

## Representation of *A'ḍā' Mufrada* (Simple Organs): Then and Now

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### ABSTRACT

**Background:** The homogenous organs found in human body which are solid in consistency are known as *A'ḍā' mufrada*. According to majority of Unani physicians the simple organs are *Izām* (bones), *Ghaḍārīf* (cartilages), *Ribāt* (ligaments), *Awtār* (tendons), *Aghshi'ya* (membranes), *Lahm* (muscular tissue), *A'ṣāb* (nerves), *Sharāyīn* (arteries), *Awrida* (veins), and *Shahm* (fat). Some physicians also added *Ash'ār* (hairs), *Mukh* (bone marrow) and *Azfār* (nails).

**Purpose:** The list of simple organs present in *Unani* classical literature is macroscopic, but with respect to time and advancements, as there is huge gap of time, the vision and approach to visualize the things had been reached to nanotechnology from macroscopic that was only done through naked eyes. Therefore, it is much needed to see the simple organs under the vision of present knowledge and represent them if needed.

**Methodology:** Organs which are constituted of similar basic units would be kept as simple organs; otherwise it would be compound organ. The work had been done with the help of advancement by histologist.

**Conclusion:** In *Unani* literature it must be analyzed and re-visualized to update the chapter of *A'ḍā' mufrada* (simple organs). If there are some organs which are not of similar basic units must be excluded.

**Key Words:** *A'ḍā' mufrada*, simple organs, homogenous organs, human body, *Unani*.

### INTRODUCTION

Today we are in the twenty first century, our lifestyle changes with every dawn. It is more evident in the field of science; various inventions and discoveries are taking place daily and adding something new to life. The same is with the medical science which is directly related with the human health. Now the work that should be done first in the field of *Unani* medicine is to provide substantial experimental based to its philosophy and theories on the lines of modern research and techniques may be adopted. In this way *Unani* medicine could become more authentic and reliable.

As a research scholar of *Kulliyat* my subject is related with the fundamentals of

*Unani* medicine, which deals with all aspects of human life. The following paper is about the definition and count of *A'ḍā' mufrada* (simple organs) which are essential tool of the *Quwa* (powers) and *Afa'l* (functions).

This paper aims to direct the *Unani* scholars to research and analyze the things, and make them more clear and accurate. This work is to validate the *A'ḍā' basīṭa* in the light of definitions given by *Unani* scholars and modern histology, also giving the correct list of *A'ḍā' mufrada* (simple organs).

*A'ḍā' mufrada* (simple organs) comes on fourth number in the sequence of *Umūr Ṭabī'yya*. *Ali Ibne Abbas Majoosi* and

*Ibne Sina* says *Akhlāṭ* (humours) are the proximate principles for the human body, but the more proximate are *A'ḍā' basīṭa* which are composed of *Akhlāṭ* and *A'ḍā' 'Āliya* that are composed of *A'ḍā' basīṭa*.<sup>[1-4]</sup> *A'ḍā' mufrada* are also known as *A'ḍā' basīṭa/A'ḍā' mutashābihal al-ajzā'*. *A'ḍā' mufrada* are defined as the organs which consists of the smallest part of that resembles exactly to the whole organ. *A'ḍā' mufrada* (simple organs) are therefore, homogeneous in their structure throughout e.g. a piece of bone is also known as a bone, as applied for the whole bone.<sup>[1,3]</sup> The definition completely confirms to the description of the tissues available today that a tissue is a group of cells that usually have a common embryonic origin and function together to carry out specialized activities, in other words it is an aggregate of similar cells and cells products forming a definite kind of structural material with a specific function in a multi cellular organism.<sup>[5-7]</sup>

