A Critical Overview on the Asthi Kshaya W.S.R.T. Osteoporosis

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Abstract:
Ayurveda is a science which deals with maintaining health and preventing disease in the body. Equilibrium of Dhatus contributes to health. Asthi is fifth dhatu mentioned in the seven Dhatus. It does dharana karma in the body. Disturbance to this equilibrium of Dhatus leads to formation of disease. Decrease in Asthi dhatu is called as Asthi kshaya and it can be compared with osteopenia or osteoporosis according to modern science. Osteoporosis is a global problem and females have higher risk to it, when compared to males. Treatment explained in modern science comes with adverse effects. So this study is attempt to conceptualize the Ayurveda principles related to Asthi dhatu and Asthi dhatu kshay. Asthi dhatu and Vata dosha have interrelationships between them. Also there is relation between Asthidhara kala and Purishadhara kala. Its main location is Pakvashaya (large intestine). Basti treatment is best remedy in the for osteoporosis.

Keywords: Asthidhatu, Vata dosha, Osteoporosis, Basti.

Introduction:

Human body is a combination of Doshas, Dhatus and Malas as per Ayurveda. Health is a state of equilibrium of Dhatus. Any other state than this equilibrium is called as Disease. This state may contain either increase or decrease. Asthi kshaya is a condition of decrease in Asthi dhatu. It can be compared to osteopenia or osteoporosis where there is decrease in bone tissue. If bone resorption is more than bone formation, it leads to formation of osteopenia or osteoporosis. It is divided into two types, primary and secondary. Primary osteoporosis occurs naturally due to aging process. Secondary osteoporosis occurs due to any clinical disorders like endocrine disorders, gastrointestinal or biliary tract disease, renal disease. Modern treatment aims at prevention of further loss of bone tissues by giving calcium, vitamin D supplements with anabolic steroids which may cause severe side effects in the body. Due to this, it is essential to provide safe, efficient, economic, natural and cost effective alternative measure to manage osteopenia or osteoporosis. Keeping this in mind, this present study has been carried out to critically overview Asthi dhatu kshaya with special reference to Osteoporosis.

Aims and Objectives –

Aim:
To study the Asthi kshaya with special reference to osteoporosis.

Objectives:
1. To study the concept of Asthi kshay according to Ayurveda.
2. To study the concept of Osteoporosis.

Material and methods –
1. Literary review of Asthi dhatu in all Ayurvedic texts.
2. Review of available information regarding osteoporosis.
3. Review of internet material, Journals, magazines and previous research papers related to this subject.

Review of literature:

Asthi dhatu:

Asthi is one of dhatu mentioned in total seven Dhatus. Others are Rasa, Rakta, Mamsa, Meda, Majja and Shukra. Asthi is at fifth place in nourishment sequence. Means Rasa dhatu gets first nourishment, then Rakta dhatu, then Mamsa dhatu etc. This is the hardest and firmest dhatu in the body. Gets its nourishment from Meda dhatu. It is predominantly made up...
of Pruthvi Mahabhuta (Pruthvi or Prithvi means “earth”. The qualities of this dhatu are strong, rough, dry and hard. The function of asthi dhatu is “dharana” or support; it keeps the body erect. All the soft structures like muscle, vessels and nerves are found around this Dhatu Asthi dhatu gives shape to the skeletal body and protects vital organs such as the heart, lungs etc.

Relation between Vata dosha and Asthi dhatu: ³

There is interrelationships between Vata dosha and Asthi dhatu. Whenever Vata dosha vitiation occurs, it results in Asthi dhatu kshay and Vice versa. It is called Ashraya ashrayi sambandha.

Role of Jatharagni and Dhatvagni: ⁴

According to Ayurveda, Agni (Jatharagni) plays major role in digestion of the food and its metabolism & absorption. Dhatvagni is a subtype of Jatharagni which is responsible for formation of respective potent Dhatus. Asthi dhatu is produced by the action if Asthi Dhatvagni. So it is clear that, proper formation, functioning and proportion if Dhatus is mainly dependent on the condition of respective Dhatvagni. Rasa dhatu is formed by the action of Rasa Dhatvagni on Aahararasa. In this same way, Asthi dhatu is produced by action of Asthi dhatvagni. All these Dhatvagnis are part of Jatharagni. So ultimately Jatharagni plays a major role in the formation of all the Dhatus including Asthi dhatu.

