

CONCEPT OF VATA VS NERVOUS SYSTEM REVIEW ARTICLE**Dr. Vishal Sharma***

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ABSTRACT

Ayurveda, a natural system of medicine, originated in India more than 5000 years ago. Ayurveda translates to Knowledge of Life. Ayurveda is an alternative medicine system with historical roots in the Indian subcontinent. Dosa, Dhātu and Mala are the root of our body. If they are in equilibrium state in our body they are called as Dhātu because they support our body in normal condition. If they are imbalanced (increase or decrease) then they are called as Dosa. Doshas are the biological forces which work through the medium of Dhātus and Malas. Dhātus and Malas are the structural units and the Doshas are the energy forms. Hence the Doshas are called Asrayees (indwelling forces) and Dhātus, Asrayaas (seats). "Dooshayanti iti Dosa" Those which vitiate the other substances after getting themselves vitiated. So Dosa are called Shakty Roopa Dravyas. Even though the Māṣiṣkā is the main seat of

Vata, an order to conduct the two main functions of Vata as explained in its definition i.e. Gati (Motor functions) and Gandhana (Sensory functions). The Vata has to move through the Vata Vaha Srotas to reach the target organ throughout the body. These channels are divided into two varieties depending upon the Motor or Sensory functions. Every concept of Ayurveda is postulated and explained on the basis of Panchmahabhūtas, Doshas represent the existence of Panchmahabhūtas in our body. And everything is Panchmahabhautika in the universe. Vata one among the three basic humors play a major role in both health and disease condition. Most of the Vata disorders discussed in the Ayurveda are being diagnosed under neurological disorders in modern science. Hence in this study we have to understand the physiological activities of Vata with special reference to nervous system.

KEYWORDS: Ayurveda, Vata, Dosa, Nervous system, Humors, Parāṇā, CNS.

INTRODUCTION

In the holistic approach, Ayurveda is based on three fold management known as Tridosha theory consisting of Vata, Pitta, and Kapha Dosas, which form the base for all the Ayurvedic concepts concerned with Physiology, Pathology, Diagnosis, Prognosis, Medicine, and Therapeutics. Each Dosa is represented by different physical and physiological characteristics. Basically Vata, Pitta and Kapha constitute three regulatory systems respectively controlling input/output, turn over and storage making them universal properties of all living systems. Vata is the most important among Tridoshas, because Pitta, Kapha, all the Dhatus and Malas are Pangu i.e. are like lame animal and as and how the Vata carries them to different places, they move accordingly like a cloud that is carried away to different places by the wind. The supremacy of Vata is explained by all our Acharya. For example it said “Pittam phangu Kapham pangu phangavo Mala Dhatavah Vayuna yatra niyante tatra gacchati meghavat”. Vata is described as “AYU” (LIFE), BALA (STRENGTH), DHAATA (CREATOR), PRABHU (MASTER) and the entire universe itself is dwelling under the control of Vata. Vata is the only principle having predominance of Vayu Mahabhuta and its main lakshanas is Gati (movement) and Gandhana (perception of knowledge), which are generally attributed to nervous system of contemporary science exhibiting the same functional properties.

MATERIAL AND METHODS

References related to proposed title are collected from classical books of Ayurveda, various publications; books, library, modern books, Samhita, research papers, internet, webinars, and proceeding of seminars related to topic are collected.

REVIEW OF PHYSIOLOGY OF VATA (Vataswarupa)

Vata is the key for machine (YANTRA) – the living body and its mechanism (TANTRA). It is of five type's viz. Parana, Udana, Samana, Vyana and Apana. It is the initiator of all psychosomatic activities. It is the controller and activator of mind. Employer of all the indrias. It is the moderator of all the sense objects. It is the organizer of all the tissues of the body. It is the Sandhana Kara (coordinator of different parts of the body). It is the organizer of phonation. It is the basis for touch and sound. Basis for sense organs of hearing and touch. It is the root for Harsh (pleasure) and Utasaaha (enthusiasm). Stimulates the Jatharagni (digestive power). Dries up the excessively secreting Doshas. Eliminates the excretory products. Forms spaces and cavities required for the big and small Srotas. Forms different

shapes and curves that are required for all the organs of the embryo. Vata is the representation and symbol of life.

PHYSIOLOGICAL FUNCTIONS AND QUALITY OF VATA

Utasaaha, Ucchvasa, Nihswasa, Chesta, Sama dhatu gati, Sama Moksha.

Due to vitiated state Chakrapani explains it is not possible to enumerate all the qualities or actions of Vata. Only few have been explained some of these can be sustained through direct perception. The most important qualities of Vata are Corporality, instability, self originated, minute. Vata control over the function of the body by swift action, strength, capacity to vitiate other and independent movement. The other qualities of Vata are Ruska, Laghu, Sheet, Khara, Mobility, Roughness, Clearness, and Penetrating. Though Vata is all pervading and responsible for all activities in our body, basing on the names, site and functions. The sharir Vata is divided into five categories.

