

PHYSIOLOGICAL UNDERSTANDING OF *PANCHAKAPHA*Shetty Supritha Sundar¹, K N Rajashekhar², Arjun.N³

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ABSTRACT

The roots of Shareera (body) existence are *Doshas*, *Dhatus*, and *Malas*. The theory of *Tridosha* is unique to Ayurveda. These *Doshas* decide the phenotypic and genotypic character of an individual. They are essential in maintaining the homeostasis of the body. *Doshas*, when vitiated, can lead to diseases. *Vata*, *Pitta*, and *Kapha* are the *Tridoshas* with specific *Karma* (functions) in the body due to their particular *Gunas* (properties). Among the *Tridoshas*, *Kapha* has properties like *Shlakshna*, *Sthira*, *Guru*, *Sheeta*, etc., which suggest that it is heavy, slimy, thick, and cold. There are five types of *Kapha* – *Avalambaka*, *Kledaka*, *Shleshaka*, *Bodhaka*, and *Tarpaka*. Each of them has its specific location and functions. An attempt is made to understand and correlate *Kapha* and its subtypes with modern medical science.

Keywords: *Pancha Kapha*, *Gunas*, *Sthanas*, Body fluids.

INTRODUCTION

Ayurveda, an ancient science, is based on the *Tridosha* theory, which forms the base for all fundamental principles in the classics. These three *Doshas*

function at the cellular level and help maintain the body's homeostasis. The *Gunas* explained for the *Kapha* like heavy, slimy, thick, cold; unctuous sug-

gests that it has the function of keeping the structures of the body intact, maintaining the body fluid composition lubrication to the body structures¹. The root of these properties is the predominance of *Prithvi* and *Jala Mahabhoota*². *Acharya Vagbhata* mentioned the general site of *Kapha* as *Uras*, *Kanta*, *Kloma*, *Shira*, *Parva*, *Amashaya*, and *Rasa*, with *Uras* as the essen-

tial location among them³. At the same time according to *Acharya Sushruta*, it is *Amashaya*⁴. Five subtypes are explained for *Kapha*: *Avalambaka*, *Kledaka*, *Shleshaka*, *Bodhaka*, and *Tarpaka*. Depending upon their location, they have different functions in the body⁵.

Table No.1 Location of *Kapha Dhatu* according to different *Acharyas*

<i>Ash. H [Su.12/3]</i>	<i>Ash. Sangraha[Su 20/8]</i>	<i>Charaka[Su 20/8]</i>	<i>Susruta [Su 21/6]</i>
<i>Urah</i>	✓	✓	✓
<i>Kanta</i>	✓		✓
<i>Shira</i>	✓	✓	✓
<i>Kloma</i>	✓		
<i>Parvani</i>	✓	✓	✓ (Sandhi)
<i>Amashaya</i>	✓	✓	✓
<i>Rasa</i>	✓		
<i>Meda</i>	✓	✓	
<i>Ghranam</i>	✓		
<i>Jihwa</i>	✓		

Table No.2 Subtypes of *Kapha* and their locations

<i>Subtypes</i>	<i>Sthanas(Location)</i>	
	<i>Ashtanga Hridaya</i>	<i>Sushruta Samhita</i>
<i>Avalambaka</i>	<i>Uras</i>	<i>Uras</i>
<i>Kledaka</i>	<i>Amashaya</i>	<i>Amashaya</i>
<i>Bodhaka</i>	<i>Rasana(jihwa)</i>	<i>Jihwendriya, Jihwamoolakanta</i>
<i>Tarpaka</i>	<i>Shira</i>	<i>Shira</i>
<i>Shleshaka</i>	<i>Sandhi</i>	<i>Sandhi</i>

Acc to Ash .Hridaya –

Uras is considered as the *Vishesha Sthana* of *Kapha* since it is the seat of *Avalambaka Kapha* which supports all the other sites of *Kapha* by its *Ambu karma*⁶.

Acc to Ach Sushruta –

Amashaya is considered as *Vishesha Sthana* for *Kapha*, and it is the seat for *Kledaka Kapha* which supports other *Kapha Sthana* by *Ambu karma*⁷.

AIMS AND OBJECTIVES:

To understand *Kapha* and its subtypes in relation to modern physiology.

MATERIALS AND METHODS:

The Ayurveda texts referred to in this study are *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hri-*

daya and *Sanghraha* with commentaries, modern medical books and research articles.

DISCUSSION

Avalambaka Kapha-

The *Sthana* of the *Avalambaka Kapha* is *Uras* (Chest). It has the function of supporting the *Trika* (meeting point of three structures) with its own *Virya*. According to *Dalhana*, *Trika* is the site where the *Shira*(head) and 2 *Bahus*(shoulders) meet. It also supports *Hridaya* with *Anna virya* and other subtypes of *Kapha* through *Ambukarma*. It can be correlated to the Blood plasma, Lymphatics, Pericardial fluid, pulmonary surfactant and pleural fluid. The root for the nourishment of the body is through the food, wa-

ter and oxygen which is circulated throughout the body through blood. The systems primarily involved are the Cardiovascular and Respiratory. The proper functioning of these organs requires the optimum amount of Pericardial, pleural fluid and fluid surfactant. The main function of the fluids is to provide lubrication for the smooth functioning of the heart and lungs⁸. Also, the source for the formation of these fluids is blood plasma and is drained out by the lymphatics⁹. Since these fluids also contain a major amount of WBC cells, they thus have antimicrobial action. Thus, ultimately the nutrients acquired by the food that enter the circulation form source for the fluids in the body and hence it nourishes all the other *Kapha* too.