Kala Sharir:

Acharya Sushruta mentioned that Pakvashaya (large Intestine) is called as Purushadhara kala. He also stated that these Purushadhara kala resembles with Asthidhara kala (fifth kala) in their functioning. Due to this, the normal condition of large Intestine i.e. pakvashaya, which is main location of Vata dosha, is essential for normal formation and Functioning of Asthi dhatu. ⁵

Asthivaha srotas:

The srotas of Asthi dhatu is called as Asthivaha srotas. Causes of Asthivaha stotus dushti are – ⁶

- Ati vyayama (excessive heavy exercise)
- Ati sankshobha (excessive strenuous work out)
- Asthi vighatana (trauma to bones)
- Vitiation of Vata dosha

Asthi pradoshaj Vyadhi ⁷
- Asthi bheda
- Asthi shula
- Decolouration of hair and nails
- Dental pains and decay

Osteoporosis –

Causes : ²
- Senility
- Post Menopausal
- Protein deficiency
- Malnutrition
- Malabsorption
- Excessive protein loss
- Hyperthyroidism
- Cushing syndrome
- Drug induced osteoporosis
- Long term steroid therapy
- Phenobarbitone therapy

Clinical features ²

Generally osteoporosis is asymptomatic unless it shows complication like fractures. These loss of bone mass is due to loss of strength so that trauma is sufficient to cause a fracture. Generally dorso lumbar side is most common for fractures. Pain evolved due to these fractures is the cause for patient for going to physician. Other fractures includes Colle's fracture and fracture of neck of femur.

Examination: ⁸

The findings are so subtle and that can be missed. A slight loss of the height and increased kyphosis due to the compression of the anterior part of the vertebral bodies is seen in most cases.

Radiological observations:

Radiological evidence of decreased bone mass is more reliable, but about 30 % of bone mass gets lost before it appears on X-rays. The features which appears on X-ray are –

- Loss of vertical height of vertebra due to collapse
- Cod fish appearance i.e. a disc bulge in the adjacent vertebral bodies so that disc becomes convex
- Ground glass appearance of bones
Densitometry:  
This is the best method to classify the degree of osteoporosis, where the absorption of photons emit from the gamma emitting isotopes by the bone calcium is measure. There are two types of bone densitometry are available
1. Ultra sound based
2. Densitometry
It is the gold standard in the quantification of the bone mass.

Management:
Asthi kshay (osteoporosis) can be treated with shodhana Chikitsa or shama Chikitsa as per Ayurveda. In Shodhan chikitsa, Basti treatment is mainly preferred due to
1. Basti is prime treatment of Vata dosha
2. It causes balancing of agni (also dhvagni)
3. Causes normal movement of Vata dosha and purush mala from large Intestine.

Acharya Sushruta stated that, Purishadhara kala (Pakvashaya – large Intestine) resembles with Asthidhara kala (fifth kala) in their functioning. Hence Basti treatment helps in treating Vitiated Vata and Asthi dhatu simultaneously. For Asthi dhatu Chikitsa, Panchtikt Kshir basti (drugs possessed with milk) is preferred due to
1. Tikta rasa is suksma stotogami and having properties of dipana and pachana. It helps in removal of any obstruction in the srotas and helps in providing nourishment to deeply situated Dhatus like Asthi and majja.
2. As these basti is prepared with milk, which has Vata shamak properties due to its Madhura rasa, it is very useful in the management of Vitiated Vata dosha in very deeply situated Asthi and majja Dhatus.
3. In these , drugs are saturated with qualities of milk. Milk has Rasayana (rejuvenating) property. So body gets rejuvenated and helps to prevent the further bone degeneration and provides a sustained growth of Asthi dhatu.

Asthi kshay (osteooporosis) can be treated with shamana Chikitsa as per Ayurveda. Here we have to consider Vata dosha and Asthi dhvagni. As there is interrelationships between Vata dosha and Asthi dhatu (increase in Vata dosha causes Asthi kshaya and vice versa), we have to use the drugs having exactly opposite properties to Vata dosha. Properties which are responsible for shamana of Vata dosha are Snigdha, guru, shlakshna, sthira etc. 
Drugs which have these properties are tail (oil), ghruata, dashamula, bala etc. Also we have to correct Asthi Dhatvagni by use of tikta rasatmaka dravas which possess dipan and pachana property. In this, panchtiktak ghrita is important. As functioning of Asthi dhatvagni is corrected, it leads to normal formation, functioning and proportion of Asthi dhatu in the body. Using these principle, Asthi dhatu kshay (Osteoporosis) is treated by correcting Asthi dhatvagni.

Discussion and Conclusion:
Asthi is fifth dhatu mentioned in sequence of seven Dhatus. There is interrelationships between Vata dosha and Asthi dhatu. If there is increase in Vata dosha , it causes decrease in Asthi dhatu and vice versa. The formation, functioning and proportion of Asthi dhatu depends upon Asthi Dhatvagni. So disturbance in Vata dosha and Asthi dhatvagni affects Asthi dhatu.

Asthi kshay (Osteoporosis) can be very well managed with the use of Ayurveda principles which causes normal functioning of Vata dosha and Asthi dhatvagni. It ultimately leads to prevention of Asthi kshaya. It is achieved by following ways – 1) correction of functioning of Asthi dhatvagni , 2) Vata disha shamana Chikitsa 3) Basti and Rasayana treatment.

Bibliography: