CRITICAL ANALYSIS ON DERIVATION OF VATA DOSHA WSR PHYSIOLOGY OF DEFCATION REFLEX

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ABSTRACT

Background: The word Vata derived from the verbal root ‘Va’ meaning is Gati and Gandhana. Vata is responsible for Gati (movement), Jnana (knowledge or perception) and Prapti (obtaining or receiving).

Aims & Objectives: To critically analyze the physiological points emphasized in the derivation of Vata Dosha by considering the defecation reflex.

Materials & Methods: The Ayurvedic classics were scrutinized regarding the references for derivation of Vata Dosha. Later, physiologico-anatomical aspects of the defecation with reference to reflexes were studied from modern physiology books. Later, supportive correlation was done between Ayurvedic and modern views to build valid and reliable hypothesis regarding derivation of Vatadosha in relation to the various anatomical and physiological aspects of the reflexes.

Discussion & Conclusion: Physiological importance is emphasized in the word Gamana, Gnyana, Prapti. Prapti refers to physiology of receiving the impulses from the stimulus and receiving the motor response by the effector organ. Gamana refers to movement of impulses from sensory nerve to defecation center and from defecation center to effector organ even it signifies the motor response generated in rectum, anal canal and sphincters. Gnyana refers to perceiving of the sensory impulses and generating appropriate response by the defecation center.

Keywords: Gamana, Gnyana, Prapti, defecation, physiology.

INTRODUCTION

An individual is an archetype of the universe. All the material & phenomenon of the universe are present in an individual. Similarly all those present in the individual are also enclosed in the universe¹.

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.

The balances of Dosha are presents the healthy state and imbalance will cause various diseases. In normalcy Doshas will be performing their own functions and individual Doshas will be having their own specific sites. The word Vata derived from the verbal root ‘Va’ meaning is Gati and Gandhana. Vatais responsible for Gati (movement), Jnana/knowledge or
posture, voluntary relaxation of external sphincter and the by somatic nerve fibers, which pass through pudenda l nerve. Exte rnal anal sphincter is composed of skeletal muscle and it is controlled by the defecation center. The process of defecation involves the contraction of rectum and relaxation of internal sphincter. Simultaneously, voluntary relaxation of external sphincter 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. Usually stimulus for defecation is intake of liquid like coffee or tea or water. But it differs from person to person². 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. Vata (knowledge or perception) and Prapti (obtaining or receiving). Physiological importance emphasized in the word Prapti of Vata Dosha derivation can be understood as Receiving (Prapti) of the sensory stimulus by the sensory nerve endings present in the rectum. Physiological importance emphasized in the word Gamana of Vata Dosha derivation can be understood as 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. Physiological importance emphasized in the word Gnyana (knowledge, perception) of Vata Dosha derivation can be understood as Receiving the impulses and generating the appropriate response by the defecation center. Physiological importance emphasized with reference to motor part in the word Gamana of Vata Dosha derivation can be understood as strong contraction of descending colon, sigmoid colon and rectum and relaxation of internal sphincter. Simultaneously, voluntary relaxation of external sphincter occurs.

AIMS AND OBJECTIVES

To critically analyze the physiological points emphasized in the derivation of Vata Dosha by considering the defecation reflex.

MATERIALS AND METHODS

The Ayurvedic classics were scrutinized regarding the references for derivation of Vata Dosha. Later, physiologically-anatomical aspects of the defecation with reference to reflexes were studied from modern physiology books. Later, supportive correlation was done between Ayurvedic and modern views to build valid and reliable hypothesis regarding derivation of Vatas in relation to the various anatomical and physiological aspects of the reflexes.

DISCUSSION

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.

CONCLUSION

Physiological importance is emphasized in the word Gamana, Gnyana, Prapti mentioned in the derivation of Vata Dosha. Prapti refers to physiology of receiving the impulses from the stimulus and receiving the motor response by the effector organ. Gamana refers to movement of impulses from sensory nerve to defecation center and from defecation center to effector organ. It signifies he motor response generated in rectum, anal canal and sphincters. Gnyana refers to perceiving of the sensory impulses and generating appropriate response by the defecation center.

REFERENCES


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