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A REVIEW ARTICLE ON PRANA VATA IN AYURVEDA AND MODERN ASPECT

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ABSTRACT

Vata is most important factor among 3 doshas which is responsible for controlling all the movements of the body. Among 5 varities of vata Prana vata is situated in the head region and travel Urah, Kantha. A detail discussion on vata has been regarded in the chapter of vata kalakaliya chapter of sutra Sthana of Charaka samhita. Here a comparison has been brought between the loka Vayu (physical Vayu) and sharira vata (biological vata) one of the tri humors. Both of these derived from the panchmahabhoota and the predominance of Akash and Vayu mahabhoota. The result both are invisible. Therefore their presence can be detected and recognized only by their action and function. A study of this indicates their importance, power and influence in their respective fields. Although three somatic humors are equally important & essential in the body. Mutually balancing one & other to maintain an equilibrated steady state in spite of many disturbing influences operating on them, vata the somatic humor appers to be the primary motive force in the body. The statement of Acharya Bhela that life exists as long as vata lasts in the body. Movement in the indicative of the presence of life. Chesta includes the entire activity of the living body, even actions that are suitable enough in their latent stage, vata is the cause of such movement. The biological vata is not only mobile but also capable of keeping pitta, kapha, Dhatu and mala motion, this statement of Sharangdhara indicates that vata can influence other doshas and the constituents of the body. Vagbhatta statement regarding the function of vata are it control over function of the body as swift action, strength, capacity to vitiates other factors, independent movement. A large no of

disease caused by its vitiation like the Loka Vayu, the Shaarir vata is also known by several synonyms as Pavan, Marut, Anil, Sameer etc.

KEYWORDS: Prana, Vata, Mastisk, Shaarir, Manas, Buddhi, Life, Sense organs.

INTRODUCTION

The Manas is known as ubhayatamaka because the function of cognative and conative organs extent in the Manas. Therefore sankalapa, mind determines the actions of these two set of senses. The ultimate cogence of an object and the consequent direction for the request action is vested with the intellect (Buddhi). Therefore the Shaarir vata may be considered as the executive hand of the actions as decided and directed by intellect and mind. Depending upon the importance and level of action, all the functions of Shaarir vata which are directly related to the brain and the leading channels may be conventually grouped into 5 categories by dividing vata into 5 sub divisions with separate seat and functions. In the course of functioning there is certain amount of overlapping in the option of these 5 sub divisions. The Prana vata is considered as the life of human beings. The word Prana is derived from the Sanskrit root "AN" with a prefix "PRA" AN means to Breath, to Live. Therefore the Prana vata is responsible for all vital functions as respiration, heart rate, and other vegetative functions which are essential for human existence. The definition "**pranyati it prana**" also indicates the relationship of Prana Vaha Srots with respiratory tract.

LOCATION OF PRANA VATA

According to Acharya Charaka and Vagbhatta; the Prana vata is located in the head and it is stated to traverse, in the regions of oral cavity, nose, neck and chest, for the proper control and discharge its function. Acharya Sharangdhara mentioned 2 places as seat of Prana vata as HRIDYA and NABHI. The Hridya formed of three Sanskrit root "HRI", "THE", or "YA". The meaning of these words are respectively receiving, giving away, moving or maintaining a continuous activity of the 2 earlier functions. The word AYAN also indicates a path or opening, therefore the word HRIDYA signifies only the function as aspect of an organ which continuously receives and which gives away a substance acting as path or conductor, for the movement for that substance. The identification of an anatomical organ namely depends on the substance which is being received, giving away and the organ this continuously functioning for this purpose. In the light of above explanation there are certain organs in the body which are qualify to be called as HRIDYA like the THORASIC, HEART, LUNGS, CENTRAL NERVOUS SYSTEM etc. since the water freely moves in and out even every

cell can be designated as the HRIDYA. Sites of prana vata are Murdha (head), Ura (chest), Kantha (throat), Jivha (tongue), Asya (mouth), Nasika (nose). According to Chakarpani that the term Adi after the term Aahara in charaka (28/6) implies deglutination, dharana of ingested food. Chakarpani describes the chest as both for Prana and Udana Vayu.