Kledaka Kapha

Kledaka Kapha is located in *Amashaya*¹⁰. For proper digestion of the food the *Doshas* situated in the *Amashaya* that is *Kledaka Kapha*, *Pachaka Pitta* and *Samana Vata* is important just like that of the fire, water and air for the rice to cook. This implies the importance of *Kledaka Kapha*. It can correlate to the mucous in the gastric secretion. The mucous secreted is important for the proper digestion of the food and it also protects the inner lining of stomach from the acidic nature of gastric juice.

Bhodaka Kapha

This *Kapha* is seated in the tongue and has the function of taste perception¹¹. Can be compared to the Taste buds which help in the perception of taste. The taste buds are found on three types of papillae of the tongue, as follows.

1. The circumvallate papillae, which form a V line on the surface of the posterior tongue, each papilla contains many taste buds (up to 100).
2. The fungiform papillae are round and are situated over the flat anterior surface of the tongue near the tip. Each papilla contains a moderate number of taste buds (up to 10).
- 3 The foliate papillae are small and conical shape situated over the dorsum of the tongue; each papilla contains a smaller number of taste buds (very few). Each taste bud contains about 40 modified epithelial cells. Cells of the taste buds are divided into 4

groups- Type 1, 2, 3 and 4; where 1 and 4 are supporting cells and 3 is taste receptor cells¹². Additional taste buds are positioned on the palate, and a few are found on the tonsillar pillars, on the epiglottis, and even in the proximal oesophagus¹³. After the food is taken the watery portion of saliva mixed with food particles which helps in lubrication, swallowing. These tastes are sensed through at least 13 chemicals receptors found in taste cells of tongue. Taste also depends on the physical and chemical properties of the food. These taste buds perceive the taste of all substances after dissolving in saliva¹⁴.

Shleshaka Kapha

The one that resides in the joints and supports all the joints is *Shleshaka Kapha*¹⁵. Joints are a complex structure formed by two or more bones. The stability of the joint and its smooth functioning depends upon the synovial fluid covering it along with the ligaments attached to it. The ligaments are composed of dense fibrous bundles of collagenous fibres. Also, the composition of synovial fluid is Hyaluronan, lubricant, proteinase, collagenases and it is produced as an ultra-filtrate of blood plasma¹⁶. Thus, *Shleshaka Kapha* helps in the proper functioning of the joints and can be correlated to the synovial fluid and ligaments surrounding the joints.

Tarpaka Kapha

The *Tarpaka Kapha* is situated in the *Shira* (head), and it does the nourishment of all the sense organs¹⁷. Cerebrospinal fluid (CSF) is a clear, colourless liquid that protects the brain and spinal cord from chemical and physical injuries. CSF provides an optimal chemical environment for accurate neuronal signalling. Even slight changes in the ionic composition of CSF within the brain can seriously disrupt production of action potentials and postsynaptic potentials. CSF is the medium through which nutritive substances and waste materials are exchanged between blood and brain tissues¹⁸. Aqueous humour is a thin fluid present in front of the retina. It fills the space between the lens and cornea. Aqueous humour maintains the shape of eyeball, maintains the intraocular pressure, provides nutrients, oxygen and electrolytes to avascular structures, and removes the metabolic end prod-

ucts. The endolymph and perilymph in the internal ear play a role in the generation of auditory signals. Supporting cells are columnar epithelial cells of the mucous membrane lining the nose. The supporting cells surround about 50 gustatory receptor cells in each taste bud. They provide physical support, nourishment and electrical insulation for the olfactory and gustatory receptors respectively. Thus, *Tarpaka Kapha* can be correlated to CSF, Aqueous humour, Perilymph, Endo lymph, supporting cells and mucous cells of nose, supporting cells in tongue¹⁹.

Kapha Dosha in the body has properties like *Snigdha*, *Sheeta*, *Guru*, *Mandha*, *Shlakshna*, *Mruthsna* and *Sthira*. All these above properties explain the function of physical support, heaviness, sliminess, lubrication to the body. There are 5 subtypes of *Kapha*- *Avalambaka*, *Kledaka*, *Shleshaka*, *Bodhaka* and *Tarpaka*. Each one with specific locations and functions. Firstly, all the fluids mentioned above, that is, pericardial, pleural, CSF, aqueous humor, perilymph, endolymph, and synovial fluids, are majorly formed by the blood plasma, and their function is to provide support and lubrication, which justifies their *Snigdha* and *Shlakshna*, *Mandha Guna*. They are rich in fat and protein molecules, which are heavy molecules. This justifies the *Guru* nature of *Kapha*. The fluids also contain WBCs which have antimicrobial action, and which ultimately drain into the lymphatics. This also suggests the role of *Kapha Dosha* in *Vyadhikshamathva*. Ligaments, supporting cells provide mechanical support and maintain the structure of the specific region.

CONCLUSION

At the cellular level, *Kapha* can be explained as the one that helps to maintain the shape of the cell and cell organelles. It isn't easy to correlate it to any specific system of the body. *Kapha* can be considered as –

1. All the fluids in the body.
2. A medium for the transportation of the components in the body.

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