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CORRELATION OF *VATA PRAKRITI* AND *ASTHI- MAJJA DHATUKSHAYS* WITH REFERENCE OF *ASTHI SOSHIRYA* (OSTEOPOROSIS)

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Abstract

Tridosha and *Dhatu* are the fundamental aspects of Ayurveda, which preserves the body's balance. *Majja Dhatu* is essential one amongst the other *Dhatus*, which is situated in the bone. *Asthi Dhatu* is closely linked to *Vata Dosha* through the principle of *Ashraya-Ashrayi Bhava* according to Ayurvedic traditions. The degeneration of this tissues means *Asthi Kshaya* is caused by an increase in *Vata Dosha*. Similarly the pathophysiology of *Majja Kshaya* results from the imbalances brought on by vitiated *Vata Dosha*. *Asthi Saushirya* and *Asthi Daurbalya* are clinical characteristics of *Majja Kshaya* that correlate with contemporary disorders including osteoporosis and decreased bone density. *Asthi Kshaya*, or bone tissue loss, occurs primarily through two main mechanisms. The first is due to a deficiency of essential nutrients required for bone nourishment, often resulting from malnutrition or heightened catabolic activity associated with aggravated *Vata Dosha*. The *Vata*-aggravating dietary and lifestyle habits may triggers pathogenesis of *Asthi Dhatu* and *Majja Kshaya* leading to the *Asthi Soshirya*. This paper examines correlation of *Vata Prakriti* and *Asthi-Majja Dhatukshays* with reference of *Asthi Soshirya* (Osteoporosis).

Key-Words: *Vata Prakriti, Asthi Dhatu, Majja Dhatu, Asthi Soshirya, Osteoporosis*

Introduction

The *Dhatus* are essential to the body's nutrition, body's structural integrity and sustaining general health. The penultimate tissue to form in the *Dhatu* creation sequence is *Majja Dhatu*. It is believed that *Vata* forms empty spaces in the bones during the creation of *Asthi Dhatu*, which is then filled with the nourishing semi-solid tissue called *Majja Dhatu*. According to *Acharya Sushruta*, this bone marrow (*Majja Dhatu*) fills the cavities in bones, strengthens the body and support in the development of *Shukra Dhatu*. *Asthi Dhatu* is most impacted when *Majja Dhatu* is depleted in the condition of *Majja Kshaya*. This occurs because *Asthi Dhatu* depends on *Majja* for *Asthipuranam* and sustenance [1-4].

Symptoms of *Asthi- Majja Dhatukshays*:

The condition is usually first identified by dryness of the skin and hair, brittle nails, joint pain, and a feeling of bone fragility. Intense bone pain, dental problems, joint stiffness and skeletal deformities are some of the common symptoms that may worsen as the illness progresses. Systemic symptoms include sense of weakness and debility, persistent weariness and muscle atrophy, etc [3-5].

Role of *Vata* in *Samprapti*

The major *Samprapti Ghatakas* of *Asthi-Majja Dhatukshays* are as follows; which are considered as pathological factors of disease manifestation:

- ✓ *Doshas*: *Vyana Vata*.
- ✓ *Dhatus*: *Asthi* and *Majja Dhatus*.
- ✓ *Srotas*: *Asthivaha* and *Majjavaha Srotas*.
- ✓ *Srotodushti*: *Srotosanga*.
- ✓ *Vyaktasthana*: Manifestation in the *Janu, Shroni, Manibandh, Parshani, Prishthavansha*

As mentioned above it can be stated that factors that vitiate *Vata* play a role in *Asthi Kshaya*. According to Ayurvedic texts, the pathophysiology of *Asthi Kshaya* can be understood using the etiological aspects of *Vata Vyadhi*. The development of this condition is largely influenced by the causative factors that vitiate the *Medovaha, Asthivaha* and *Majjavaha Srotas*. According to *Samanya Samprapti*, *Asthi Dhatu* is depleted as *Vata Dosha* rises. The main causes of *Vata* aggravation are *Dhatu Kshaya* and *Margavarana*. These all caused by blockage in the *Vata* pathways, particularly *Vyana Vayu* [4-6].

Thus, aggravated *Vata* enters the *Asthivaha Srotas* as a result of ongoing exposure to etiological factors that cause both *Dhatu* depletion and channel obstruction. Due to their lack of *Sneha* and other stabilizing characteristics, these channels are susceptible to degeneration, which can lead to *Asthi Kshaya*.

Nidana Panchaka of Asthikshaya

The three main causes of *Asthi Kshaya* are depicted in **Figure 1**, which denote specific *Nidana* responsible for *Asthi-Majja Dhatukshays*.