The meaning of word NABHI are the NAVE OF THE WHEEL, CENTRE, FOCUS, CHIEF POINT, LEADER, HEAD. The 1st meaning explains the shape of the Nabhi. The nave of the wheel is the place where the spokes and hub meets. The spokes may be considered to be either conversing or diverging from it. Therefore Nabhi may be visualized as chief of flat organ, exactly in the shape of nave of wheel and spokes. A predimentional organ in the shape of MACE because any cross-section of the mace appears like the nave of the wheel. A mace has a central elongated body with the spikes which either converged on it or diverge from it in all directions. In the present context in the view of the multiferous activities of the organs, it is responsible to exact letter shape. The remaning 2 meaning of nabhi indicate the importance of its functions. So, the Nabhi is the seat of Prana vata, assume to have been located in a strategically central point in the head (BRAMHANDRA) an important Marma (sadyopranahara marma) which is in the central nervous system, the factory of nerve impulses is carefully graded. The statement of Acharya Sharangdhara the location of Prana vata is further clarification to the Acharya Charaka and Vagbhatta.

FUNCTION OF PRANA VATA: Prana vata conduct both sensory and motor functions. Regarding the sensory it maintains the function of the sense organs by the way of sense regulation of sensory input and conciousness i.e. initation and maintains wakefulness. Therefore Prana vata is considered with arousual of the entire organism, electing the person maintanning attention. Regarding the vasomotor function “DHARAN OF INDRIYA” heart and circulatory system, Manas, Buddhi, Indriyas, sense organs and Dhamanies. The word DHARAN is derived from the Sanskrit root n”DHRI”, which means to exist, live, continuous to live, survive, to hold in check, restrain, holding, bearing, preserving, sustaining, protecting etc. therefore the Prana vaha not only maintains the functions of Hridya, Dhamanis, indriyas etc. but also sustains and protects them, in other words it prevent their functions to go out of hand for the development of the body. Prana vata assist the different vitalizing principles of the body in discharging their functions to life and contributes to the general sustains like respiration, sneezing, deglutination. This function is due to the normal parastylic movement of upper GIT tract and Speeching and belching. These functions are to be considered as those

of an organ or part of an organ having a shape of NABHI located in the brain. The functions like respiration maintains the actions of the heart and circulatory system, deglutination, spitting out, sneezing, belching and functional maintenance of the sensory organs are peripheral in nature and shows the impulses have to leave the "Mastiska", through the central nervous system for their proper exestuation. On the other hand, The functions like the regulation of the sensory input and conciousness which belong to Manas and Buddhi are central in character and respective impulses reach the respective higher centers. Here it may be noticed that to reach the different organs which are controlled by the Prana vata, the respective channels either converge or diverge on the region/seat of Prana vata, giving this organ the shape of nave of the wheel. Based on the regions of movement and actions of Prana vata, some scholars have sub divided the Prana vata as:- SIRA SATHITHA PRANA VATA which is located in the head region & URA SATHITHA PRANA VATA which is located in the lower region up to chest. The Sira sathith Prana may regularly move down into the chest through the neck to join the Ura sathith Prana vata in carrying out the act of respiration. This indicates the co-ordinated and combined action by both the divisions to maintain the vital function of the respiration. Even though located in the chest the (U.S.P.) goes up to the oro-nasal regions through the throat to carry out the acts of sneezing, belching etc. respiration comprises of 2 acts as inspiration i.e breathing in air & expiration i.e. breathing out. According to Acharya Chakarpani inspiration is PRANA & expiration is APANA. This indicating that former is related to life while commenting on PRANAVAHASROTAS Acharya Chakarapaani was stated that this related intimately to a special air known as PRANA.

