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Research Article

A STUDY TO EVALUATE THE EFFECT OF *CHYAVANPRASH* IN ELDERLY PEOPLE HAVING LOW VITAL CAPACITY

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ABSTRACT

Ageing is a natural process. Senescence is an expression used for the deterioration in the vitality or the lowering of the biological efficiency that accompanies ageing. Respiratory system undergoes various anatomical, physiological and immunological changes with age. Lungs mature at age 20 to 25 years, and then it decreases about 200 to 250cc every 10 years from 20 years of age. Among elderly health problems, respiratory conditions make 16.1% of the complaints. *Chyavanprash,* one of the foremost *Rasayana* is specifically indicated for elderly people. This would be the remedy for improving the respiratory system functioning in aged people, if it could prove the effect in enhancing the vital capacity. Individuals of age 50 years and above were screened by using computerized spirometer. From these, 67 individuals with reduced vital capacity were selected for the study. Spirometric assessment was done. After the assessment, *Chyavanprash* was administrated. Dosage was fixed as 10gm for a period of 1 month. After 1 month spirometric assessment was done. This shows that there exists a positive response in vital capacity to *Chyavanprash. Rasayana, Brmhana, Tridoshahara*, and *Balya* properties evoked a positive response in vital capacity.

INTRODUCTION

Ageing is a progressive generalized impairment of function that leads to sluggishness of the body functions those progresses with the advanced age. As age advances, several changes take place in the body, i.e., in the condition of *Dosha, Dhatu, Mala, Agni* and *Oja* level[1]. Elderly people are susceptible to several chronic diseases also. The problems of the elderly are becoming a matter of great concern as increased life expectancy.

According to Ayurveda, the lifespan of an individual is divided into three parts. These are *Balavastha, Madhyavastha* and *Vriddhavastha*. In which *Vridhavastha* or *Jirnavastha* refers to the period after 60 or 70 years [2].

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This stage characterized by deterioration in the body functions, *Dhatu*, perception power of the *Indriyas*, potency, strength, speech, etc [3]. During this phase there is predominance of *Vayu dosha*.

Srotas is the channels through which the conduction of the nutrients for the *Dhatu* is taking place regularly[4]. *Pranavaha srotas* plays a significant role in the respiratory functions at mechanical and regulatory level. *Charakacharya* mentioned that the quality and quantity of the *Dhatus* declines throughout the old age. Because of that; functions of the *Srotas* also turn to decrease along with the age.

Growth and development of the human respiratory system is essentially completed by about 18-20 years of age. Most indices of pulmonary function have been demonstrated to reach their maximum levels between the 20th and 25th year and then decline progressively with age in normal healthy adults[5]. There is also diminution in the immunological function leads to increase the risk of infections and pneumonia. The compliance of the lung rises with age due to the fall in the static elastic recoil of the lungs. The respiratory muscle strength and endurance diminishes

along with age, this also causes the reduction of values of the pulmonary function test[6].

There are strong possibilities to develop a safe and cost-effective package for geriatric care through incorporation of Ayurvedic lifestyle management, i.e., *Rasayana* therapy. *Rasayana* can bring about harmony of deranged *Dosha* in the body and prevent augmented rate of natural degeneration in the body.

Chyavanprash is classified under the category of *Rasayana*, which influences in the aging process. It is a comprehensive herbal tonic, which serves as a nutrient for healthy individuals[7]. *Chyavanprash* can be consumed in all seasons, as it contains ingredients, which are weather friendly nullifying the unpleasant effects due to extreme environmental and climatic conditions. *Chyavanprash* is made in *Amalaki* base, which is the most useful *Rasayana* for maintaining homeostasis [8].

The changes of the respiratory system in elderly people can be evaluated by spirometry. Spirometry is the basic lung function tests that measure the air that is exhaled and inhaled. It is performed to detect the presence or absence of lung disease, quantify lung impairment, monitor the effect of occupational exposures and determine the effect of medications [9].

So, with an aim to find out an effective *Rasayana* therapy for elderly people with reduced vital capacity, the present study to assess the effect of *Chyavanprash* in elderly people with reduced vital capacity was selected. The formulation selected in this condition should be applicable to both aging individual and respiratory system.

MATERIALS AND METHODS

Study Settings

The study was conducted in Govt. Ayurveda College Hospital, Kannur.

Type of Study

Study conducted was an observational study

Sampling

Population

Individual of age group 50 years and above with reduced vital capacity.

Sample

Individual of age 50 years and above attending the Kriya Sharir OPD of Govt. Ayurveda College & Hospital, Kannur, satisfying the inclusion criteria were the samples of the present study.

Sampling Technique

In this study, consecutive sampling technique was adopted.

