

Contribution of *Prana Vata* to Ascertain Lung Function Aptitude with respect to *Rakta Dhatu*

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ABSTRACT

Lung function tests are helpful to assess the functional grade of Respiratory system not only in physiological but in pathological state of affairs also. These are based on the capacity of quantity or volume of air breathes in and out in quite breathing and in forced breathing. Air in lungs is categorized in to two divisions' lung volume and lung capacity or ability. Lung capacities or aptitudes are the combination of two or more lung volumes. The notion of Pran Vayu is significant in case of respiration because Acharya Charaka says that pure blood provides the person with strength, luster & happy life because vital breath follows blood. It represents mechanism of oxygenated & deoxygenated blood & its relation with functioning capacity of Lungs. So this effort has been made to review concepts regarding functions of Pran Vayu to ascertain Lung Function aptitude.

Keywords: Prana Vayu, Lung aptitude, Pure blood.

INTRODUCTION

The lungs are merely gas switch over organs. This gaseous exchange occurs into the lungs involving inspired air and blood. The alveoli of both the lungs are synchronously crammed with air during inspiration and unfilled during expiration or cessation. ^[1] The vital sites of Prana vayu are throat and chest region (thorax), and its assorted functions are related to trachea, salivary glands, pharynx, stomach, heart and lungs. ^[2] Lung volume is the stationary volume of air taken inside the body by a person age. These are Tidal volumes, Aspiratory reserve volume, expiratory reserve volume, residual volume. ^[3] Lung Capacities are of four type's inspiratory capacity, vital capacity, functional enduring capacity, total lung capacity. ^[3] These are chief to see physiological as well as

pathological state of affairs of Lungs and Respiratory system.

Blood or Rakt Dhatu is important mediator in gaseous exchange. The direction of Prana vata is as inspiration and that of Udana Vata is contradictory means it contributes in expiration. So it is obligatory to find out role Prana Vata in deciding functional capacity of lungs related to blood because lungs are obtained from foam of blood.

METHODOLOGY

Rakta Dhatu and Prana Vata:

Rakta Dhatu:

It is acknowledged in life science i.e. in Ayurved that lungs are made from froth of blood i.e. *Rakta phenodhbhav phuphusam*. ^[4] So structurally where oxygenation and deoxygenation of blood takes place in lungs. Though Rakta or blood

is 2nd dhatu, Sushrutacharya mentioned that it is 4th essential dosh or central make up of body. [5] Blood circulation is a closed course system. Functions of Rakta dhatu- are Dhatunam Puranam i.e. Nutrition and Oxygen Supply to tissues. [6] Blood give color, sustenance to mansa and maintain life doings. [7] Decline and raise in all another dhatus is caused by Rakta. [8] By reduction of tissue due to bleeding, the agni i.e. digestive power becomes weak and vata becomes provoked. [9] Rakta kshaya means decrease of blood produces roughness of skin, craving (desire for sour & cold things) looseness of the veins etc. [10]

Prana Vata:

Vata - the impart of movement to the body (Praspadnam), the transport of vibrations or sensations of the respective sense organs (Udvahanam) the transitory of food to its proper receptacles (Puranam), the separation of excretions from assimilated food matter (Vivek), and retention and evacuation of urine or mootra and semen or shukra etc. (Dharanam), should be credited to the functions of five kinds of Vata force which support the body. [11] Sushruta samhita mentioned that, five functions of vata dosha as the word Praspadana, [12] though Dalhana has described this term as a movement being the activity of Vyana Vayu, but this should be taken as the activity of heart (Diastolic and Systolic movement) and Lungs (Inspiration and Expiration). Because of these activities give external lifesaving matter (Prana Vayu- element i.e. oxygen) to the whole body. And it should be considered as the main function of Prana vata.

Sharangdhara has described the place of Prana Vata in heart and compared it with the progression of respiration which delights (Prinyati) and maintains (Jivayana) the digestive fire when it is essential for life. [13,14] Internal Prana getting support from the external Prana (strength of the body) maintains the body composed of the five main fundamentals without resistance. [15]

DISCUSSION

Taking into consideration above functions of Vata, Prana Vayu and Rakta Dhatu it can be understood that these plays chief role in maintaining inspiration and expiration functions of lungs and its vital capacity. Because Prana and Udana vata works concurrently as inspiration and expiration works. Samana Vayu though it takes part in digestion, when Samana disturbs it affects digestion and annavaha strotas which in turn effects on Pranavaha strotas causing diseases like Shwas and kasa. Both diseases considered foundation in Amashaya (Stomach). Vyana bala is key for circulation of blood with oxygen all over tissues. Apana gati is anuloman but when it disturbs it causes difficulty in prakrut gati of Prana causes various symptoms.

Rakta dhatu is essential for oxygenation and deoxygenating of blood as inspired air is travelled through blood to the capillaries and expired carbon die oxide also passes through blood vessels into heart and lungs. So blood is medium for conveyance of Vata.

Lung Capacities are of four type's Inspiratory capacity, vital capacity, Functional residual capacity, total Lung capacity. [16] These are important to see physiological as well as pathological conditions of lungs as well as respiratory system.

Lung capacities in healthy adults [9]

Volume	Average value (liters)		Derivation
	In men	In women	
Vital capacity	4.6	3.3	IRV + TV + ERV
Inspiratory capacity	3.3	2.5	IRV + TV
Functional residual capacity	2.2	1.9	ERV + RV
Total lung capacity	5.7	4.4	IRV + TV + ERV + RV

The tidal volume, vital capacity, inspiratory capacity and expiratory reserve volume can be measured directly with a spirometer. These are the essential element of a ventilatory pulmonary function test. [17,18]

CONCLUSION

Charakacharya says that 'Prano hi Shonitam Anuvartate', means blood is indispensable intermediary for oxygenation and deoxygenation of blood and as in this progression lungs are important organs. So to see the aptitude of lungs it is essential to appraise the perception regarding functions of Rakta dhatu & Prana Vayu to ascertain lung function aptitude.

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How to cite this article: Patil VS, Bhalsing MV. Contribution of *prana vata* to ascertain lung function aptitude with respect to *rakta dhatu*. Int J Health Sci Res. 2019; 9(6):306-308.
