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EFFECT OF PRANA AND VYANA VAYU IN NCDs W.S.R. TO CARDIOVASCULAR SYSTEM

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ABSTRACT

Non-communicable diseases have tendency to become chronic diseases and are the result of a combination of physiological, environmental behavioral and genetic factors. The main types of NCDs are cardiovascular diseases, cancers, chronic respiratory disease, diabetes and rheumatoid disease. Non communicable diseases kill 40 million people each year, equivalent to 70% of all deaths globally. Cardiovascular diseases account for most NCD deaths or 17.7 million people annually. Evidence shows that 15 million of all deaths attributed to NCDs occur between the ages of 30 and 69 years. Over 80% are estimated to occur in low- and middle-income countries because of stress, Physical inactivity and excess use of alcohol, tobacco and unhealthy diets that can lead to cardiovascular diseases. There are five types of *Vata Dosha* described in *Samhitas*. Out of which the *Vata* which is located in head region is called *prana vayu*. It controls the function of cardiovascular system, sense organs, psychological activities, reflex activities and intellectual function. All these functions are of brain and brain stem. The site of action of *Vyana Vata* is heart. It helps in the circulation of blood by controlling the heart. Now a days stress has become a prevalent part of people's life style. This Stress can cause hypertension by increased tone in sympathetic nervous system to produce Catecholamine that increase blood pressure. These functions are happened when *Prana Vayu* covers the *Vyana Vayu* and causes cardio vascular diseases. A variety of treatments to manage stress have been found effective in reducing cardio vascular diseases.

Keywords: *prana vayu, vyana vayu*, *avarana,* Stress, NCDs,

INTRODUCTION

Non communicable diseases persist for a long period and it is not caused by any infectious agents. Prevalence of cardiovascular diseases among NCDs is the leading cause of death in present era. Stress is one of the most common complaints of patients. Stress is a physical, mental or emotional factor that causes mental tension. Chronic stress causes many medical conditions including psychological conditions such as depression and anxiety and also medical problems like irritable bowel syndrome, high blood pressure and diabetes etc. So stress management is needed badly in prevention of NCDs. Along with stress

there are other factors like sedentary mode of life-style, pressure of target oriented work, processed food, excessive use of pungent substances, excessive worry, fear, and terror is the factors which aggravate the *Vata dosha* and leads to cardiovascular diseases. In *Ayurved* role of *Prana vayu* and *Vyana vayu* is very much important because it controls autonomic functions of heart. Disturbance of *prana vayu* and *vyana vayu* causes improper function of heart which leads to cardiovascular diseases[1].

NON COMMUNICABLE DISEASES:

Non communicable diseases tend to be of long duration which is the result of a combination of physiological, environmental behavioral and genetic factors. According to WHO, the main four types of NCDs are cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. In each year 40 million people are killed through non communicable diseases which are equivalent to 70% of all deaths globally. Most NCD deaths are due to cardiovascular diseases or 17.7 million people annually. Evidence shows that 15 million of all deaths attributed to NCDs occur between the ages of 30 and 69 years. Over 80% are estimated to occur in low- and middle-income countries because of stress, Physical inactivity and excess use of alcohol, tobacco and unhealthy diets that can lead to cardiovascular diseases[2].

STRESS AND HYPERTENSION:

In these days stress has become a prevalent part of people's life style. Stress is a physical, mental or emotional factor that causes bodily or mental tension. Stresses can be external (from the environment, psychological, or social association) or internal (illness or from a medical procedure). Stress can initiate the fight or flight response. Lucini et.al (2007) suggested that the person who is chronic exposure to stress have an influence on increased blood pressure. Results showed individual who had stronger responses to stressor tasks were 21 % more likely to develop blood pressure increase when compared to those with less strong response[3]. The sympathetic system is especially strongly activated in many emotional states. For instance in the state of rage, which is elicited to a great extent by stimulating the hypothalamus, signals are transmitted downward through the reticular formation of the brain stem and into the spinal cord which causes massive sympathetic discharge. This Stress is responsible for elevation of blood pressure for instance during extreme fight the arterial pressure sometimes rises by as much as 75 to 100 mm Hg within a few second. This is called the alarm or stress response and it provides an excess of arterial pressure[4].

VATA: THE INITATING AND CONTROLLING FACTOR:

All functions of nervous system in human beings are represented through *Vata* in *Ayurveda*. It is the initiating and controlling factor which is responsible for movement. In general function of *vata* are to control and co ordination of different part of the body, initiation of all movement, all activities of sense organ, regulation of psychological process and control of respiration, transmission of different sensation, production of speech, secreto motor functions in the gut, expulsion of wastes from the body. *Vata* has been divided into five types namely *Prana, Udana, Vyana, Saman* and *Apana*. Out of these the *vata* which is located in head region is called *prana vayu*. It is responsible for the cardiovascular functions, sense organs, psychological activities, reflex activities and intellectual function. All these functions are of brain and brain stem. The active site of *vyana vata* is heart. It makes the circulation of blood possible by controlling the heart[5].

