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# AN EVALUATION OF *MEDOVAHA SROTO MULA (CHARAKOKTA)* W.S.R. TO *ATIHRUSVA* (SHORT OR DWARFISM): A REVIEW

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## ABSTRACT

In *Ayurveda* the concept of *Sortras* is like roots of the tree. The human body is a conglomeration of the *Srotas* as per our classics. "*Srotas*" can be described as channels or passages where nutrition flows, interact and transfers. One of them being "*Medovaha Srotas*" which stands for channels carrying the fat tissue in body starting from its formation to demise of its constituents. According to *Charaka* –the roots of *Medovaha srotas* are located in: *Vrukka* –Kidneys and *Vapavahanam* – Peritoneum or omentum (layers covering and protecting the abdominal organs). *Sushruta* has narrated "*Katee*", and

"*Vrukkau*" as the *Mula* or root of origin for "*Medovaha Srotas*" and the vitiation of *Medovaha srotas* will lead to the manifestation of 8 types of socially unfit body frames. and *Atihrusva* (short or dwarfism) is one of them.

In modern science, *Atihrusva* can be correlated with short people or dwarfism. Dwarfism is short stature that results from a genetic or medical condition. Dwarfism is generally defined as an adult height of 4 feet 10 inches (147 cm) or less. The average adult height among people with dwarfism is 4 feet (122 cm).

Some people prefer the term "short stature" or "little people" rather than "dwarf" or "dwarfism." So, it's important to be sensitive to the preference of someone who has this disorder. Short stature disorders do not include familial short stature — short height that's considered a normal variation with normal bone development.

**Keywords**- *Medovaha Srotas, Atihrusva,* Dwarfism ,*Vrukka, Vapavahanam.*

## Introduction

Ayurveda has given a vivid description of the anatomy of the human in terms of *Dosha*, *Dhatu, Malas, Srotas, Kostha, Kostangas* etc. "*Srotas*" means "*Sravanat Srotansi*" which can be like exudation, oozing, filtration, to flow, to move etc. [1] *Srotas* are the inner transport system of the body which provides a platform for activities of another important bio factors like three *doshas, seven dhatus* etc.[2] *Acharyas, Charaka* has described 13 gross channels [2] while *Acharya Susruta* said 11 pairs of *Srotas*.[3] *Medovaha Srotas* is one of them. All *Srotas* have their own *Mulasthana* or root. *Chakrapani* mentioned *Mula Sthana* of *Srotas* as *Prabhavasthana* means the anatomical seat of respective *Srotas*, the main seat of pathological changes, having diagnostic value or its be the focus of treatment.

According to *Charaka* –the roots of *Medovaha srotas* are located in: *Vrukka* – Kidneys and *Vapavahanam* – omentum (layers covering and protecting the abdominal organs).[4]*Susruta* has narrated "*Katee*", and "*Vrukkau*" as the *Mula* or root of origin for "*Medovaha Srotas*".[5]According to Acharya *Susruta, Rakta* and *Meda* is

responsible for the formation of *Vrukka*.[6] Causes for vitiation of *Medovaha srotas* are lack of exercise, sleeping during day time, eating luxurious, fat rich, fried and caloric foods in excess, excessive consumption of an alcoholic product called *Varuni*.Symptoms of injury or damage to *Medovaha srotas* are excessive sweating, oily appearance of the body, dryness of the palates, obesity, oedema, thirst.[7]

In modern science, *Atihrusva* can be correlated with short people or dwarfism. Dwarfism is short stature that results from a genetic or medical condition. Dwarfism is generally defined as an adult height of 4 feet 10 inches (147 cm) or less. The average adult height among people with dwarfism is 4 feet (122 cm).

Many different medical conditions cause dwarfism. In general, the disorders are divided into two broad categories:

- **Disproportionate dwarfism.** If body size is disproportionate, some parts of the body are small, and others are of average size or above-average size. Disorders causing disproportionate dwarfism to inhibit the development of bones.
- **Proportionate dwarfism.** A body is proportionately small if all parts of the body are small to the same degree and appear to be proportioned like a body of average stature. Medical conditions present at birth or appearing in early childhood limit overall growth and development.

