

**REVIEW OF OSTEOPOROSIS & ITS AYURVEDIC MANAGEMENT****Talawar Pratiksha Dundappa**

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**ABSTRACT**

Osteoporosis is characterized by reduced bone mass and osteoporotic fracture constitutes a major public health problem. Today the Osteoporosis is major problem which is the most remarkably common in women. In Ayurveda there is no clinical entity which is described in *Samhitas* like Osteoporosis but this can be discussed under *Asthisaushirya* & *Asthikshaya*. *Asthisaushirya* means porous bones, *Hemadri* commented on word *Saushirya* as *Samrandhratwa* which means with pores. Ayurveda is only the science which gives prime importance to prevention. In Ayurveda there are many *upakramas* (Procedures) like *Basti*, *Lepa*, *Sechana* etc., which are useful for strengthens the bones. The present study is designed to review the Osteoporosis and its management through Ayurvedic measures.

**Keywords:** Osteoporosis, *Asthivikara*, *Asthisaushirya*, *Asthikshya*, *Basti*.

**INTRODUCTION**

On a simple level Osteoporosis means, become the bones or bone mass thin, since weak bones can lead to frequent fractures and bone deformation. Ayurveda always believes on prevention, as prevention is always better than cure.

There is no clinical entity mentioned in *Samhitas* like Osteoporosis but it can be disc used under *Asthikshyaya* & *Asthisaushirya*. *Asthisaushirya* means “porous bones”, *Hemadri* commented on word *Saushirya* as *Samrandhratwa* which means with pores<sup>1</sup>. There are many *upakramas* (Procedures) like *Basti*, *Sechana*, *Lepa* etc has a major roles in *Asthivikara*<sup>2</sup>. The present study is designed to review the Osteoporosis & its management through Ayurveda.

**AIMS & OBJECTIVES**

1. To review Osteoporosis according to modern science.
2. To review *Asthivikara* according to Ayurveda.

3. To study Ayurvedic measures in Osteoporosis.

**MATERIAL & METHODS**

The study is based on review of Ayurvedic & Modern text and also with researches related to the subject. In this study the following topics is going to be discussed.

1. A collective study on Osteoporosis from modern text.
2. Collective studies of *AsthiDhatu* & *Asthivikara* from Ayurvedic *samhita*.
3. Study of Ayurvedic measures in Osteoporosis.

**Modern Review:** The term Osteoporosis was coined by Pommerin in 1985 which literally means “porous bones”. Greek word osteon means the bone tissue & porosis is derived from *latinword* “porous” which means “full of pores”. Thus combined meaning of the word Osteoporosis is porous bones. The most important risk factor for osteoporotic fractures is reduced bone mass. During growth, bone mass in-

creases between the ages of 25 & 35 and falls thereafter in both sexes. It is most common in women than men due to oestrogen deficiency at the age of menopause. Genetic factors are important in the pathogenesis of Osteoporosis. Family studies suggest that genetic influences are accounted for 70-85% of individual variance in bone mass<sup>3</sup>.

**Pathogenesis:** The underlying mechanism in all cases of Osteoporosis is an imbalance between bone resorption & bone formation. In normal bone there is constant matrix remodeling of bone, up to 10% of all bone mass may be undergoing remodeling at any point in time.

Hormonal factors strongly determine the rate of bone resorption, lack of oestrogen, increases bone resorption as well as decreasing the deposition of new bone that normally takes place in weight-bearing bones.

Calcium intake is also important in determining the rate of post-menopausal bone loss. Osteoporosis may also occur as a complication of endocrine, inflammatory and neoplastic conditions, and as a complication of certain drug treatment and substance abuse.<sup>4</sup>

• **Causes of Osteoporosis**<sup>5</sup>

**Table 1:**

<b>Genetic</b>	Low body weight; Family history
<b>Endocrine</b>	Hypogonadism; Early menopause; Hyperparathyroidism
<b>Gastrointestinal disease</b>	Inflammatory bowel disease; Malabsorption; Chronic liver disease
<b>Inflammatory disease</b>	Ankylosing spondylitis; Rheumatoid arthritis
<b>Drugs</b>	Corticosteroids
<b>Lifestyle</b>	Diet/calcium intake; Exercise; Highly trained athletes
<b>Substance abuse</b>	Alcohol; Smoking
<b>Inherited</b>	Osteogenesis imperfect; Gaucher's disease
<b>Other</b>	Myeloma; Neoplasia; Pregnancy associated Juvenile