Sample Size: 67

Prevalence of reduced vital capacity in people of age 50 years and above was found to be 60% by a pilot study conducted in Govt. Ayurveda College & Hospital, Kannur.

Using this prevalence, sample size is calculated by the formula $N = 4pq/d^2$

(P (prevalence) – 60%, q= 100- p, d=relative precision 20%)

Study Duration: 18 months

Inclusion Criteria

- Reduced vital capacity based on predicted value in computerized spirometer (<70% of vital capacity).

Exclusion Criteria

- H/o diabetes mellitus
- H/o asthma, COPD, other respiratory diseases.
- H/o cardiac problems
- Recently done surgery

Study Design

The present study was an observational type of study. The individuals of 50 years and above, who attended the Kriya sharir OPD, Government Ayurveda College Hospital, Kannur, were screened for the study. The screening was done based on spirometric evaluation of vital capacity. One bottle of 300gm of *Chyavanprash* was provided to each subject. The participants were advised to take 10gm of *Chyavanprash* daily at night after food for one month. After the completion of the intervention post assessment of the spirometric test was done again.

Ethical Consideration

The formal approval of study was obtained from institutional Ethical committee of Govt. Ayurveda College Hospital, Kannur, with reference number E2/4599/2016/ACK dated 25-05-2017 after presenting the synopsis before the same committee.

Computerised Spirometer

In this study vital capacity of the participants were assessed by using Medicaid Spiro Excel Pulmonary Function test system. Spirometry is a measure of air flow and lung volume during a forced expiratory manoeuvre from full inspiration. It is the simplest test of all respiratory functions. The reported values from spirometric tests may be measures of volume (litres) or flow (litres/second). FEV1 and VC are the most important parameters to assess the ventilator capacity, are estimated by spirometry.

Spirogram

It is the graphical representation of bulk air movement depicted as a volume-time tracing or as a flow-volume tracing. These values generated provide important graphic and numeric data regarding the mechanical properties of lungs, including airflow and exhaled lung volumes. The measurements are typically expressed in litres per second for flows. Upward deflection of the spirogram denotes inspiration and the downward curve indicates expiration.

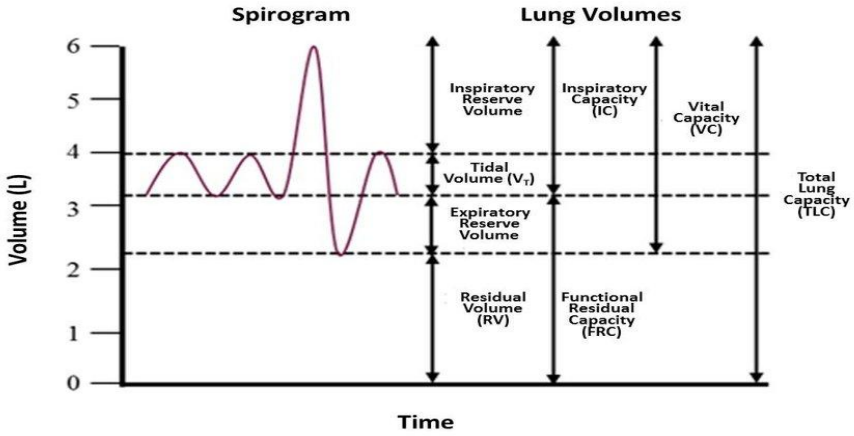

Chart no: 1. Lung Volume and Capacities

Parameters of Spirometry

- Forced vital capacity
- Forced expiratory volume in one second
- Peak expiratory flow
- FEV1/FVC%
- Forced mid expiratory flow 25-75%

Forced Vital Capacity (FVC)

This measures the amount of air one can exhale with force after a deep inhalation, measured in litres.

Forced Expiratory Volume

This measures the amount of air one can exhale with force in one breath. The amount of air may be measured at 1 second, 2 second, or 3 second.

Peak Expiratory Flow

The peak expiratory flow, also called peak expiratory flow rate, is a person's maximum speed of expiration, as measured with a peak flow meter. This measures how quickly one can exhale. It is usually measured at the same time of Forced Vital Capacity (FVC).

FEV1/FVC% (FEV_1%)

It represents the proportion of a person's vital capacity that they are able to expire in the first second of forced expiration. The FEV_1% is observed to be less than 80% in obstructive lung diseases.

Forced Mid Expiratory Flow (FEF 25%-75%)

The FEF 25-75% value is the mean of the flow during an interval at specified fractions of FVC. The maximal mid-expiratory flow is the peak of expiratory flow derived out of the flow curve and measured in litres per second.

