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An Analysis of the Asthikshaya (Osteoporosis) WSR to Strotas Concept

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Abstract: ***Ayurveda is an integrated medical science. Ayurveda's main goals are to maintain the health of healthy individuals and to treat patients' illnesses. The current situation presents more difficulties for health science because of the prevalence of non-communicable diseases. A non-infectious or non-contagious disease is referred to as a non-communicable disease (NCD). The non-communicable disease osteoporosis (OP) is significant. Osteoporosis is becoming more commonplace every day. Women and older people are more likely to experience it. Reduced bone mass and changes in bony tissue are symptoms of osteoporosis, a metabolic systemic disease. Ayurveda is regarded as a pioneer in life sciences and explains how to avoid and treat lifestyle disorders. Using Ayurvedic principles, There is no specific clinical condition like osteoporosis mentioned in the Samhitas of Ayurveda. 18 different types of kshaya were described in Ayurvedic literature, though. Asthikhsaya among them could be regarded as osteoporosis. The role of Strotas in asthikshaya, as described in Ayurvedic samhitas, is discussed in this paper using an ayurvedic concept. There is no specific clinical condition like osteoporosis mentioned in the Samhitas of Ayurveda. 18 different types of kshaya were described in Ayurvedic literature, though. Asthikhsaya among them could be regarded as osteoporosis. The role of Strotas in asthikshaya, as described in Ayurvedic samhitas, is discussed in this paper using an ayurvedic concept.***

Keywords: Osteoporosis, Asthi Dhatu, Asthivaha Strotas.

I. INTRODUCTION

Panchamahabhutas are what make up the human body.

Dosha, Dhatus, and Malas are in a balanced state when they are healthy, and when they are disturbed, disease results.1 Either a Vriddhi or a Kshaya disequilibrium could exist.

Balyavastha, in accordance with Ayurveda, The is a time of Dhatunirman, or anabolic phase; Yuvavastha, on the other hand, preserves Samavastha (equilibrium) of various Dhatus; however, as we age, all Dhatus gradually decline as catabolism quickens. Acharya Charak listed the 18 types of Kshaya that comprise Asthikshaya.2 Regarding Vriddhi and Kshaya, Asthi and Vata are inversely related to one anotherKshaya of Asthi is reached by way of Vriddhvat.

3 Asthikshaya shares many of the same symptoms as osteoporosis, which is characterized by a loss of bone mass that increases bone fragility and fracture susceptibility.

There will be 6 million osteoporosis patients worldwide by 2050 (both men and women combined), with developing nations home to 75% of them.4 The most frequent side effects include fractures of the vertebral bodies, ribs, proximal femur, humerus, and distal radius with minimal trauma.5

Some of the risk factors for osteoporosis include advanced age, female sex, sex hormone deficiency, a diet low in calcium, protein, and vitamin D, smoking, alcoholism, prolonged corticosteroid therapy, and low Body Mass Index (BMI).6.

But it is seen that people consuming nutritious diet are also suffering from the disease. If the symptoms are present before menopause, they grow rapidly after menopause. . .

Here an effort is made to study the etipathogenesis of Asthikshaya and its management according to Ayurveda.

II. AIMS AND OBJECTIVES

1) Acquiring an understanding of the Ayurvedic concept of Asthikshaya.
2) To investigate the function of Strotas in asthikshaya.
3) Reviewing osteoporosis research in light of contemporary scientific knowledge.

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III. METHOD AND MATERIALS

The study is based on an analysis of contemporary texts and ayurvedic samhitas. The following topics will be discussed in this study.

1) A collective study of the Ayurvedic Samhita's Asthi Dhatu, Strotas, and Asthikshaya.
2) A study of osteoporosis from contemporary texts.
3) Different research articles that have been posted in online journals.

A. Ayurvedic Review

The fifth of the seven dhatus is known as Asthi Dhatu. Pitraj bhavatmaka4 is credited by ayurveda as the origin of asthi dhatu. Part of the medo dhatu participates in the creation of the asthi dhatu during the dhatu poshana process by moving on to the asthivaha Strotas. A portion of the ahara rasa and nutrients from the medovaha Strotas are both acted upon by the asthi dhatwagni, which then results in the production of asthi dhatu. Sthayi and poshaka dhatus are the two varieties of dhatus. While not the entire asthi dhatu, asthi or bone can be regarded as sthayi dhatu. According to Chakrapani commentary on Charaka vimana sthana that, Asthi dhatu is also in liquid form called as Poshaka Asthi that flows through the Asthivaha Strotas and nourishes the sthayi Asthi dhatu. [5]

Total no. of asthi which is described in ayurvedic classics is as below.

1. Vedavadi	Charaka samhita,ashtang sangraha, ashtang hridaya, kashyapa samhita	360
2. Shalyatantravadi	Sushruta smahita, bhavaprakasha	300

Sushruta described 5 types of asthi, these are as follows[6]

a) Kapalasthi
b) Ruchakasthi
c) Tarunasthi
d) Valayasthi
e) NalakasthiIn

Accordance with the Sharangdhara Samhita, upadhatu of asthi dhatu is "danta". According to acharyas, the asthi dhatu mala is as follows.