Some people prefer the term "short stature" or "little people" rather than "dwarf" or "dwarfism." So, it's important to be sensitive to the preference of someone who has this disorder. Short stature disorders do not include familial short stature — short height that's considered a normal variation with normal bone development.

## AIM & OBJECTIVE

The aim of the present study is to establish the role and functional utility of *Srotomula* of *Medovaha Srotas* w.s.r. to *Atihrusva* (Dwarfism).

## MATERIALS AND METHODS

Symptoms of vitiation of *Medovaha srotas*[8]–

*Ashta nindita purushas* – The vitiation of *Medovaha srotas* will lead to the manifestation of 8 types of socially unfit body frames. They are – *Atisthula* (obese or excessive fat), *Ati krusha* (thin and emaciated), *Ati loma* (lot of body hairs), *Aloma* (lack of body hairs), *Ati gaura* (excessive white complexion), *Ati Krushna* (too dark complexion), *Ati deergha* (tall or gigantic) and *Atihrusva* (short or dwarfism) [9].

We can see involvement of *vata* in both gigantism and dwarfism since *vata* operates from bones. Bones are chief seats of *vata.* Dwarfism is often a genetic condition. If *vata* affects the embryo, it can cause disproportionate growth of bones which may continue after birth. *Vata* can also affect bone formation process after birth.

*Kapha* is chief *dosha* involved in growth and maturation of infant into child and child into adolescent. *Kapha* is active during the growth phase. When normal *kapha* properly governs growth and development, bones, tissues and organs are proportionally formed. When there is an imbalance between *kapha* and *vata*, bones may become long or short and lead to gigantism or dwarfism.

Five elements of nature are involved in formation and maturation of body parts in growing fetus. Akasha i.e., space element produces space for development of all structures. *Vata*i.e., air element is involved in cell division and differentiation. When both these elements become hyperactive in the fetus, it results in gigantism and when they influence in a deficit way, dwarfism occurs. Same mechanism may happen after birth when there is an imbalance of *vata* and akasha elements mutually and in relationship with *kapha.* Same *vata* and *akasha* elements form *vata dosha.*

## Symptoms

Signs and symptoms — other than short stature — vary considerably across the spectrum of disorders.

## Disproportionate dwarfism [10]

Most people with dwarfism have disorders that cause disproportionately short stature. Usually, this means that a person has an average-size trunk and very short limbs, but some people may have a very short trunk and shortened (but disproportionately large) limbs. In these disorders, the head is disproportionately large compared with the body.

Almost all people with disproportionate dwarfism have normal intellectual capacities. Rare exceptions are usually the result of a secondary factor, such as excess fluid around the brain (hydrocephalus).

The most common cause of dwarfism is a disorder called achondroplasia, which causes disproportionately short stature. This disorder usually results in the following:

- An average-size trunk
- Short arms and legs, with particularly short upper arms and upper legs
- Short fingers, often with a wide separation between the middle and ring fingers
- Limited mobility at the elbows
- A disproportionately large head, with a prominent forehead and a flattened bridge of the nose
- Progressive development of bowed legs
- Progressive development of swayed lower back
- An adult height around 4 feet (122 cm)

**Proportionate dwarfism**

Proportionate dwarfism results from medical conditions present at birth or appearing in early childhood that limit overall growth and development. So, the head, trunk and limbs are all small, but they're proportionate to each other. Because these disorders affect overall growth, many of them result in poor development of one or more body systems. Growth hormone deficiency is a relatively common cause of proportionate

dwarfism. It occurs when the pituitary gland fails to produce an adequate supply of growth hormone, which is essential for normal childhood growth. Signs include:

- Height below the third percentile on standard paediatric growth charts
- Growth rate slower than expected for age
- Delayed or no sexual development during the teen years

Growth failure is a complication of CKD in which children do not grow as expected. When a child is below the third percentile—meaning 97 percent of children the same age and gender are taller—he or she has growth failure.[11] CKD is kidney disease that does not go away with treatment and tends to get worse over time.