1 PRANA VATA: the word Parana is related derived from the Sanskrit Root “AN” with a prefix “PRA” means to Breath, to live. Therefore Parana Vata is responsible for all vital functions like Respiration, Heart rate and other vegetative functions which are essential for human existence. According to Charka and Vagbhata the Parana Vata is located in the Head and it is stated to traverses in the region of oral cavity, nose, neck and chest for the proper control and discharges its function. The function like Buddhi Dhahran, Mano Buddhi, Tatwa ganana, Dhahran, grahan, Indrias Buddhi (sensory knowledge), smriti (memory), anubhava (knowledge through direct perception, inference, analogy, verbal testimony). The anatomical relation with nervous system is Hippocampus, Cerebral cortex, Wernick’s area, Physical cortex, anterior thalamic group. In physical function site of working memory helps in complex intellectual activities like judgment, decision making. Helpful in retention and recollection of recent and past experiences. Chital Dhahran function holds the function of Manas (indriabhigraha-initiates and withdraws indrias (ganana- intellectual, karma-motor) from perceiving their objectives and sends information to Atma. The anatomical relation with nervous system is Heschl’s gyrus, post central gyrus, insular cortex, amygdale, cerebellum, hypothalamus dorso medial associating with prefrontal gyrus, primary motor area, pre motor area, basal ganglion. Physiological function like Intellectual, Emotional, Motor activities. The other function like Hridaya dharana, Swasa, Anna pravesana, Sneezing, Spitting, Belching. The anatomical relation with nervous system neuron lie in dorsal motor nucleus of the Vagus nerve in reticular formation of medulla, Caudal hypothalamus, Vasomotor centre in medulla,

Respiratory centers located in the reticular formation of Brain stem, Nuclei of Trigeminal, Facial, Gloss pharyngeal, Vagus, other parts of brain, Sneezing centre of CNS stimulated by impulses through Trigeminal nerve from the nasal mucosa, nucleus of facial nerve located in caudal portion of Pons, Medulla (a poly synaptic visceral reflex).

2 UDANA VATA: Acharya Vagbhatta considered that the Parana Vata is essential for the life and Udana Vata is for the strength of a person. If they are disturbed there is danger both life and strength. The Vata is situated in Uras (chest) and circulates between Nostrils, neck and nabhi. The function of this Vata is Production of speech, work, mental stamina, zeal, colour and smriti. The function again can be divided into: Psychic and physiological, Urja and smriti are psychic and speech, prayatana, Bala, Varna is physiological. Anatomical relation with nervous system the motor fibers of the cranial nerves- facial, gloss pharyngeal, Vagus and accessory, hypoglossal as a whole can be compared to cervical plexus as it is formed by these along with nerves arising from vertebrae C1-C4.

3 VYANA VATA: Vata is concerned with motor and sensory function of body. The life of an individual is dependent upon these two functions. The movements may be visible or invisible. Both Parana and Udana are concerned with some of visible and invisible movement in the body. The locomotion is a visible movement and it is one of the most important functions of living body. All movements are effected through the contraction and relaxation of the muscles. Vyana Vata controls the voluntary movement of the body. This Vata is situated in the Hridaya and circulates in the whole body through the medium of Rasa Dhatu. The function of Vyana Vata are Rasa samvahana (circulation of blood), Gamana (walking), Apakshepana (downwards movements of limb), Utkshepana (elevation), Nimesha and Unmesha (movements of eye lids). Vyana Vata is described as Mahajwa (highly powerful). Therefore it keeps the Rasa Dhatu in circulation (yugapath) i.e. continuously throughout the life. Anatomical relation with nervous system CNS, motor nerve supply to the cardiac muscle, Thoraco lumber sympathetic division and vasomotor centre of ANS and parasympathetic, Hypothalamus, sympathetic division and vasomotor centre of ANS.

4 SAMANA VATA: some of the important function of a living being to ingest food , digest and assimilate to maintain the life and also the mass of the body. This Vata is situated near the Jatharagni and moves about all through the Kostha (Alimentary canal). The function of Samana Vata are Annagrahanam (reception of food that is swallowed), Agni sandhukshana (stimulation of stomach and intestines to secrete digestive juices), Annapachana (digestion

indirectly through digestive juices), Sara kitta vibhajana (sorting of digested, undigested, indigestible and excretory parts of ingested food materials), Facilitates absorption of digested food and excretion of waste products, control over Sweda Vaha, Dosa Vaha and Udakavaha Srotas. Anatomical relation with nervous system Vagal, Gloss pharyngeal supply of the GIT (gastrointestinal tract), ENT (enteric nervous system), Sympathetic, Para sympathetic supply of glands of digestive system, myo enteric plexus, parasympathetic innervations of colon, Aurbach's plexus of Autonomic nervous system.