1	Charaka samhita	Loma, kesha
2	Sharangdhara samhita	Nakha
3	Sushruta samhita	Nakha, roma, kesha

- *Asthikshaya:* Acharya Charaka described eighteen different varieties of Kshaya. One is caused by Oja kshaya, three are due to dosha, seven are due to dhatu, seven are due to Mala kshaya, and three are due to dhatu.Dhatu Kshaya has an Asthikshaya subtype.
- *Asthikshaya sign and symptoms:* While osteoporosis-like symptoms are not specifically mentioned in the Ayurvedic classics, they can be linked to asthikshaya. Clinical signs and symptoms of Asthikshaya include Asthishula, Toda, and Sandhi Shaithilya, Kesha, Loma, Nakha, Danta Vikara and Paata, Dourbalya, Rukshata[7], etc.

In relation to this idea, the ayurvedic system makes reference to another condition called asthisaushirya. Asthisaushriya is not a distinct condition, but rather one that occurs as a result of majjakshaya. The meaning of the word "saushirya" in the Hemadri commentary is "sarandhratvam," which means "with pores."[8]

- *Strotas Involved in Asthikshaya*

➢ *Asthivaha Strotas:* Strotas are the circulation channels that carry dhatus's nutritional components. Asthi, according to chakrapani poshak, flows in the form of asthayi asthi dhatu in the asthivaha Strotas and supplies the bone with nutrients. The flow of poshak asthi dhatu will be impacted by asthivaha Strotas dushti. Asthikshaya results from this.
➢ *Medovaha Strotas:* Medo dhatu is the just previous to asthi dhatu and provides the poshakansh sara to the asthi dhatu. When medovaha Strotas dusti occurs it leads to the lack of poshakansh sara. This results less nourishment of next dhatu i.e. asthi dhatu, hence asthikshaya originate.

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- *Majjavaha Strotas:* Majjavaha srotos dushti, such as virruddha and abhishyandi ahara, causes amotpatti. Ama can result in nutrient deficiencies during the dhatu poshana process, which can result in asthikshaya, as well as obstruction in the way of vata (margavrodh).
- *Purishvaha Strotas:* Dalhana claimed that asthidhara kala is identical to purishdhara kala.

[9]Therefore, based on this logic, whenever dusti of purishvaha Strotas occurs, dusti of asthivaha Strotas also follows.
Asthikshaya is the outcome in the end. Strotas is therefore connected to asthikshaya as previously described.
Review of the Modern Era Osteoporosis: Osteoporosis weakens bones, making them brittle and more prone to breaking.
Porus bone is what osteoporosis is. The Latin word "porous" (which means "full of pores") is the root of the Greek word "osteon," which refers to bone tissue. Therefore, the word osteoporosis' combined meaning is "porous bones." Osteoporotic bones have abnormal tissue structure and have lost density or mass. Less dense bones are more brittle and susceptible to breaking. The spine, hips, ribs, and wrists are common sites for osteoporosis-related bone fractures. Osteoporosis is one of the most prevalent bone disorders in India and is a global public health issue. The amount of bone that is present in the skeletal structure determines bone density. Osteoporosis manifests

✓ Osteoporosis Risk Factors[10]
- ❖ Age: Osteoporosis is more prevalent in older people.
- ❖ Gender: Women are more likely than men to develop osteoporosis.
- ❖ Ancestral history
- ❖ Sex hormone: Osteoporosis is caused by low levels of testosterone and oestrogen in both men and women.
- ❖ Food-related factors
- ❖ Genetic components
- ❖ Lifestyle elements

✓ Symptoms of Osteoporosis include
- ❖ Pain (due to fractures)
- ❖ Tenderness
- ❖ General debility
- ❖ Muscular weakness
- ❖ Abdominal distension
- ❖ Insomnia
- ❖ Loss of appetite.
- ❖ Osteo-arthritis.

✓ Diagnosis
Radiological evaluations include X-rays, BMD calculations, quantitative computed tomography (QCT), MRIs, and ultrasounds.

IV. DISCUSSION

We observed that the asthi dhatu is connected to the teeth, nails, and hairs. Because of this, a decrease in asthi dhatu also causes damage to nails, teeth, and hair.
These characteristics are listed as asthikshaya's symptoms.
Although there is no direct connection between asthikshaya and osteoporosis, the main symptom of the disease is porous bones, which share characteristics with majjakshaya.
[11] "dhatu poshana nyaya" states that Majja will be Asthi's next Dhatu. Majjakshaya consequently happens during the kshaya process when Asthi dhatu's proper supply of nutrients is interrupted by asthikshaya. Therefore, we can conclude that osteoporosis is caused by the asthikshaya.
The asthi dhatu is the ashraya of vata, according to "ashrayaashrayi bhava".[12] According to Ashtang Hridaya, the increase and decrease of Asthi and vata are inversely proportional to one another, meaning that asthidhatu decreases when vata increases and increases when vata decreases.[13] According to Ayurveda, the vata dosha, which is dominant in vriddhavastha (old age), can cause a decline in bone density. Previous research suggests that symptoms of menopause are caused by low oestrogen levels. The transition from the pitta to the vata phases of life is marked by menopause.

