



Effect Of Medovrudhi On Lung Capacity : A Cross sectional Observational Study

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Abstract:

In Ayurveda there are seven fundamental principles that support basic physiology of body. Med dhatu is one of the Saptadhatu in human body. It is produced from Mamsa dhatu with the help of dhatwagni. This dhatu helps to built strength means it give dhrudhatwa to the body. Its vrudhi and kshaya can give rise to many health issues. They are consist of Rasa dhatu, Rakta dhatu, Mams dhatu, Meda dhatu, Asthi dhatu, Majja dhatu, Shukra dhatu. When a body tissue (Dhatu) gets over-nourished, it gets increased in volume and quantity. 'Med' dhatu is correlated with adipose tissue in modern science. In present era of modernization, changing life style has brought about drastic changes in dietary habits, modes of lifestyles, and various regimen of life. Sthoulya is abnormal and excess accumulation of medodhatu. hence if medovrudhi is ignored it can be converted into Sthoulya. Medovrudhi can be the first step towards the sthoulya (obesity). Consumption of fast food and sedentary life style are the basic reasons which are increasing the risk of Medovrudhi. Medovrudhi is estimated the globally there is one in 6 adults who is suffering from medovrudhi. Nearly 2.8 million individuals die each year due to overweight. Excessive weight gives rise to serious health problems like that of Hypertension, diabetes, cardiovascular disorder.

Keywords: *Med, Dhatu, Vrudhi, Asthi, Sthoulya, Shukra*

Introduction:

Medo Dhatu means fat tissue. Medo dhatu agni is the factor that controls fat metabolism. If the medo dhatu agni or the tissue fire of fat gets weak or stronger than usual, it leads to pathological manifestations. This leads to increase or decrease of fat tissue in the body. This in turn leads to a wide set of diseaEes which are again the root source for origin of many systemic illnesses like hyper-cholesterolemia, diabetes mellitus, obesity, neurological disorders etc. This is a stage in which the fat tissue tends to accumulate in the body. It may either be a basic normal phenomenon or a pathological accumulation. This may have an impact due to erratic lifestyle, especially lethargic and sedentary lifestyle and consumption of high caloric foods, binge eating, lack of exercise, stress and sleep disorders. Obese people are at risk of respiratory symptoms, such as breathlessness, particularly during exercise, even if they have no obvious respiratory illness. Obesity has a clear potential to have a direct effect on respiratory well-being, since it increases oxygen consumption and carbon dioxide production, while at the same time it stiffens the respiratory system and increases the mechanical work needed for breathing. The worldwide prevalence of obesity has been on the rise in the past three decades, resulting in an increase in the prevalence, morbidity and clinical presentation of many respiratory diseases. Obesity i.e Medovrudhi is an important risk factor and disease modifier for asthma, obesity hypoventilation syndrome (OHS), and pulmonary hypertension. The condition affects outcomes in acute respiratory distress syndrome (ARDS) and chronic obstructive pulmonary disease (CO. This

article presents an overview of the effects of Medovrudhi on normal physiology and function of the lung.

Aims & Objectives:

1. To Study Medovrudhi
2. To study effect of Medovrudhi on Lung Capacity

Material & Method:

Type Of Study: Cross sectional Observational Study

Inclusive Criteria

1. Healthy volunteer between the ages 20 to 60 years.
2. Volunteers having medovrudhi of age 20 to 60 years with BMI ≥ 30 kg/m² and waist circumference ≥ 90 cm in men; ≥ 80 cm in female.
3. Irrespective of sex, dehaprakruti and sara from same area are selected.

Exclusive Criteria -

1. Volunteers taking hormonal (steroid) therapy.
2. Volunteers suffering from any heart, lung disorders, smokers.
3. Volunteers of HTN, diabetes, hypothyroidism, bronchial asthma.
4. Pregnant woman, lactating women.
5. Volunteers having BMI ≥ 25 -29.9 kg/m².

Method of Selection of Control Group:

60 volunteers with medovrudhi of age group 20-60 yrs in group (A- trial) are selected randomly and 60 healthy volunteers of same age group are selected randomly in group (B-control). Lung capacity of both groups are compared

Specification of Instruments:

Computerized Spirometer (Cardio Pulmonary Functional standard Device) (CPFSD), Tape, Weighing Machine.

Measurements :**Subjective Parameters**

1. Snigdhanganta
2. Kasa-swasa vrudhi
3. Daurgandhya

Objective Parameters –

1. BMI
2. Waist, circumference.
3. Udarparshva > length of 12 angula & having thickness (vistar) 10 angula (ref. Cha.vi. 8) (Normal of Indian men = 90 cm, women = 80 cm)

Methodology :

1. Random screening of volunteers for inclusion
 2. Groups allocation for study
 3. Group A (Trial)
 4. Group B (Control)
 5. volunteers with medovrudhi is selected
 6. volunteers without medovrudhi is selected
 7. Lung capacity of each volunteers of both groups is calculated by spirometer and compared
- Statistical analysis Result, Summary, Conclusion is drawn

Review of Literature**Ayurved Review:****Med Dhatu Utpatti:**

The meda dhatu is formed from its predecessor mansa dhatu. When mansa dhatu is subjected to the process of micro-transformation one processed part of it is specifically utilized to provide nourishment to the next dhatu in order i.e. Meda Dhatu.