Health care providers use charts to monitor the growth of children with CKD and look for signs of growth failure. Growth charts for children use percentiles to compare a particular child's height with the height of children the same age and gender. For example, a child whose height is at the 50$^{th}$ percentile on a growth chart means half the children in the United States are taller than that child and half the children are shorter.

About one-third of children with CKD have growth failure. Children diagnosed with CKD at a younger age

- have a higher chance of developing growth failure
- have more health issues related to growth failure and CKD.

Researchers have found that many factors cause growth failure in children with CKD. In addition to removing wastes and extra fluid from the blood, the kidneys perform important functions for a child's growth. Understanding normal kidney function and growth helps families understand what causes growth failure in children with CKD.

In one of the experiments, they chose pigs because they are functionally analogous to humans, although they store less fat in the omentum, whose structure looks like a veil. Four male dwarf pigs were fed, since weaning, with hyperlipidic fodder. When they were eight months old, they were operated on under general anesthesia in their laboratory for experimental surgery. After laparotomy, the omentum was delivered and

treated with ultrasound for 1 hour. Before and just after the sonication, biopsies were drawn from omentum and processed for histologic findings.

After 50 days, the surviving animals were sacrificed and autopsied; specimens from omentum, liver, and spleen were histologically processed. Two animals died during the operation, while the two surviving animals were in good general condition. Macro and microscopic observations demonstrated that during the postoperative period, an intense inflammatory reaction developed; macroscopic observation evidenced fibrous adhesions of the omentum to the surrounding organs; the connective tissue network was thickened and the whole omentum was twisted on itself.

## DISCUSSION

All *Srotas* have their own *Mulasthana* or root. *Chakrapani* mentioned *Mula Sthana* of *Srotas* as *Prabhavasthana* means the anatomical seat of respective *Srotas*, the main seat of pathological changes, having diagnostic value or its be the focus of treatment. According to *Charaka* –the roots of *Medovaha srotas* are in: *Vrukka* –Kidneys and *Vapavahanam* – Peritoneum or omentum (layers covering and protecting the abdominal organs). *Sushruta* has narrated "*Katee*", and "*Vrukkau*" as the *Mula* or root of origin for "*Medovaha Srotas*" and the vitiation of *Medovaha srotas* will lead to the manifestation of 8 types of socially unfit body frames. and *Ati hrusva* (short or dwarfism) is one of them.

In modern science, *Atihrusva* can be correlated with short people or dwarfism. Dwarfism is short stature that results from a genetic or medical condition. We can see involvement of *vata* in both gigantism and dwarfism since *vata* operates from bones. Bones are chief seats of *vata.* Dwarfism is often a genetic condition. If *vata* affects the embryo, it can cause disproportionate growth of bones which may continue after birth. *Vata* can also affect bone formation process after birth.

Growth failure is a complication of CKD in which children do not grow as expected. When a child is below the third percentile—meaning 97 percent of children the same age and gender are taller—he or she has growth failure. There is also relation of omentum with dwarfism observed in one of the experiments with dwarf pigs.

## CONCLUSION

*Vrukkau* (Kidneys) and *Vapavahanam* (Omentum) can assure as the important organs in pathogenesis of *Athrusva*, which may lead to the base behind taking *Vrukkau* (Kidneys) and *Vapavahanam* (Omentum) as a *Mula* of *Medovaha Srotas.* The concepts proposed by our eminent *Acharyas* for *Srotomula* can be established by the pathological conditions given by them in *Srotodushti Lakshanas*. This needs extensive studies of the conceptual matter regarding the *Srotas* from various texts and their establishment through knowledge provided by modern medicine.

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