In this stage, signs of increased vata such as dryness in the vagina, mental fog, and thin, dry skin start to show up. This suggests that lower levels of oestrogen cause an increase in vata, and that an increase in vata leads to asthikshaya. Therefore, following menopause

V. CONCLUSION

The ayurvedic samhitas described asthi (bone) in the form of sthayi asthi dhatu, and the function of sthayi asthi dhatu is Shareera dhaaran (stability), as can be inferred from the discussion of the points raised above and the review of the ayurvedic samhitas.
Since asthikshaya is caused by increased vata, older people are more likely to develop osteoporosis.
The main symptom of asthikshaya (porus bone) is described under majjakshaya, despite the fact that the symptoms are almost identical to those of osteoporosis. Asthikshaya ultimately causes porous bone (osteoporosis) because asthi is filled by majja and asthikshaya is the primary cause of majjakshaya.

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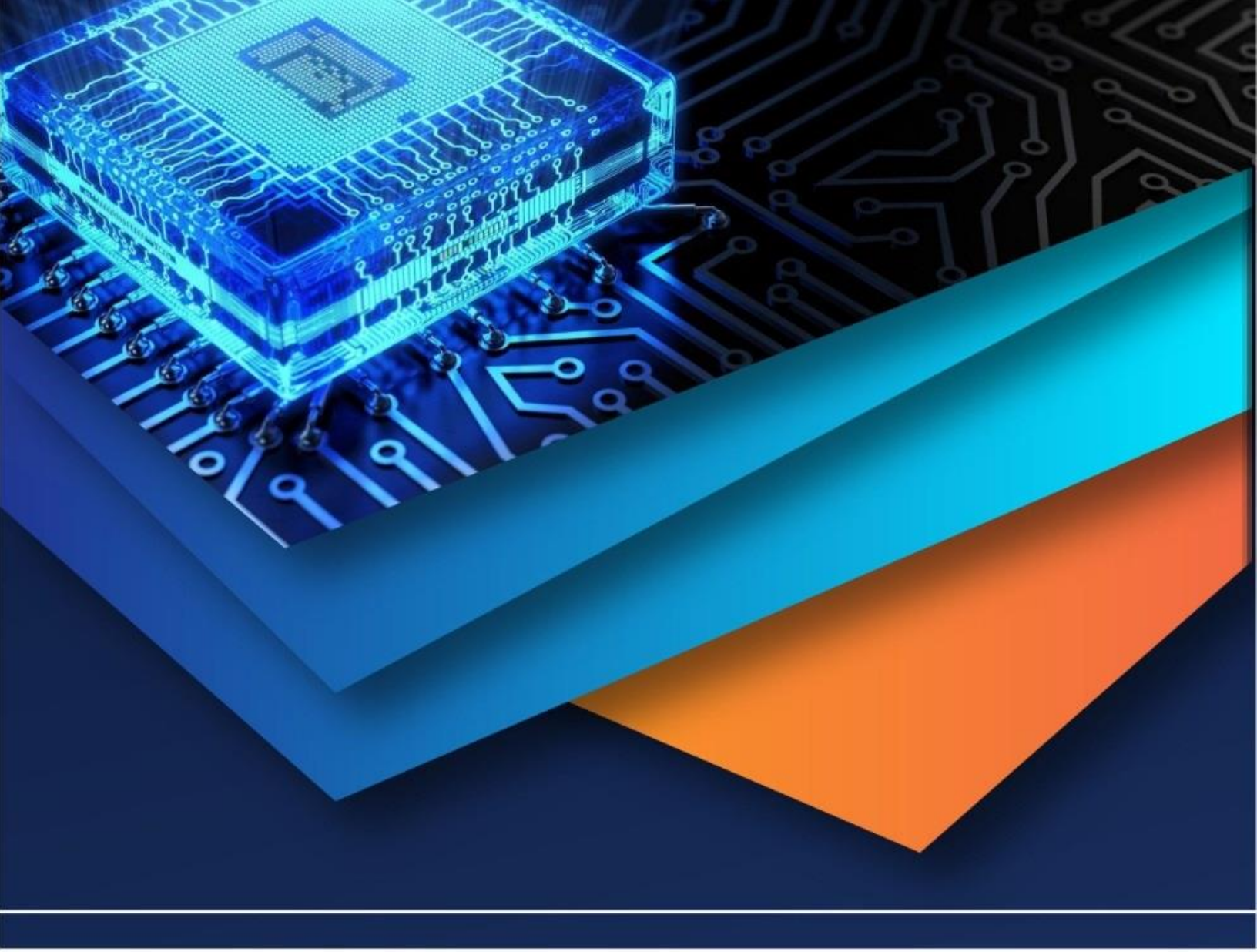

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