Therefore it is clear that special air known as PRANA (O2) is breathe to the respiratory system during the act of inspiration. Acharya Sharangdhara has described this act as a very special form of Prana Vata. The Prana vata touching the interior of HRYDA- thoracic heart-moves out through the throat to drink the VISHNU PADA AMRITAM-Nectar or AMBER, it enters the body again to nourish the whole body & to stimulate the digestive fire. For the better understanding of this function the words AMRIT & PIYUSH which are stated to be a discrepancy in the step wise explanation of the respiratory act and the participation of the heart in this process it is quite clear that Sharangdhara has indicated the intake of O2 through the respiratory act and the sustain of life and digestive fire- possibly by Dhatwagni through this action of PRANA VATA.

Other functions of Prana Vata it preserves the functioning of Buddhi (intelligence), Hridya (heart), Indriyas (sense organs), Chitta (mind), also perform function such as Sthivana (spitting), Kshavathu(sneezing), Udagara (belching), Nishvasa (respiration), Anna pravesha (deglutition).

RESPIRATORY PHYSIOLOGY IN AYURVEDA: The respiratory physiology is mentioned by Acharya Sharangdhara in the using context as Pranavaha srotas, prana vata, udanavata, etc. while considering the concept of Srotas to describe the respiratory mechanism one should have to explore the details of Pranavaha Srotas. According to Acharya Charaka HRIDYA and MAHASROTAS (alimentary canal), according to SUSRUTA HRIDYA AND Rasavahi dhamanis (blood vessels). According to Chakarpani prana vaha Srotas mula- Hridya and Mahasrotas.

Pranavaha sroto dusti lakshanas are Atisrushta swasa (too long breath), Atibaddha swasa (too restricted breathing), Kupita (aggrevated breathing), Alpalp (shallow), Abhikshna(frequent breath), Sashabada ,sashula (associated with sound &pain).by the above mentioned etiological factors the vata gets aggravated in the pranasrotosang disturbs the kapha situated in the urah Pradesha producing avrodha of Pranavata and five types of HIKKA & SHWASA.

SHWASANA PRAKRIYA: The swasana prakriya is given by sharangdhara as Prana Vayu is located in Hridya and Nabhi, its function is to give life to Jivatma and to Jathargani also, it also regulates the process of respiration. He explained a procedure in brief but in a very unique form. Prana Vayu from umbilical region, after touching Hrutkamala (thorax region-heart) goes out through Kantha. Then it reaches Vishnuupada and after drinking Amber, Piyush (oxygen), punarayati vegatah (speedily come back). Then this Prana Vayu carries out the function like prinana, jivanam and stimulates Jatharanala or Jatharagni (stimulation of digestive fire, means stimulation of oxidation process). The above statement is also supported by Acharya Sushruta by the concept of bahya Prana & Abhayantra Prana:i.e external respiration and internal respiration. In Yajurveda air in the form of Prana Vayu Apana Vayu moves through Nasika (nostrils). The word Nabhi, explains the participation of diaphragm and abdominal muscles in the process of ventilation. The direction of expiration from abdomen is in the upward direction, through chest and throat region. In inspiration Prana Vayu situated in Murdha (head, respiratory centers), give stimulation to all the muscles involved in process of respiration. It also stimulates diaphragm and abdominal muscles. Due to its activity the chest cavity broadens and inspiration occurs Nishvasa by Prana Vayu.

According to Chakarpani prana Vata having Ucchvasa (expiration) action in the ten Dhamanies originating from heart & their action. Here Prana and Apana Vayu represent the Ucchavasa and Nishvasa respectively. According to Sharangdhara lungs are the seat of Udana Vayu. Udana is responsible for expiration and responsible for vaka praviti and pratayana. The word sprstvahrtakamalantaram denotes the gaseous exchange at the level of Alveoli in the lungs after that the impure air comes outside through the kantha. The word hrtakalanatram denotes the location in the thoracic cavity (lungs, heart) and Amber Piyush denotes oxygen which is used for the gaseous exchange.

