān*. Subordinate to *Mizāj* is *Ṭabīʿat* which works to maintain *Mizāj*.<sup>[4]</sup> Any derangement in proportion of these *Arkān* leads to *Mizāji* deviation. In Unani system of medicine foremost form of diseases is temperamental derangement. This category of diseases is called as *Amrāḍ Sū-i-Mizāj* (*Diseases of temperamental derangement*).<sup>[11]</sup> *In my opinion one subcategory of these diseases should be such when temperamental derangement is because of proportional disturbance of Arkān.* Excess or deficiency of one or more *Arkān* can alter the existing normal *Mizāj* and thereby functional alteration becomes evident in the form of diseases.

In human body dominant *Arkān* are *Arḍ* and *Māʾ*, active qualities of other two *Arkān* are present in active form.<sup>[10]</sup> A physiological proportion of these four *Arkān* is mandatory for health. *Arḍ*, *Mā* and *Hawā* participate in body building of human body with all their minor and major constituents. e.g. *Hawā* containing Oxygen (O<sub>2</sub>), Carbon dioxide (CO<sub>2</sub>), Nitrogen (N<sub>2</sub>) and others normal constituent. Similarly, *Arḍ* enters in making human body with all its constituents. These constituents may be minerals, electrolyte and metals. At the time of genesis of body and establishment of *Mizāj* a definite proportionate amount of these *Arḍi* (Earthy) constituents enter into the body and then perform their functions. Ancient Unani physicians were not familiar with physiological functions of individual constituent of *Arḍ*. Neither they were familiar with these constituents. With the advent of analytical advance techniques so many earthy constituents were discovered and then their presence in human body was revealed and subsequently their physiological role and functions were determined. Obviously, this knowledge paves the way towards their pathology.

## Discussion

These earthy constituents are divided, on the basis of their requirements into major and minor categories.<sup>[12]</sup> Amongst the major constituents are Sodium (Na), Potassium (K), Calcium (Ca), Phosphorus (P), Magnesium (Mg) and minor are Chromium (Cr), Cobalt (Co), Copper (Cu). Fluorine (F), Iodine (I), Iron (Fe), Manganese (Mn), Molybdenum (Mo), Silicon (Si), Zinc (Z), Chlorine (Cl), Sulphur (S) Diseases of excess and deficiency of each constituent are now well recognized.<sup>[13]</sup> Diseases due to major constituents are more prevalent and more recognized. Whereas diseases due to disturbance of minor constituents may be wide prevalent but are not perceived easily or become evident only after diagnostic tests. Sometimes diseases because of minor constituents become serious and may lead to fatality. Sodium (Na) and Potassium (K) are main anion of ECF and ICF and are responsible for membrane electric potential difference.<sup>[14]</sup> Both are involved in excitability of living cells. Being osmotically active they are also responsible for homeostasis of water.<sup>[15]</sup> Excess and deficiency of these two mainly affect neurological and muscular function including heart.<sup>[14]</sup> Secondly they affect hydration state of the body. Equilibrium of both Sodium (Na) and Potassium (K) maintain mental functions also.<sup>[12]</sup> Calcium (Ca) and Phosphorus (P) play crucial role in bone, muscle and teeth health.<sup>[13]</sup> Calcium (Ca) is also an important anion which takes part in nerve transmission, muscle contraction, and blood coagulation.<sup>[14]</sup> It also acts as intracellular messenger. Phosphate (P) is an essential component of various energy storing and releasing component like ATP, GTP and of genetic materials RNA and DNA.<sup>[16]</sup> Major proportion of Magnesium (Mg) is found in bone complexed with Calcium (Ca).<sup>[13]</sup> Its deficiency is manifested in the term of neuromuscular disturbance. Carpopedal spasm, sometimes is because of deficiency of Magnesium (Mg). Intracellularly it acts as activator of many enzymes. Manganese (Mn) is also an activator of cellular enzymes.<sup>[17]</sup> It also stimulates bone growth and cholesterol synthesis. Participation of Manganese (Mg) in glucose metabolism is also documented. Copper (Co) is present in cytochrome oxidase and

ceruloplasmin.<sup>[16]</sup> Its deficiency causes iron deficiency anaemia and Wilson's hepatolenticular degeneration. Cobalt (Co) being a part of vitamin B12 participates in formation of Hb and maturation of erythrocytes.<sup>[16]</sup> It is also documented that Cobalt (Co) stimulates the synthesis of erythropoietin. Arginase and carboxylase enzymes have nickel. It is a component of hair and plays some role in health of hair. Chromium (Cr) improves the action of insulin and its deficiency causes glucose intolerance.<sup>[13]</sup> In this sense it is considered as diabetogenic and now routinely used in anti-diabetic therapy. A well-recognized intracellular antioxidant, which prevents cell membrane peroxidation and cancer is selenium (Se).<sup>[18]</sup> Its deficiency causes cardiac and skeletal muscle disturbances. Hair nail abnormalities and emotional lability are because of Selenium (Se) excess. Zinc (Zn) works as a cofactor for a number of enzymes.<sup>[17]</sup> Appetite, wound healing and well-being are related with it. Acute deficiency of Zinc (Zn) may lead to diarrhoea, encephalopathy, eczema and hair loss.<sup>[13]</sup> Chronic deficiency of zinc may lead to dwarfism, hypogonadism and ophthalmoplegia. Diabetes mellitus may cause zinc deficiency, hence now zinc is administered routinely in anti-diabetes therapy. Iodine is known, since long for its goitrogenic effect.<sup>[14]</sup> It participates in thyroxine synthesis and deficiency leads to deficient synthesis of thyroxine and consequently goitre.<sup>[19]</sup> Antidotal carries element fluorine is present in hard water.<sup>[13]</sup> Its excess is responsible for mottling of enamel and discolouration of teeth.<sup>[12]</sup> Much higher level of fluorine may cause osteosclerosis and calcification of ligament. Involvement of Iron (Fe) in synthesis of haemoglobin (Hb) is well known.<sup>[15]</sup> It is also the part of myoglobin and cytochrome oxidase enzyme system.<sup>[16]</sup> Abnormalities of both deficiency and excess of iron are well documented. Iron deficiency anaemia may be considered as the most prevalent disease in lower middle and lower society. Indiscriminate consumption of iron causes its deposition in various organs, specially in liver and pancreas. This deposition is called as siderosis and it leads to diabetes mellitus.<sup>[20]</sup>