Meda Dhatu Sthan /Location:

Like all other dhatus Meda is also present everywhere in the body. However, abdomen buttocks, Chest are few sites where it is predominantly present. Vrkkā body organs equivalent to kidney, Vapavahanam body organs equivalent to omentum & misentryand Kati low back and loin region are known as the chief sites of medovaha srotas

Meda Dhatu Updhatu:

Meda dhatu when subjected to the process of micro-transformation i generates 1 more entity which is known as Upadhatu Metabolic by-product) of Meda dhatu. Snayu (Equivalent to ligament is known to be that upadhatu of meda dhatu.

Meda Dhatu Mala:

During the micro-transformation of Meda dhatu inside body and formation of upadhatus , one liquid form of substance is generated as a waste byproduct and it is called as 'Sweda' Sweda is one of the 3 malas of body.

Meda Dhatu Functions:

1. Snehanam (lubrication) - Maintains hydration, softness and oil balance in the body
2. Swedanam Sweating- It controls sweat formation and thus indirectly participate in temperature control of the body
3. Drudhatvam stability- It protects body from excess cold or hot climate and at the same time provides strength support to other body organs to work smoothly by preventing friction and heat generation

Meda Dhatu Vrudhi :

Swalpe api cheshtite shwasam - dyspnoea or breathlessness (short of breath doing a small quantity of work, Spik lambanam - sagging of buttocks, Stana lambanam - sagging of breasts, Udara lambanam - sagging of abdomen (belly, tummy)

Meda Dhatu Kshay:

svapanam katya: - loss of sensation in the waist. It is due to the absence of fat tissue cushioning underneath the skin in the abdomen,
svapanam katya: - loss of sensation in the waist. It is due to the absence of fat tissue cushioning underneath the skin in the abdomen
krśāngata emaciation of the body, lean body.

Modern Review:**Lung-Capacity:**

Lung capacity, also known as Total Lung Capacity i.e TLC, refers to the maximum amount of air the lungs can hold after a maximal inhalation. It's a key measure of respiratory health and varies based on factors like age, gender, and body composition.

TLC Definition:

TLC is the sum of all lung volumes (Tidal Volume, Inspiratory Reserve Volume, Expiratory Reserve Volume, and Residual Volume).

Average Human Lung Capacity:

In healthy adults, the average TLC is about 6 liters, roughly equivalent to three large soda bottles.

Factors Affecting Lung Capacity:

Age: TLC increases from birth to adolescence, then plateaus around 25 years old.

Gender: Males tend to have a larger TLC than females.

Body Composition: Taller individuals generally have a higher TLC than shorter individuals, and body fat distribution can also play a role.

Ethnicity: Lung capacity can vary slightly among different ethnic groups.

Statistical Analysis:

The data collected from the CRF were then subjected to demographic and statistical analysis. 'F' ratio test and χ^2 test was applied to the data generated. 'z' test is applied to the quantitative data.

Discussion:

Data generated during the study was subjected to the statistical analysis to reach up to the final result and conclusion. In group A to assess the effect of medovrudhi on objective parameters, 'Z' test is used as sample size is more than 30 considering parameters Waist circumference, Udarparswa praman, Swangulipraman, weight, BMI, All terms of Spirometry (lung capacity). In group B same objective parameters are assessed and 'z' test is applied. 'chi-square', Man Wilcoxon signed Ranks applied to the other qualitative data and result is drawn by comparing results in both the groups. Parameters Snigdhangata, Swasvrudhi, Udarparswa, Kasvrudhi, Dourgandhya weight, Fvc, fefmax, fef 75% have significant changes in Group A than Group B. Lung capacity is found different in different Deha prakruti and sarata.

Observations & Result:

1. Medovrudhi is found to be more common in the age group 40-50 years.
2. Females are more prone to Medovrudhi than male volunteers.
3. Medovrudhi is found to be least in labours than the other occupations.
4. Married volunteers are more prone to Medovrudhi than unmarried volunteers.
5. Medovrudhi is common in almost all the sedentary occupation.
6. Weight, waist circumference, BMI Swangulipraman, Udarparswapraman is found to be significantly increased in medovrudhi than normal volunteers.
7. Considering Addiction, volunteers with addiction of tea are seen more prone for Medovrudhi.
8. Peoples with Kapha-Pitta Pradhan Prakruti are found more prone to Medovrudhi.
9. Lung capacity values are found to be different in different Dehaprakruti.
10. Lung capacity values are found to be different in different Sara.
11. Maximum volunteers of medovrudhi were with avar medasarata.

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