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Review Article

PANCHABHOUTHIK UNDERSTANDING ON PHYSIOLOGY OF DEFECATION

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ABSTRACT

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 universe. The body is described as the modified form of *Mahabhuta* as 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 present in defecation process like rectum, anal canal, nerves & controlling centre can be considered as the attributes of *Prithvi Mahabhuta* at the level of physiology of defecation. The liquid portion present inside the cells lining the gastro intestinal system i.e. intracellular fluid and also secretions from mucosal cells can be considered as the attributes of *Jala Mahabhuta*. The fluid portion secreted which helps in lubrication, movement & moistening of feces can be considered as the attributes of *Jala Mahabhuta* at the level defecation physiology. The *Agni Mahabhuta* at level of defecation physiology can be considered as the various neurotransmitters that are secreted for the systemic control of initiation, continuation & stoppage of defecation process. The process of movement of food from rectum to anal canal can be considered as the function because of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is movement. The movement of various secretions from their respective organs is due to the influence of *Vayu Mahabhuta* since the movement is the function of *Vayu Mahabhuta*. The process of cell division, differentiation of food bolus to feces can be considered as the function because of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is differentiation. The space present inside various organs and various channels present for the secretions, passage of feces can be attributed to *Akasha Mahabhuta*.

Keywords: *Panchamahabhuta*, defecation, *Shareera*, *Kriya*, Physiology

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 *Drisy 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 universe.⁵

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. Voiding of feces is known as defecation. Feces is formed in the large intestine and stored in sigmoid colon. By the influence of an appropriate stimulus, it is expelled out through the anus. This is prevented by tonic constriction of anal sphincters, in the absence of the stimulus.

Mass movement drives the feces into sigmoid or pelvic colon. In the sigmoid colon, the feces is stored. The desire for defecation occurs when some feces enters rectum due to the mass movement. Usually, the desire or defecation is elicited by an increase in the intrarectal pressure to about 20 to 25 cm H₂O. Usual stimulus for defecation is intake of liquid like coffee or tea or water. But it differs from person to person⁶.

Act of defecation is preceded by voluntary efforts like assuming an appropriate posture, voluntary relaxation of external sphincter and the compression of abdominal contents by voluntary contraction of abdominal muscles. Usually, the rectum is empty. During the development mass movement, the feces is pushed into rectum and the defecation reflex is initiated. The process of defecation involves the contraction of rectum and relaxation of internal and external anal sphincters. Internal anal sphincter is made up of smooth muscle and it is innervated by parasympathetic nerve fibers via pelvic nerve. External anal sphincter is composed of skeletal muscle and it is controlled by somatic nerve fibers, which pass through pudendal nerve. Pudendal nerve always keeps the external sphincter constricted and the sphincter can relax only when the pudendal nerve is inhibited.

When rectum is distended due to the entry of feces by mass movement, sensory nerve endings are stimulated. Impulses from the nerve endings are transmitted via afferent fibers of pelvic nerve to the defecation center, situated in sacral segments (center) of spinal cord.

The center in turn, sends motor impulses to the descending colon, sigmoid colon and rectum via efferent nerve fibers of pelvic nerve. Motor impulses cause strong contraction of descending colon, sigmoid colon and rectum and relaxation of internal sphincter. Simultaneously, voluntary relaxation of external sphincter occurs. It is due to the inhibition of pudendal nerve, by impulses arising from cerebral cortex⁷.

AIMS & OBJECTIVES

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

MATERIALS AND METHODS

The *Bruhat Trayi* were scrutinised regarding the references for the *Guna* and *Karma* of the *Panchamaha bhuta*. Later, physiologico-anatomical aspects of the physiology of defecation 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 defecation.

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 present in defecation process like rectum, anal canal, nerves & controlling centre can be considered as the attributes of *Prithvi Mahabhuta* at the level of physiology of defecation. The liquid portion present inside the cells lining the gastro intestinal system i.e. intracellular fluid and also secretions from mucosal cells can be considered as the attributes of *Jala Mahabhuta*. The fluid portion secreted which helps in lubrication, movement & moistening of feces can be considered as the attributes of *Jala Mahabhuta* at the level defecation physiology. The *Agni Mahabhuta* at level of defecation physiology can be considered as the various neurotransmitters that are secreted for the systemic control of initiation, continuation & stoppage of defecation process. The process of movement of food from rectum to anal canal can be considered as the function because of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is movement. The movement of various secretions from their respective organs is due to the influence of *Vayu Mahabhuta* since the movement is the function of *Vayu Mahabhuta*. The process of cell division, differentiation of food bolus to feces can be considered as the function because of *Vayu Mahabhuta* since the function of *Vayu Mahabhuta* is differentiation. The space present inside various organs and various channels present for the secretions, passage of feces can be attributed to *Akasha Mahabhuta*.

CONCLUSION

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 space.

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REFERENCES

1. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 325.
2. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 326.
3. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 325.
4. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 326.
5. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 138.
6. Sembulingam K, Essentials of medical physiology.6th edi. New Delhi: Jaypee publications; 2012, 278-9.
7. Sembulingam K, Essentials of medical physiology.6th edi. New Delhi: Jaypee publications; 2012, 278-9.
8. Acharya JT. Susrutha Samhita with Nibandha sangraha commentary of Dalhana. Reprint ed. Varanasi (India): Chaukambha Sanskrit Sansthan; 2009. p. 364.
9. Acharya JT. Susrutha Samhita with Nibandha sangraha commentary of Dalhana. Reprint ed. Varanasi (India): Chaukambha Sanskrit Sansthan; 2009. p. 363.

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