Some from described earthy element are water soluble and hence, they are present in water in abundant quantities e.g. sodium, iodine, fluorine.<sup>[13]</sup> Because of continuous addition of water-soluble elements to the sea. Sea water is the richest source of NaCl. Iodine and fluorine are also present in potable as well as sea water.<sup>[12]</sup> Other earthy elements are obtained from dietary sources. Unani physicians are of opinion that dissolved or leached out element of the body is replenished and repaired by the same *Rukn* (Element), but earth and earthy constituents are taken in diet.<sup>[6,8]</sup>

On evaluation of dietary sources of these earthy elements, it becomes immediately evident that all sources are *Bārid* (Cold), *Bārid Yābis* (Cold and dry) or *Ghaleez* (Viscous). All diets with *Bārid* constitution and *Ghaleez* character are earthy and dominating *Rukn* in all of them is earth. This may be taken as an evidence in favour of concept of Unani medicine regarding replenishment of *Rukn* by the same *Rukn* i.e. replacement of the lost or deficient element by the same element in any form. This concept of homotherapy was first proposed by *Masihi* AS and other stalwart of Unani medicine also followed it.<sup>[5]</sup> The different earthy constituents are not uniformly distributed in diet. Any particular earthy element is present in certain specific diets in abundance e.g. K<sup>+</sup> in pineapple, pear and fresh coconut, iron in leafy vegetable and liver of animal. Iodine is present in abundance in sea fishes. Intake of different diet, in moderation prevents the disturbance in healthy homeostasis and proportions of various earthy elements.

Unani physicians have not described this category of diseases separately. But surely, they were familiar with the *Rukni* diseases. In Unani literature some such instances are present where description is focused on *Rukni* diseases. Diseases because of deficiency or excess of water contents of body, air and fire are described elaborately. The diseases due to altered quantity of earthy constituents are difficult to find but can be extracted and conceived from the description of certain diseases. As a matter of fact, all diets transform into corresponding humours.<sup>[11]</sup> Hence primarily dietary modifications are suggested to maintain and restore the humoral balance.<sup>[2]</sup> Concept of dieto

therapy is deep rooted in the treatment of humoral and temperamental diseases. Intake of appropriate diet not only rectify quantitative but also qualitative disturbance is concern humour.<sup>[21]</sup> Qualitative disturbances are limited only up to *Kayfiyat* of humours not beyond.<sup>[22]</sup> Isolation and microanalysis of humour could not have been possible, otherwise some more qualitative/compositional details and disturbances would have been evident. And very rightly root of dietotherapy would have spreaded up to their rectification. In my opinion these earthy constituents would be parts of one or other humours. Now it is well established that these earthy elements are the parts of essence of the body. Very minute or minute quantities of these element is lost from the body.<sup>[13]</sup> This loss makes the replenishment mandatory. This replenishment can be obtained only from the identical form in which they are lost.<sup>[5]</sup> This identical form of earthy elements is available either in cellular environment as a part of cells or in pharmaceutical or nutraceutical forms. Now supplements of these earthy elements are routinely used therapeutically for the treatment of various clinical syndromes attributed to excess or deficiency of a particular earthy element e.g. deficiency of Ca, PO<sub>4</sub>, Se, Cl.

## Conclusion

Detailed and formal description of elemental diseases is not given in literature of Unani medicine. But it is not possible to deny that first this category of diseases was conceived by Unani physicians. Recognizing *Arkān* (Primary components) as essential and primary building blockers of the body, Unani physicians confirm the involvement of elements in body and in its various functions. Unani physicians described the interaction between four *Arkān* and their dissolution.<sup>[4]</sup> In view of dissolution, replenishment was accepted as the only mean of sustenance.<sup>[8]</sup> *Rukn Arḍ* dissolutes in various viscous wastes including faeces. For the replenishment of *Rukn Arḍ* and its components, most approximate forms of *Arḍ* i.e. diet is recommended. From this theory of replenishment, Ideas of supplement and avoidance originated. It was also the origin of homotherapy. Homotherapy means compensation of lost component by the identical component i.e. water with water or air with air.

From this it can be concluded that diseases due to excess or deficiency of earthy components (elements) can be remedied by dietary modification effectively. Modification in diet made to combat the diseases, is the spirit of dietotherapy.<sup>[11]</sup>

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