Infact the *Tibbī* scholars call the tissues as *A'ḍā' basīṭa* (simple organs). These *A'ḍā'* are said to be made up of primary combinations i.e. combination of the smallest unit of *A'ḍā'* known as *khaliyya* (cell).<sup>[8]</sup> According to majority of *Unani* physicians the simple organs are *Izām* (bones), *Ghadā'rīf* (cartilages), *Ribāṭ* (ligaments), *Awtār* (tendons), *Aghshi'ya* (membranes), *Lahm* (muscular tissue), *A'ṣāb* (nerves), *Sharāyīn* (arteries), *Awrida* (veins), and *Shaḥm* (fat).<sup>[1,3,9,10]</sup> Some physicians also added *Ash'ār* (hairs), *Mukh* (bone marrow) and *Azḡār* (nails).<sup>[9,10]</sup> These *A'ḍā' mufrada* should be reviewed and revised for their anatomical, physiological, morphological, and histological knowledge but it must be remain on the definition of *A'ḍā' mufrada* which is given by *Unani* scholars, and they may be concluded that either they are single or compound like: *Sharāyīn*, *Awrida*, *Jild*, *Mukh*, *Azḡār*, *Ash'ār*. On the basis of definition and organization of *A'ḍā' mufrada*, the list given by *Unani* scholars must be re-organized.

Man has always observed the things by five senses. So that ancient physicians did the same to put forth structure of the body. *Ibne Sina* had given the list of *A'ḍā' mufrada* based on macroscopic observation. But nowadays to observe the things, efficacy and the vision have been reached to micro level from macro level with the achievement of time and aids.

*Rhazi* does not include *Sharāyīn* (arteries), *Awrida* (veins), *Awtār* (tendons), and *Aghshi'ya* (membranes) into simple members. He stated that these organs are made up of *A'ṣāb* (nerves) and *Ribāṭ* (ligaments), then only the definition of simple organs i.e. those whose structure is homogenous throughout. So, that their names describe them in all parts.<sup>[11]</sup> Professor *Ashhar Qadeer* also had given the path to make this list of *A'ḍā' mufrada* more accurate according to the aids and knowledge of present scales in his manuscript titled as *A'ḍā' Mufrada Aur Unki Tadaad*, published in *Jahane Tibb*, Vol. 4, Issue, 4, page numbers 52, 53, 54 in 2002.<sup>[12]</sup> But even after this *A'ḍā' mufrada* remained same in the *Unani* textbooks and taught as same as they were 1000 years ago. Therefore on the basis of his efforts, I took this work for the academic research to give the list of *A'ḍā' mufrada* by keeping the two essential feature of *A'ḍā' mufrada* that they are solid in consistency and the other is that they are homogenous.

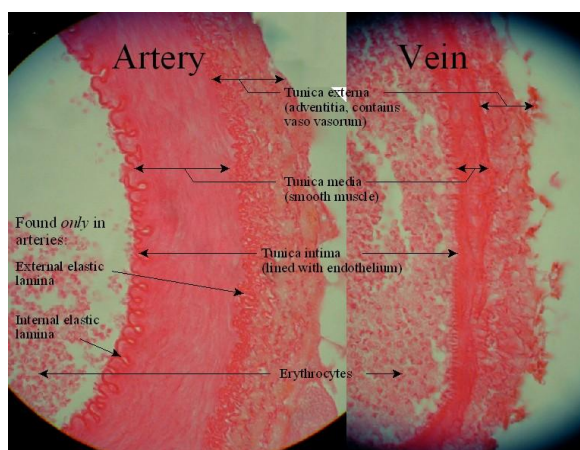
## METHODOLOGY

Organs which are constituted of similar basic units would be kept as simple organs; otherwise it would be compound organ. The work had been done with the help of advancement by histologist. Therefore, the microscopic constitution of the simple organs present in *Unani* classical literature must be seen to look for the basic units either organ has similar units or different units are present in its composition.