RESPIRATION: This comprises of 2 process i.e. inspiration and expiration. Inspiration is an active process produced by the contraction of the Inspiratory muscles. During inspiration thoracic cage enlarges and lungs expand so that air enters the lung easily. Primary Inspiratory muscles are the diaphragm, which is supplied by Phrenic nerve (c3 to c5) and external intercostals muscles, supplied by intercostals nerves (t1 to t11). The accessory inspiratory muscles are Sternocleidomastoid, scalene, anterior serrate, elevators of scapulae and pectorals are the accessory muscles. In expiration during quite breathing is passive process in the sense that there is no contraction of the expiratory muscles, but the elastic properties of the system return the lungs & chest wall (diaphragm) to their resting position and during inspiration the normal automatic process of breathing is completely depend upon the rhythmic discharge of impulses from the respiration centre located in the medulla oblongata in the reticular formation. It is comprised of 2 areas one group of cells in the dorsal region of the medulla is associated chiefly with inspiration known as Inspiratory centre. The cells of this centre have the property of intrinsic periodic lining and they are responsible for the basic rhythm of the ventilation. The other group of cells in the Ventral area, ventral respiratory group is mainly for inspiration. This expiratory area is quricient during breathing however in forceful breathing. For example an exercise the expiration becomes active as a result of the activity of the excitatory cells. The activity of the Inspiratory centre is regularly control by the inhibitory action of the Nemunotoxic centre situated in the reticular formation of the upper Pons.

HEART AND CIRCULATORY SYSTEM: A discrete cardio inhibitory group of neurons lies along side the dorsal motor nucleus of the Vagus nerve situated in the reticular formation of dorsal medulla. There is no cardio- acceleratory centre in this region but the stimulation of the caudal hypothalamus increase the heart rate through the sympathetic nerves. The vasomotor centre is situated in the floor of the 4^{th} ventricle of the medulla in the reticular

formation. It extends from the lower part of the Pons to the apex & forms a diffused network of neurons. There are particularly 2 areas. Lateral pressure area which causes vasoconstriction & raise up blood pressure. Medial depresses area which causes vasodilatation and fall of blood pressure so the dilatation is caused by inhabitation of vasoconstrictor tone specifically vasodilatation fibers being involve the vasomotor centre exhibits inherent automatically, and continuous to discharge to maintain arterial blood pressure through vasoconstrictions.

DEGLUTINATION AND OTHER ACTIONS: The initiation of swallowing is usually subject to voluntary control, but it is essentially reflex action. Saliva is necessary for normal swallowing stimulation of the pharynx and back of the tongue initiate swallowing. This is a linked change of reflexes that is food & fluids softly across the glottal lib over the trachea to the stomach. Swallowing being with singulase carry in the Glossopharyangeal and Vagus nerve to the nucleus of the solitary tract and neighboring reticular formation. This region is also known as swallowing centre. The act of swallowing once the primary esophageal is parastylic wave is initiated, is independent of extrinsic nerves. The nervous control of the muscle which participates in the act of swallowing is through the motor neurons of trigeminal nerve, facial nerve, hypoglossal nerves. The spitting is affected by the muscles of cheek, tongue, lips. The muscles are supplied by the facial nerves, the motor nucleus which is situated near Cordal portion of palms. The spitting out is also closely associated the reticular formation of the medulla oblongata. SNEEZING is the reflex response initiated by the stimulation of the pain fibers in the trigeminal nerve and integrated in medulla oblongata. This response is due to sneezing irritation of the nasal mucosa. BELCHING is the expulsion of gas from the stomach by the mouth. It is a reflex response, in which the breath is held in mid inspiration, where in the diaphragm is contracted. The muscle of the abdominal wall contract and because the chest is held in a fixed position, the contraction increases intra abdominal pressure. The esophagus & the gastric cardiac sphincter relax, reverse paralytic begins and the air from the stomach is expelled. This action is similar to the reflex response produced pre-vomiting/emesis. The above is example of the wave of visral reflex integrated in the medulla include co-ordinated and carefully timed somatic as well as visral components.