AVARANA:

Avarana is one of the basic fundamental concepts in *Ayurveda*. According to *Ayurvediya Shabdakosha, Avarana* means *ava rodha gati nirodha* means i.e. obstruction to the normal *gati* of *vata*. All the three *doshas* circulate all over the body through channels. Out of three, *vata* having specific property enters the minutest channels of the body. In spite of getting occlusion by *pitta, kapha, aam, vata* is capable of scattering the *pitta, kapha* to different body parts and causes diseases by favoring *dosha dushya*

samurchhana in occluded *srotas*. *Vata Dosha* is getting aggravated by many factors. *Avarana* is one of them[6].

Total 44 types of *avarana* have been described in *ayurveda*. The various type of *vata* moves in different direction as per its location and function. So the function of one gets obstructed by other. This is called *annyonyavarana* of *vata.* A slight variation in the path of one *vayu* may affect the other one which results alteration of the functions as well as diseases. Aggravated subtype of *vata* occlude mutually and responsible for the indication of twenty types of *annyonyavarana*[7].

If *vata* occluded by another powerful *vata,* then the occluded one i.e. *avarya* loses its functions. Similarly *avaraka* is one which occludes the other and there will be increase in its functions. It is also accepted that if *avarya* is stronger than *avaraka* then increased symptoms of *avarya* observed and vice versa[8].

RELATIONSHIP BETWEEN PRANA VAYU AND VYANA VAYU:

Prana vayu is situated in head region and helps in proper functioning of intellect, heart, sense organs and mind. Stress causes the disturbance in the normal functions of *prana vayu* and also does not reach to its active site. *Vyana vayu* which is located in heart continuously eject the blood out of the heart and distributes it all over the body. When the disturbed *prana vayu* covers the *vyana vayu* there is disturbance in the autonomic functions of *vyana vayu*. This Stress can cause hypertension by increased tone of sympathetic nervous system to produce catecholamine's that increase blood pressure.

The causative factor for *rasvaha sroto dusti* are intake of heavy and cold substance, excess intake of unctuous substance, consumption of excess food, intake of wholesome and un wholesome food together and excessive worry. So there occur diseases of *rasvaha srotas* like *hridroga, jwara, prameha* etc[9].

DISCUSSION

Non communicable diseases are spreading day by day like viruses. Out of which cardiovascular disease is the major cause of mortality in India. To reduce the mortality of CVDs we should understand about the causes and pathogenesis of cardiovascular diseases explained in ancient science. Sedentary mode of lifestyle, pressure of target oriented work, processed food, excessive use of pungent substances, excessive worry, fear, terror, use of incompatible food is the factors which aggravate the *vata dosha* which vitiates the *rasa dhaatu* that leads to cardiovascular diseases. *Vata* is the controlling factor in our body. *Dhaatukshyaya* and *Aavarana* are the two factors which cause aggravations of *vata dosha*. Due to *mithya aahar* and *vihaar prana vata* is aggravated. So there is variation in the function and pathway of *prana vayu*. *Prana vayu* occludes the *vyana vayu* due to which *vyana vayu* (the *avritta*) loses its function. So the function of *vyana vayu* gets hampered which leads to various cardiovascular diseases.

Discoloration of skin, fainting, fever, cough, dyspnoea, thirst, unconsciousness, vomiting, nausea, pain and anorexia are the symptoms arise in heart diseases. In the present era individuals are overloaded with stress, tension, anxiety and lack of sleep which ultimately affect the heart and cause CVDs. Hence it is very essential to manage these mental factors by prescribing *Medhya Rasayan* and Yogic practice as described in ancient literature. To protect the heart from disease one should avoid the cause of affliction of mind. One should regularly take diet, drugs and behavior that are beneficial to the heart for the formation of *ojas* and keeping the vessel unblocked and also makes serenity of mind and knowledge. *Svedan, Virechanam, Vaman, and Basti* therapies are considered to be beneficial in curing *hridroga*. Contaminated water, incompatible food, food containing hot, pungent and citric properties, edibles that are heavy to digest is strictly prohibited for the persons suffering from *hridroga*.

CONCLUSION

According to Ayurveda *Sira, hridaya and basti* are the three *marmas* of the body. Among all the *marmas, bheda* (injury) to these 3 *marmas* (*hridaya, shiras* and *basti*) leads to sudden death. Its injury leads to severe disease manifestation. Hence, these should be especially protected against external injury and *vatadi doshas*. These *marmas* have to be protected especially from *anila* (*vata*), as *vata* is the prime factor or cause for the aggravation of *pitta* and *kapha* and also it is the cause of *prana* (life) and is best treated by *basti*. Hence, there is no treatment better than *basti* to maintain the *marma*. *Avarana* is the key factor in the mechanism of pathogenesis. The function of *vyana vayu* is to eject the rasa forcefully out of the heart and makes it circulate throughout the body. *Prana vayu* maintains the proper functioning of *buddhi*, *hridaya, indriya* and *chitta*. When the *prana vayu* covers the *vyana vayu*, the function of *vyana vayu* is hampered and causes cardiovascular diseases. So prana vayu and vyana vayu has an important role in cardiovascular system.

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