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CRITICAL ANALYSIS OF VYANA VATA IN TERMS OF SHAREERA KRIYA

Kamath Nagaraj

[1]Assistant. Professor, Department of Shareera Kriya, Karnataka Ayurveda Medical College, Manglore – 575006; Karnataka, India

ABSTRACT

Dosha, Dathu, Mala together form the basis of the body. The balance of these entities represents the healthy state and imbalance will cause various diseases. In normalcy, Dosha will be performing their own functions and individual Dosha will be having their own specific site. There are five types of Vata namely Prana, Udana, Vyana, Samana, Apana. The Visesha Sthana of Vyana Vata is said as Hrudhaya and also said to moves throughout the shareera. The functions of Vyana Vata is said to be forcefull ejection of Rasa from Hrudhaya and make it circulate throughout the body and is also responsible for various movements like flexion, extension, opening and closure of eyelids. The active site of Vyana Vata is Hrudhaya. It makes the circulation of blood possible by controlling the heart. Vyana makes blood to get forcefully ejected out of the heart and makes it circulate throughout the body. The sympathetic and parasympathetic control of heart should be included under Vyana Vata. The functions of Somatic nervous system can also be ascribed to Vyana Vata since it is responsible for various movements like flexion, extension, opening and closure of eyelids. The functions of Vyana Vata can be related to the functions of autonomic and somatic Nervous system.

Keywords: Vyana, Vata, Shareera, Kriya, Automic, Somatic, Nervous system

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 resent in the individual are also contained in the universe. [1]

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 space.[2]*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

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say *Bhuta* we mean that subtle level of existence, where as *Mahabhuta* refers to gross level of existence.[3]*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 independently. [4]

Dosha, Dathu, Mala together form the basis of the body.[5] The balance of these entities represents the healthy state and imbalance will cause various diseases.[6] In normalcy, *Dosha* will be performing their own functions and individual *Dosha* will be having their own specific site. By mentioning the various *Sthana* of the each *Dosha* the different function performed by individual *Dosha* in different sites has been emphasised. The sub-types of *Dosha,* its location and function have also been mentioned. [7]

Regarding the *Sthana* of various *Dosha* authors have different opinion. Later authors have added some more *Sthana* of *Dosha*. For example, ears among the location of *Vata*; umbilicus, eyes and skin among the location of *Pitta*; *Kloma*, nose, tongue among the location of *Kapha*.[8]

There are five types of *Vata* namely *Prana, Udana, Vyana, Samana, Apana.* The *Visesha Sthana* of *Vyana Vata* is said as *Hrudhaya* and also said to moves throughout the shareera. The functions of *Vyana Vata* is said to be forcefull ejection of Rasa from Hrudhaya and make it circulate throughout the body and is also responsible for various movements like flexion, extension, opening and closure of eyelids.[9]

Brief Physio- anatomical understanding of the Autonomic and somatic nervous system is necessary to understand physiology of *VyanaVata*.

The peripheral nervous system (PNS) includes all nervous tissue outside the CNS. Components of the PNS include cranial nerves and their branches, spinal nerves and their branches, ganglia, and sensory receptors. The PNS may be subdivided further into a somatic nervous system (SNS) , an autonomic nervous system (ANS) and an enteric nervous system (ENS).

The SNS consists of sensory neurons that convey information from somatic receptors in the head, body wall, and limbs and from receptors for the special senses of vision, hearing, taste, and smell to the CNS and motor neurons that conduct impulses from the CNS to skeletal muscles only. Because these motor responses can be consciously controlled, the action of this part of the PNS is voluntary. The ANS consists of sensory neurons that convey information from autonomic sensory receptors, located primarily in visceral organs such as the stomach and lungs, to the CNS and motor neurons that conduct nerve impulses from the CNS to smooth muscle, cardiac muscle, and glands. Because its motor responses are not normally under conscious control, the action of the ANS is involuntary. The motor part of the ANS consists of two branches, the sympathetic division and the parasympathetic division. With a few exceptions, effectors receive nerves from both divisions, and usually the two divisions have opposing actions. For example, sympathetic neurons increase heart rate, and parasympathetic neurons slow it down. In general, the sympathetic division helps support exercise or emergency actions, so-called “fight-or-flight” responses, and the parasympathetic division takes care of “rest-and-digest” activities.[10]

Heart rate is maintained within normal range constantly. It is subjected for variation during normal physiological conditions such as exercise, emotion, etc. However, under physiological conditions, the altered heart

rate is quickly brought back to normal. It is because of the perfectly tuned regulatory mechanism in the body. Heart rate is regulated by the nervous mechanism, which consists of three components: Vasomotor center, Motor (efferent) nerve fibers to the heart, Sensory (afferent) nerve fibers from the heart. Vasomotor center is formed by three areas: Vasoconstrictor area, Vasodilator area, Sensory area. Vasoconstrictor area increases the heart rate by sending accelerator impulses to heart, through sympathetic nerves. It also causes constriction of blood vessels. Stimulation of this center in animals increases the heart rate and its removal or destruction decreases the heart rate Vasodilator area decreases the heart rate by sending inhibitory impulses to heart through vagus nerve. It also causes dilatation of blood vessels. Stimulation of this area in animals with weak electric stimulus decreases the heart rate and stimulation with a strong stimulus stops the heartbeat. When this area is removed or destroyed, heart rate increases. Sensory area receives sensory impulse via glossopharyngeal nerve and vagus nerve from periphery, particularly, from the baroreceptors. In turn, this area controls the vasoconstrictor and vasodilator areas.