SENCE ORGANS: All nerve fibers from sense organs at one place or other pass through the reticular formation and it place an important part in the maintenance of the sensory functions. The reticular activating system, which can be stimulated by all peripheral sense organs in the

part of brain stem maintains the conscious alert state that makes perceptation possible. From the above it can be perceived that the reticular formation perhaps the anatomical structure in the MASTISK, concerned with most of the functions of PRANA VATA & its shape has to be that of NABHI or of a mace with spikes/nerve fibers both conversing on it & diverging on it in all the directions.

RETICULAR FORMATION: The brain stem also contains the reticular formation (net), net like arrangements of small areas of grey matter interspersed among threads of white matter. The reticular formation which also extends into the spinal cord and Diencephalon, has both sensory and motor functions. The main sensory function is alerting the cerebral cortex called the reticular activating system consist of fibers that project to the cerebral cortex. The reticular activating system is responsible for maintaining consciousness & for awakening from sleep. Incoming impulses from the ears, eyes & skin are effective stimulator of the reticular activating system. For example we awaken to the sound of an alarm clock to a flash or lightning or to a painful pinch because of reticular activating system activity that across the cerebral cortex. Reticular connective tissue consists of the fine integrating reticular fibers & reticulate cells, cells that are connected to each other and form a network reticular connective tissue from the stroma (supporting frame work) of certain organs and help behind together smooth muscle cell. Reticular formation also in pons, midbrain& diencephalon and function is consciousness and arousal.

CONCLUSION

In this article it can be concluded that Prana vata partially co related with central nervous system and its region in reticular formation from the brain stem to medulla oblongata with connections to the brain. Here it is found that all sensations from all sense organs are regulated or modified if necessary by the Prana vata during their projection towards Manas & thereby vata is associated with the functions of Buddhi. Some of the psychological functions are conducted by Udana vata and association with Prana vata. The involuntary phase of the Swasa kriya is controlled by the Prana vata and the voluntary phase by the Udana vata. The important vegetative function of life suspentation of which needs to death or controlled by Prana and Udana vata. That both Prana and Vyana vata exert duel control over the heart i.e. Thorasic heart & Dhamanis etc Vascular system. The function of Prana are associated with the necessary faculties required for sustaining life including respiration, swallowing, sensory organ function, mind there by governing higher intelligence. There is a need of further

research in detail of all other varieties of vata as well as vata karma, location, vriddhi, kshaya, vata vaha Srotas, guna, etc for the transparent study of vata for the scholars.

REFERENCES

1. Vd. Satyanarayana Shastri Charaka Samhita- Purvardh Varanasi: Chaukhamba Surbharti Prakashan, 2012.
2. Vd. Satyanarayana Shastri Charaka Samhita- UttaradhVaranasi: Chaukhamba Surbharti Prakashan, 2012.
3. Kaviraj Atridev gupta Asthang Hrdayam Varanasi: Chaukambha Prakashan, 2015.
4. Vd. Anantram Sharma Shushrta Samhita: Nidana Sthana, Varanasi, Krishnadas Academy, 1995.
5. Yadavji Trikamji Acharya, Charaka Samhita Ayurveda Deepika Vyakhyan, Chaukhamba Surbharti Prakashan, Varanasi, 2013.
6. Smt. Shailja Srivastava, Sharangdhar Samhita, hindi Commentary, Chaukhambha Orientalia, Varanasi, 2011.
7. Pt. Hari Sadashiv Shastri Paradakara Bhisagacarya, Astangahrdaya Commentary, Chaukhamba Prakashan Sansthana, Varanasi, 2012.
8. Jadavji Trikamji. Sushruta Samhita of sutra sthana with nibandhasangraha commentary of Dalhanacharya. Sutra Sthana. 15/41 Chawkhamna Sanskrit Sansthan, Varanasi.
9. K R Srimurtamurthay, Vagbatas Ashtanga Hrudhyam text English 9th edition volume 1 english translation, Sutra Sthana 1/11.
10. K. Sembulingum. Essentials of medical physiology. 6th edition, jaypee brothers, medical publishers.