OBSERVATIONS AND RESULTS

In this study, analysis was done on the data from a single group of sample size (N) 67. The objective parameters before and after intervention were compared using paired 't' test. The objective parameters were the main spirometric values. All the spirometric values shows significant increase after the administration of *Chyavanprash* i.e., FVC, FEV1, FEF 25-75%, PEF and FEV1/FVC%.

Table 1: Effect on Spirometric Parameters

S. No	Parameters		Median	S.D	T	P-value
1.	FVC	*B.A	1.681	0.568	2.15	0.035
		*A.A	1.7634	0.445		
2.	FEV1	B.A	1.289	0.423	5.35	0.00
		A.A	1.47	0.393		
3.	PEF	B.A	1.89	0.89	2.72	0.008
		A.A	2.14	0.82		
4.	FEF25-75%	B.A	1.67	0.803	3.226	0.002
		A.A	1.99	0.709		
5.	FEV1/FVC%	B.A	78.729	78.73	2.87	0.010
		A.A	83.807	83.80		

***B.A– Before Administration, *A.A- After administration**

DISCUSSION

Ageing is a progressive breakdown of homeostasis adaptive response of the body. *Chyavanprash* considered as a drug with excellent action in the human body in molecular and tissue level as it acts by reducing the rate of natural cell senescence in the body. After the administration of *Chyvanprash* there was a significant increase in the spirometric values. The structures involving in the *Swasana prakriya* have positively responded to the *Rasayana* administration. *Chyavanprash* by its *Rasayana, Brmhana* and *Balya* property nourished the *Srotas* well so that its healthy functioning ensured. The improved functional status of the *Srotas* as revealed by the spirometric values is ultimately due to the healthy structural status of the *Srotas* which was a positive response of the *Srotas* to the *Rasayana* administration.

Chyavanprash by its *Rasayana, Brmhana,* and *Balya* property, strengthen the muscles of respiration and it in turn helped to increase in the spirometric values.

Moolasthana of *Prana vaha srotas* is *Maha srotas* this *Mahasrotas* is *Amapakwasayasraya*. Due to that *Pranavaha srotas* and *Anna vaha srotas* are interconnected with each other. Many ingredients in *Chyavanprash* have the *Karma* to improve the *Annavaha srotas*. By correcting the *Agni* it helped to increase the functional values of *Pranavaha srotas*.

CONCLUSION

Chyavanprash rasayana is effective in increasing the vital capacity on people of age 50 years and above. Other spirometric values like FVC, FEV1, FEF25-75%, PEF and FVC% had improved in the participants after administration of *Chyavanprash.*

REFERENCES

1. Agnivesa acharya. Charaka samhitha. In: RK Sharma, Bhagavan dash (Eds). Edition. Reprint. 2015. Varanasi: Chowkhamba series; 2007. Volume 2. Vimanasthana 8/122. P (277).
2. Vagbadhacharya. Ashtanga Hrdayam Sareera sthanam. Translated by Bhishagacharya Harisastri Paradakara Vaidya (Ed). 10th reprint edition. Varanasi: Chaukhamba Krishnadas academy; 2014. Chapter 3 Angavibhagam / 105. P (417).
3. Susruthacharya. Susrutha samhitha. Translated by Prof. K.R. Srikantha Murthy. 2nd edition. Varanasi: published by Chaukhambha Orientalia; 2012. Sutrasthana. Volume 1. 35/29. P (249).
4. Acharya Agnivesa. Charaka Samhitha. In: RK Sharma, Bhagavan dash (Eds). Reprint edition. Varanasi: Chowkhamba series; 2015. Volume 2. Vimanasthana 5/3. P (170).
5. National Health Service. Spirometry. Available from https://www.nhs.uk/conditions/spirometry.last reviewed 8/6/2018. Accessed on 16/3/2019.
6. CC. Chatterjee. CC Chatterjee's human physiology. Nitin ashok john (Ed). 12th edition. New Delhi: published by CBS Publishers and distributors Pvt Ltd; volume 1. Pulmonary volume and capacities. Page no. 321.
7. Acharya Agnivesa. Charaka samhitha. In: RK Sharma, Bhagavan dash (Eds). Reprint edition. Varanasi: Chowkhamba series; 2015. Chikilsa Sthana Volume 3. 1-1/ 7. Page no. 8.
8. J. K. Ojha. Chyawanaprash from Vedic to genomic era. 1st edition. New Delhi: Chowkhamba Surbharati Prakashan; 2003, Chapter 2, Ingredients of Chyawanprash. Page no. 25.
9. Rob Pierce and David P. Johns. Spirometry the measurement and interpretation of ventilator function in clinical practice. National library of Australia Available from https://trove.nla.gov.au/version/ 44948466.

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