5 APANA VATA: The Vata which has a special tendency to moves downwards is called Apana Vata. This Vata is situated in the pelvic and sacral regions. It circulates through Shroni (pelvic region), Vasti (bladder), Medra (penis and vagina in case of females) and OOru (thighs). The function of Apana Vata is Shukra Pravrutti (ejaculation of semen), Artava Pravrutti (menstruation and ovulation), Pureesha Pravrutti (evacuation of bowels), Muttra Pravrutti (micturation) and Garbha nishkramana (parturition-labor). Anatomical relation with nervous system sensory fibers of the pelvic nerves, motor branches of the pudendal nerve, pontine, spinal regions which can be considered as indrias Dhahran of (Parana), parasympathetic supply, sympathetic supply in L1-L2 level, nerve supply to the muscles of uterus and abdomen, hypothalamus, plexus of autonomic nervous system.

DISCUSSION

From the above discussion of Parana Vata in broad sence it can be compared to the nervous system anatomically and physiologically as its main seat in murdha and controls almost all the physical and physiological functions by generating development of speech is associated with neuro-physiological phenomenon of learning which occurs as an integrated outcome of motivation, emotion, and sensory adaptation in terms of performance of indivisual. According to Ayurveda it is physiological phenomenon acts through Manas and Buddhi. A stimulus may reach higher centers in brain from the kantha, Uras, nabhi sthanas through Udana because of its nature and a stimulus done through Parana Vata and a motor impulse may be sent to muscles of the above said sthanas where the movement of the muscles occurs due to Vyana Vata. Hence it is clear that Udana Vata performs its functions through the combined functioning of Parana and Vyana Vata. All these functions are directly or indirectly due to voluntary or involuntary movements of the muscles caused by their contraction and relaxation all over the body which can be understood by poly synaptic reflex arc with a single stimulus. A study of the functions of the five sub division of Vata indicates the following

points. That the sensation from all sense organs are regulated or modified if necessary by Parana Vata during their projection towards Manas and Vata associated with the Buddhi. Some of the physiological functions conducted by Udana Vata association with Parana Vata. That the involuntary phase of the respiration is controlled by Parana Vata and Udana Vata. That both Parana and Udana Vata exert dual control over the Heart- thoracic heart- Dhamanis etc Vascular system, that the production of verbal expression is under the control of Udana Vata, that the majority of the functions of Kotha particularly those of the Anna Vaha and Purish Vaha Srotas which are under neural control are conducted by Samana and Apana Vata, that the Parana, Udana and Apana control the functions prescribed to the parasympathetic divisions of autonomic nervous system.

The following statement indicates the relative levels in the CNS of the functional regions an aspect of the five sub divisions of the Sharir Vata certain overlapping may be noticed.

1 PRANA VATA: Reticular formation from the brain stem to medulla oblongata with connections to the brain and higher centers.

2 UDANA VATA: reticular formation from the lower part of Pons to the spinal cord up to the cervical segments 3, 4, 5 and upper thoracic segments 2 to 6. The motor nuclei of the facial, glossopharyngeal, Vagus, spinal, accessory, hypoglossal nerves are also included.

3 VYANA VATA: the anterior lateral horn cells of the spinal cord T1 TO L2 or L3 segments.

4 SAMANA VATA: myo enteric and sub mucous plexus of the GIT track.

5 APANA VATA: Lower lumbar and sacral segments of the spinal cord.

As a whole all the five sub divisions of vata are facilitated by coordination of Parana and Vyana Vata with each other. Hence these can be correlated to basic functions of nervous system.

CONCLUSION

On the basis of above study it can be concluded that the functional seat of Vata is the nervous system. Functions of Vata can be partially correlated with the functions of nervous system. It is necessary to understand that nature of the organ to reach the connection. It may be noticed that the nervous system the important seat of Vata with the predominant qualities of Vayu and Akasha Mahabhuta has the qualities which are apposite to those of vata. Even though the nervous tissue contains 70-80% of water, the chief characteristic is the high cholesterol and phosphorous lipid content as between Gray and White matter that contains more lipids. Therefore it is clear that substances possessing qualities of apposite of those described for

Vata i.e. Ruskā gūṇa enter into the composition of the structures which are basic to the manifestation of this somatic humor. As well as there is a need of further research to evaluate in detail the decrease and increase phases of Vata in both physiological and pathological aspects for the betterment of mankind. Even though the nervous system is the main seat of Vata an order to conduct the two main functions i.e. motor and sensory function. The Vata has to move through the Vata-vāha Srotas to reach the target organ throughout the body. They conduct the motor functions this originated in the Buddhi and finally terminates in the connective organs or other muscles. Sensory functions conduct the cognitive organs and finally terminate in the respective Buddhi. Mind is the controller of all the sensory organs, both these channels pass through the mind because the function of conative and cognitive organs extends to the mind. So the vata is the originator of every function in the body.

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