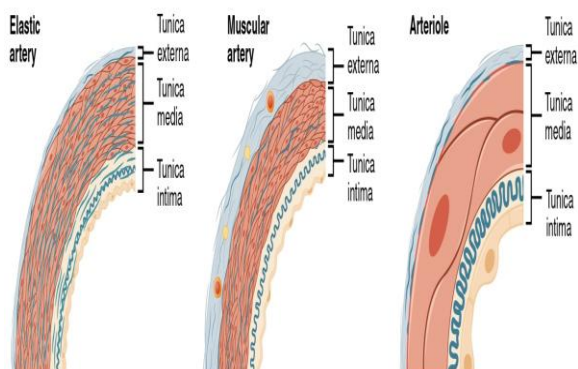
In this paper arteries and veins are being taken to give a methodology to see the all simple organs. *Arteries* and *veins* are

taken on the parameter of histology to visualize their constitution of similar cells or have similar units which are homogenous. The histological morphology of *arteries* and *veins* is being considered to look for their basic unit and morphological composition.

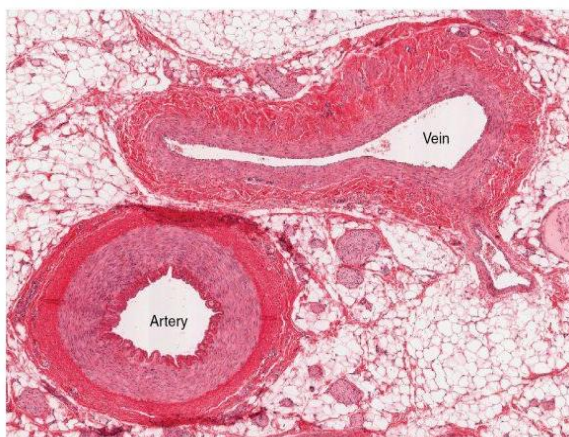
### Sharāyīn (Arteries) and Awrida (Veins) under the microscope:



Microscopic View of Artery and Vein [13]



Microscopic View of Artery and Vein [14]



Microscopic View of Artery and Vein [15]

*Sharāyīn* (Arteries) and *Awrida* (Veins) under the microscope their structure is, of three different layers;

1. **Tunica Intima:** The innermost layer is called tunica intima (tunica = coat). It consists of (a) an endothelial lining; (b) a thin layer of basal lamina; (c) a delicate layer of subendothelial connective tissue; and (d) internal elastic lamina.
2. **Tunica Media:** Outside the tunica intima there is the tunica media or middle layer. It consists of elastic tissue or of smooth muscle; some connective tissue is usually present.
3. **Tunica Adventia:** The outermost layer is called tunica adventia; this layer consists of connective tissue in which collagen fibres are prominent. [16-18]

The basic and essential properties of *A'ḍā' mutashābihal al-ajzā'*/*A'ḍā' Basīṭa*/*A'ḍā' mufrada* are;

- ✓ Solid in consistency,
- ✓ It must have similar (basīṭ) units in its composition. [1, 3, 4]

So, it can be seen easily that arteries and veins are not made up of similar basic units, there are different types of tissue or in other words there are different types of cells are present in its composition. Therefore, there should not be any hesitation to exclude out arteries and veins from the list of simple organs.

The knowledge present regarding simple organs and their list in Unani classical literature has been reviewed in my previous publication titled as "Definition and Count of A'ḍā' Mufrada (Simple Organs): A Critical Review" published in *EJPMR*, 2018, 5 (4), page number 267-269. [19]

### CONCLUSION

In Unani literature, simple organs must be analyzed and re-visualized to update the chapter of *A'ḍā' mufrada* (simple organs). If there are some organs which are not organized of similar basic units must be excluded. By this study we would be able to get the knowledge of *A'ḍā' mufrada*, and after getting satisfactory an up to date list of



A'dā' mufrada, it must be recommended to the syllabi of A'dā' mufrada in *Kulliyat Umūr-e-Ṭabī'yya* for students to make their vision and knowledge correct, which will enhance the theoretical facts more clear and correct.

**Future prospects:** The all simple organs must be look like arteries and veins have been seen in this paper to rule out their composition for the rectification of simple organs mentioned by *Unani* scholars.

**Conflict of Interest:** There is no conflict of interest.

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How to cite this article: Ansari MA, Qadeer A. Representation of A'dā' Mufrada (simple organs): then and now. Int J Health Sci Res. 2018; 8(12):174-177.

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