Heart receives efferent nerves from both the divisions of autonomic nervous system. Parasympathetic fibers arise from the medulla oblongata and pass through vagus nerve. Sympathetic fibers arise from upper thoracic (T1 to T4) segments of spinal cord.

Vagus nerve is cardioinhibitory in function and carries inhibitory impulses from vasodilator area to the heart. Stimulation of sympathetic nerves increases the rate and force of contraction of heart. The effect depends upon the strength of stimulus.[11]

Movements of the body depend upon different groups of skeletal muscles. Various types of movements or motor activities brought about by these muscles are: Execution of smooth, precise and accurate voluntary movements; Coordination of movements responsible for skilled activities; Coordination of movements responsible for the maintenance of posture and equilibrium. Voluntary actions and postural movements are carried out by not only the simple contraction and relaxation of skeletal muscles but also the adjustments of tone in these muscles. The execution, planning, coordination and adjustments of movements of the body are under the influence of different parts of nervous system, which are together called motor system. Sensory system of the body also plays a vital role in the control of movements. Spinal reflexes are responsible for most of the movements concerned with voluntary actions and posture. Stimulation of receptor activates the motor neuron in spinal cord, leading to the contraction of muscle innervated by spinal motor neuron. Apart from these reflexes, signals for voluntary motor activities are also sent from different areas of the brain, particularly the cerebral cortex to spinal motor neurons. Coordination and control of movements initiated by cerebral cortex depends upon two factors: Feedback signals from proprioceptors in muscle and other sensory receptors; Interaction of other parts of brain such as brainstem, cerebellum and basal ganglia. Neuronal circuits between these parts of nervous system, which are responsible for the motor activities are called the motor pathways. cerebellum and basal ganglia. Thus, the motor system includes spinal cord and its nerves, cranial nerves, brainstem, cerebral cortex. [12]

Depending upon the location or termination, motor pathways are divided into two categories, namely the lateral system or pathway and the medial system or pathway. Lateral motor system is phylogenetically new and medial motor system is old. Functions of lateral motor system: Lateral corticospinal tract activates the muscles of distal portions of limbs and regulates the skilled voluntary movements Rubrospinal tract facilitates the tone in the muscles, particularly the flexor muscles. Corticobulbar fibers of lateral system are concerned with the movements of

expression in lower part of face and movements of tongue.

Functions of medial motor system: Anterior corticospinal tract is responsible for the maintenance of posture and equilibrium. Fibers of corticobulbar tract belonging to medial motor system, innervating muscles of upper part of trunk are involved in the maintenance of posture and equilibrium. Fibers innervating muscles of jaw and face are involved in the movements of chewing and movements of eyebrow. Vestibulospinal tract is concerned with the adjustment of position of head and body during angular and linear acceleration. Pontine fibers of reticulospinal tract facilitate the tone of extensor muscles and regulate the postural reflexes. However, medullary fibers of this tract inhibit the tone of the muscles involved in postural movements. Tectospinal tract is responsible for the movement of head in response to visual and auditory stimuli.[13]

AIMS & OBJECTIVES

To critically analyze the *Vyana Vata*

MATERIALS & METHODS

The *Bruhat Trayi* were scrutinised regarding the references for the *Guna* and *Karma* of the *Vyana Vata*. Later, physiologico-anatomical aspects of the autonomic and somatic nervous system were studied from modern physiology books. Later, supportive correlation was done between *Ayurvedic* and modern views to build valid and reliable hypothesis regarding *Vyana Vata* in relation to the various anatomical and physiological aspects of the Autonomic and somatic nervous system.

DISCUSSION

Dosha, Dathu, Mala together form the basis of the body. The balance of these entities represents the healthy state and imbalance will cause various diseases. In normalcy, *Dosha* will be performing their own functions and individual *Dosha* will be having their own specific site.

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Vagus nerve is cardioinhibitory in function and carries inhibitory impulses from vasodilator area to the heart. Stimulation of sympathetic nerves increases the rate and force of contraction of heart. The effect depends upon the strength of stimulus. This Autonomic control of heart rate by in turn regulating the force of ejection of blood from the heart and also controlling the circulation of blood to different parts of the body can be related to forceful ejection of Rasa from *Hrudhaya* and make it circulate throughout the body which is the function of *Vyana Vata*

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body are under the influence of different parts of nervous system, which are together called motor system. Sensory system of the body also plays a vital role in the control of movements. Spinal reflexes are responsible for most of the movements concerned with voluntary actions and posture. Stimulation of receptor activates the motor neuron in spinal cord, leading to the contraction of muscle innervated by spinal motor neuron. Apart from these reflexes, signals for voluntary motor activities are also sent from different areas of the brain, particularly the cerebral cortex to spinal motor neurons. This function of somatic nervous system can be related to various movements like flexion, extension, opening and closure of eyelids, which is the function of *Vyana Vata.*

CONCLUSION

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The functions of *Vyana Vata* can be related to the functions of autonomic and somatic Nervous system.

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CORRESPONDING AUTHOR:

Kamath Nagaraj [1]

[1]Assistant. Professor, Department of Shareera Kriya, Karnataka Ayurveda Medical College, Manglore – 575006; Karnataka, India

Email id: nagaraj.kamath1989@gmail.com

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