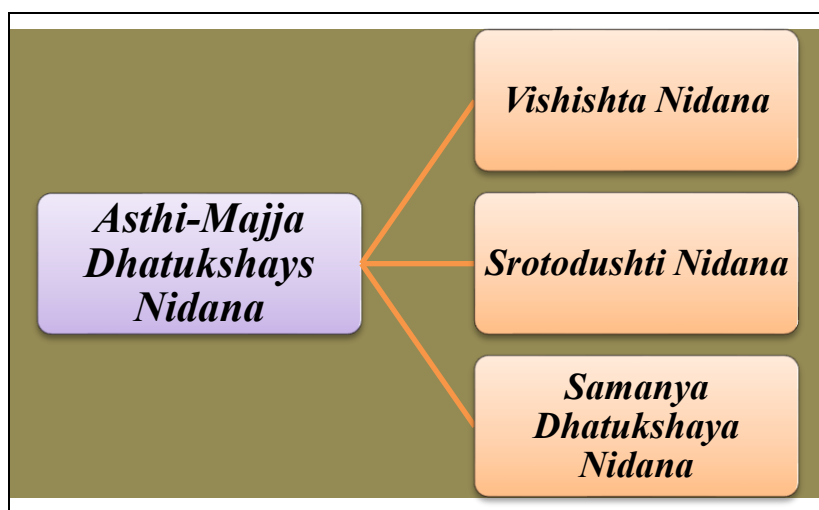


Figure 1: *Asthi-Majja Dhatukshays Nidana*

As mentioned above *Vishishta Nidana* include specific or congenital reasons, *Srotodushti Nidana* are channel-specific vitiating agents and *Samanya Dhatukshaya Nidana* are generic causes of tissue depletion. *Ativyayama*, *Anashana*, *Ati Chinta*, *Bhaya*, *Shoka*, *Rukshashana*, *Alpaashana*, *Vataatapa Sevana* and *Ativartana*, etc. are general factors that contribute to *Dhatukshaya*. *Srotodushti Nidanas* include *Vatala Ahara*, *Asthi Vighattana*, *Ati Sankshobha*, *Abhigata* and *Prapedana*; these factors can vitiate *Majjavaha Srotas*. Congenital or hereditary variables includes vitiation in *Beeja*, *Beejabhaga*, *Beejabhagavayava*, *Pitrija Bhava*, *Kulaja* and *Vata Prakriti* is important when it comes to *Vishishta Nidana*. The role of *Vata Prakriti* is described in next section of this article [5-7].

Role of Vata Prakriti in Asthi-Majja Dhatukshays

According to Ayurveda the peoples of *Vata Prakriti* tend to have *Alpa Sharira*, *Anavasthita Asthi Sandhi* and low *Majja Pusti*. Given their lower bone mass and constitutionally inferior *Dhatu* quality, it would appear that *Vata Prakriti* people are innately more prone to *Asthi Kshaya*. *Vata Dosha* lives in *Asthi Dhatu* and has an inverse relationship

with it. *Vata* is therefore the primary component in the pathophysiology of *Asthi Kshaya* as any factor that aggravates *Vata* also adds to the depletion of *Asthi Dhatu*. It is necessary to take into account both the general *Vata Prakopa Nidanas* and the particular *Srotodushti Nidanas* of *Asthivaha* and *Majjavaha Srotas* in order to completely comprehend the *Samprapti* of *Asthi Kshaya* [6-8].

Vata Dosha is the main pathological factor in *Asthi Kshaya* since it possesses strong correlation with *Jara* and *Asthi Dhatu*. Clinical manifestations including *Shoola*, *Rukshata*, *Shrama* and *Ruja* result from the concurrent depletion of *Kapha* and *Vata* aggravation. Poor tissue formation and nourishment are the results of weak *Dhatvagni*, which are frequently observed in old age due to impaired *Agni* function, particularly *Jatharagni*. The development of the disease is aided by this malfunction, which generates *Ama* at the tissue level. *Vata* obstruct number of *Srotas*, including *Asthivaha* and *Majjavaha Srotas* [7-9].

The *Ama Pakvashaya* is the disease's *Udbhava Sthana*, from which it travels to appear in *Asthi Dhatu* and the tissues that are connected to it, including *Sandhi*. *Asthi* and *Sandhi* are where the disease ultimately localizes, demonstrating its *Adhithana*. The condition is categorized as *Chirakari* and *Roga Marga* involved is *Madhyama*. *Asthi Kshaya* includes symptoms like *Asthibheda*, *Asthitoda*, *Asthi Shoola*, *Sandhi Shaithilya*, *Rukshata* and *Bala Kshaya*. These all features also related with other painful disorders associated with *Vata* vitiation [8-10].

