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Review Article

PHYSIOLOGY OF VOMITING – A PANCHABHOUTHIK UNDERSTANDING

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ABSTRACT

The body is described as the modified form of *Mahabhutas* hence the description of the identity of the individual & the universe relates to *Mahabhutic* composition only. The multitudes of the human features are ascribed to the proportion of different *Bhutas* each of different nature. The major function of *Prithvi Mahabhuta* is it improves the size by solidifying the body parts, *Jala Mahabhuta* confluences the body tissues, *Agni Mahabhuta* is responsible for metabolic activities, *Vayu Mahabhuta* divides and differentiates the cell and tissues, *Akasha Mahabhuta* increases the quantity by forming cavities.

The solid and tough structures like organs and at microscopic level and other cellular components are the attributes of *Prithvi Mahabhuta*. The liquid portion present inside the systems i.e. intracellular fluid, secretions from structures which helps in lubrication & moistening, vomitus liquid portion volume which is the triggering factor for reflex can be considered as the attributes of *Jala Mahabhuta*. The *Agni Mahabhuta* can be considered as neurotransmitters that are secreted for the initiation & continuation of vomiting process. The process of movement of vomitus from lower part of the gut to exterior, systemic control of vomiting, transmission of nerve impulse & vomitus can be considered as the function of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is differentiation & movement. The space present inside various organs and various channels present for the passage of vomitus can be attributed to *Akasha Mahabhuta*.

Keywords: *Panchamahabhuta*, vomiting, *Shareera*, *Kriya*.

INTRODUCTION

The individual is an epitome of the universe. All the material & spiritual phenomenon of the universe are present in the individual. Similarly all those present in the individual are also contained in the universe¹.

Originating in cosmic consciousness, this wisdom was intuitively received in the hearts of the ancient scholars. They perceived that consciousness was energy manifested into the five basic principles or elements. Man is microcosm of the nature and so the five basic elements present in all matter also exists within each individual. Thus out of the womb of the five elements, all matter is born. The five basic elements exist in all matter. Water provides the classic example: - the solids of iced water are manifestation of the *Prithvi Mahabhuta* (earth principle). Latent heat in the ice (*Agni*) liquefies it, manifesting into *Jala Mahabhuta* (water principle). And then eventually it turns into steam expressing the *Vayu Mahabhuta* (air principle) the steam disappears into *Akasha* or space². *Bhuta* is that which is not born out of something, but out of which something is born. It is the material cause of substances

in the world. When we say *Bhuta* we mean that subtle level of existence, where as *Mahabhuta* refers to gross level of existence³. *Panchikarana* is the process through which invisible *Bhutas* combine with each other and form the visible *Mahabhutas* in such a way that all *Bhutas* are present together in each *Drisya Bhuta* in varying degrees of predominance. Thus in the physical world everything is a combination of *Pancha Mahabhutas* & we cannot see them independently⁴.

Thus the five basic elements *Akasha Vayu, Teja, Jala And Prithvi* are present in one substance. This proves that all five elements are present in all matter in the universe⁵. Visualization of the identity of the individual with the universe paves the way for salvation. The body is described as the modified form of *Mahabhutas* hence the description of the identity of the individual & the universe relates to *Mahabhutic* composition only. The multitudes of the human features are ascribed to the proportion of different *Bhutas* each of different nature.

Vomiting is always preceded by nausea. Nausea is unpleasant sensation which induces the desire for vomiting. It is characterized by secretion of large amount of saliva containing

more amount of mucus. Strong involuntary movements in the GI tract which start even before actual vomiting. These movements intensify the feeling of vomiting. This condition is called retching (try to vomit) and vomiting occurs few minutes after this. Beginning of antiperistalsis, which runs from ileum towards the mouth through the intestine, pushing the intestinal contents into the stomach within few minutes. Velocity of the antiperistalsis is about 2 to 3 cm/second. Deep inspiration followed by temporary cessation of breathing. Followed by Closure of glottis. Upward and forward movement of larynx and hyoid Bone, Elevation of soft palate. Contraction of diaphragm and abdominal muscles with a characteristic jerk, resulting in elevation of intra-abdominal pressure. Compression of the stomach between diaphragm and abdominal wall leading to rise in intragastric pressure. Simultaneous relaxation of lower esophageal sphincter, esophagus and upper esophageal sphincter. Forceful expulsion of gastric contents (vomit) through esophagus, pharynx and mouth. Movements during act of vomiting throw the vomitus (materials ejected during vomiting) to the exterior through mouth. Some of the movements play important roles by preventing the entry of vomitus through other routes and thereby prevent the adverse effect of the vomitus on many structures. Such movements are: Closure of glottis and cessation of breathing prevents entry of vomitus into the lungs, Elevation of soft palate prevents entry of vomitus into the nasopharynx, Larynx and hyoid bone move upward and forward and are placed in this position rigidly. This causes the dilatation of throat, which allows free exit of vomitus⁶.