Ayurveda Treatment of *Asthi- Majja Dhatukshays*:

- ✓ Foods like milk and ghee are advice along with herbal supplements like *Guduchi* and *Shatavari* to strengthen and nourish the bones. A high-protein diet, calcium and vitamin D supplements are used to support bone density and repair.
- ✓ *Rasayana* herbs, which are known for their ability to rejuvenate and strengthen bones, like *Ashwagandha*, *Hadjod* and *Bala*, are used in Ayurvedic medicine.
- ✓ Modern pharmacological methods, on the other hand, frequently use hormone replacement therapy to treat postmenopausal osteoporosis.
- ✓ Ayurveda suggests *Yoga* and *Abhyanga* as ways to regulate *Vata Dosha*. These approaches promote joint stability, increase circulation and nourish tissues, etc.
- ✓ Ayurveda also uses *Panchakarma* treatments, including *Basti* to ensure both preventive and therapeutic care in *Asthi Kshaya* [10-12].

Additionally Ayurveda suggested some specific *Chikitsa* for *Asthikshaya* as mentioned in **Table 1**. These approaches are prescribed based on the severity and symptoms of disease [13].

Table 1: *Chikitsa* for *Asthi- Majja Dhatukshays*

<i>Chikitsa</i>	Description / Examples
<i>Bahya & Abhyantara Snehana</i>	Use of internal and external oleation with <i>Vatahara</i> drugs specific for <i>Asthi- Majja Dhatukshays</i> .
<i>Kayaseka</i>	Strengthens bones, combines <i>Snehana</i> & <i>Swedana</i> , and improves <i>Dhatu Sara</i> .
<i>Asthivaha Srotodushti Chikitsa</i>	Similar to <i>Asthi Pradoshaja Vikara Chikitsa</i> . <i>Panchakarma</i> with <i>Ksheera</i> and <i>Ghrita</i> processed with <i>Tikta Dravyas</i> are used.
<i>Upanaha</i>	<i>Vatahara</i> drugs applied locally; includes <i>Saagni</i> and <i>Niragni</i> forms for 12 hrs.
<i>Agnikarma</i>	Local therapeutic cauterization; effective in <i>Mamsa</i> , <i>Snayu</i> , <i>Asthi</i> and <i>Sandhi</i> vitiations by <i>Vata</i> .
<i>Bandhana & Unmardhana</i>	Bandaging and therapeutic massage as advised by <i>Sushruta</i> , useful in musculoskeletal issues associated with <i>Dhatukshays</i> .
<i>Shodhana Chikitsa (Vasti)</i>	<i>Tikta Rasena Siddha Ksheera-Ghrita Vasti</i> ; milk, <i>Tiktaka Ghrita</i> , <i>Tila Taila</i> , honey used to induce osteogenesis. Provides nourishment and strengthening <i>Asthi Dhatu</i> . It is considered prime therapy for <i>Vata</i> disorders; enhances strength of <i>Asthi Dhatu</i> .
<i>Rasayana Therapy</i>	Strengthens <i>Dhatu</i> s; examples includes <i>Guggulu Rasayana</i> , <i>Brahma Rasayana</i> and <i>Chyavanaprasha</i> , etc.
<i>Bhagna Chikitsa</i>	Used when <i>Asthikshaya</i> leads to fractures. It may utilizes <i>Rasana Kalka</i> , <i>Abha Churna</i> , <i>Abha Guggulu</i> and <i>Lakshadi Guggulu</i> .
Herbal Supplement	<i>Ashwagandha</i> , <i>Vacha</i> , <i>Madhuyashti</i> and <i>Vidarikanda</i> , etc. are exhibit anti-osteoporotic activity.

Conclusion

According to Ayurvedic principles, *Asthi Dhātu* is nourished through the process of biotransformation by *Ahara Rasa* and *Meda Dhātu*. Maintaining bone health depends on the *Asthivaha Srotas* and *Asthyagni*. The development of *Asthi Kshaya* is intimately associated with the vitiation of *Vata Dosha*, as described in Ayurvedic literature. The framework of *Vata Vyadhi* provides a full understanding of the pathophysiology of this illness, wherein *Margavarana* and *Dhātu Kshaya* both play crucial roles. Because the channels are inherently unstable and lack *Sneha*, regular exposure to causative factors aggravates *Vata*, which subsequently enters the *Asthivaha Srotas* causes degeneration. Three main categories of causes include food and lifestyle factors such as excessive exposure to wind or dryness, emotional problems, malnutrition, and overexertion. Furthermore, *Vata Prakriti* and genetic predispositions are important factors that increase vulnerability to *Asthi-Majja* depletion. People with *Vata Prakriti* are naturally more susceptible to *Asthi Kshaya* due to their structural and constitutional framework.

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