Vomiting is a reflex act. Sensory impulses for vomiting arise from the irritated or distended part of GI tract or other organs and are transmitted to the vomiting center through vagus and sympathetic afferent fibers. Vomiting center is situated bilaterally in medulla oblongata near the nucleus tractus solitarius. Motor impulses from the vomiting center are transmitted through V, VII, IX, X and XII cranial nerves to the upper part of GI tract; and through spinal nerves to diaphragm and abdominal muscles⁷.

AIMS AND OBJECTIVES

To critically analyze the *Panchabhauthik* understanding of physiology of vomiting.

MATERIALS AND METHODS

The *Bruhat Trayi* were scrutinised regarding the references for the *Guna* and *Karma* of the *Panchamahabhuta*. Later, physiologico-anatomical aspects of the physiology of vomiting were studied from modern physiology books. Later, supportive correlation was done between *Ayurvedic* and modern views to build valid and reliable hypothesis regarding the *Panchabhauthika* relation to the various anatomical and physiological aspects of vomiting

DISCUSSION

The individual *Mahabhutas* will be having *Bhavas*. The *Bhavas* of *Akasha Mahabhuta* is audition, auditory apparatus, lightness, minuteness, separation, face, neck and lips. The *Bhavas* of *Vayu Mahabhuta* are touch, touch senses, dryness, inspiration, tissue configuration, vitality, apana region, motor

function of body. *Tejah Mahabhuta Bhavas* are vision, visual apparatus, splendor, pitta, digestive power and heat and growth of body. The *Bhavas Of Jala Mahabhuta* are taste, taste organ, coldness, softness, confluence, viscous, humidity, kapha, meda, rakta, mamsa, shukra. The *Bhavas* of *Pritvi Mahabhuta* are smell, olfactory organ, heaviness, stability and statuette⁸.

The major function of *Prithvi Mahabhuta* is it improves the size by solidifying the body parts, *Jala Mahabhuta* confluences the body tissues, *Agni Mahabhuta* is responsible for metabolic activities, *Vayu Mahabhuta* divides and differentiates the cell and tissues, *Akasha Mahabhuta* increases the quantity by forming cavities. These result in complexity, delightedness or richness, energy, movement, cavitations/perforations in the body⁹.

The solid and tough structures like organs and at microscopic level and other cellular components are the attributes of *Prithvi Mahabhuta*. The liquid portion present inside the systems i.e. intracellular fluid, secretions from structures which helps in lubrication & moistening, vomitus liquid portion volume which is the triggering factor for reflex can be considered as the attributes of *Jala Mahabhuta*. The *Agni Mahabhuta* can be considered as neurotransmitters that are secreted for the initiation & continuation of vomiting process. The process of movement of vomitus from lower part of the gut to exterior, systemic control of vomiting, transmission of nerve impulse & vomitus can be considered as the function of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is differentiation & movement. The space present inside various organs and various channels present for the passage of vomitus can be attributed to *Akasha Mahabhuta*.

CONCLUSION

The solid and tough structures like organs and at microscopic level and other cellular components are the attributes of *Prithvi Mahabhuta*. The liquid portion present inside the systems secretions from structures which helps in lubrication & moistening, vomitus liquid portion volume can be considered as the attributes of *Jala Mahabhuta*. The *Agni Mahabhuta* can be considered as neurotransmitters that are secreted for the initiation & continuation of vomiting process. The process of movement of vomitus from lower part of the gut to exterior, systemic control of vomiting, transmission of nerve impulse & vomitus can be considered as the function of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is differentiation & movement. The space present inside various organs and various channels present for the passage of vomitus can be attributed to *Akasha Mahabhuta*.

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