• **Diagnosis**

**A. Bone Mineral Density**

Plain radiographs are often normal in patients with Osteoporosis who do not have fractures & BMD measurements should be reserved for patients where there is reason to suspect the diagnosis on clinical level<sup>6</sup>.

Indication –

- Early menopause
- Hypogonadism
- Family history of Osteoporosis
- Previous fractures after minimal trauma
- Smoking /alcohol abuse
- Poor diet

- Steroid therapy.

The World Health Organization has established the following diagnostic guidelines-  
T-score: -1.0 or greater is normal

T-score between: -1.0 & -2.5 is low bone mass (Osteopenia)

T-score: -2.5 or below is Osteoporosis

**B. Radiographs-**

Osteoporotic spinal fractures can be confirmed by typical wedge shaped appearances of affected vertebra. Biochemical measurements are not usually helpful in diagnosis of Osteoporosis, serum alkaline phosphatase may be transiently raised following a fracture but as sustained eleva-

tion suggests an alternative diagnosis is such as Osteomalacia. Bone biopsy is not routinely required except to exclude other pathology.

### Management

#### 1. Lifestyle Changes-

Patients with mild to moderate reduction in BMD should be give general advice on life style factors such as limitation in smoking, alcohol, dietary calcium intake.

#### 2. Hormone Replacement Therapy-

HRT with estrogen is the treatment of choice for prevention of Osteoporosis. HRT is generally contra indicated in patients with history of breast cancer and endometrial cancer.

#### 3. Bisphosphonates-

It provides an alternative to HRT for the prevention and treatment of Osteoporosis. But it should be avoided in patients with dyspepsia, hiatus hernia and peptic ulceration.

#### 4. Calcium Supplementary-

Calcium supplement are widely used as an adjunctive to other treatments in the prevention and treatment of Osteoporosis.

**Ayurvedic Review:** First we will review about *Asthidhatu* & then *Asthivikara*.

**AsthiDhatu:** *Asthi* is derived from the root “*As+kthin*” meaning to stay or in the sense of stability. *Asthidhatu* is the fifth *dhatu* among seven dhatus. Nails & hairs are *mala* of *Asthidhatu*. It is *pitrajaghataka*<sup>7</sup>. It’s properties are *guru*, *kathina*, *sthula*, & *sthira murtimanta*. According to Charaka-charya in *dhatuutapattinyaya*, *Asthidhatu* formed from *medodhatu* & from *Asthidhatu* the nutritious part becomes *majjadhatu*<sup>8</sup>. Its function is *dehadharana*, *majjapusthi* & *ashraya* of *vatadosha*. The increase & decrease of *Asthi* & *vata* are inversely proportional to each other i.e. when *vata* increases *Asthidhatu* decreases & vice versa<sup>9</sup>. Hence the *hetu* which increases of *vata* will cause decrease of *Asthidhatu*. In

*sthulasthi*, internally there is *majjadhatu*-present<sup>10</sup>

**Asthivikara:** In Ayurveda there is no exact clinical entity mentioned in *samhitas* like Osteoporosis but it can be correlated to *Asthikshaya*, *Asthisaushirya*

**Asthikshaya-** In *Asthikshaya* there is pains, deformity in *Kesha*, *Nakha*, & in *Majjakshaya* there is *Asthisaushirya*, *timiradarshana* (Giddiness)<sup>11</sup>

**Asthisaushirya-** *Asthisaushirya* means porous bones. *Hemadri* commented on word “*Saushirya*” as *Sarandhratwam* which means with pores. This condition explained in context of *Majjakshaya*<sup>12</sup>.

From these above references we can discuss the Osteoporosis under *Asthisaushirya* & *Asthikshaya*.

#### • Ayurvedic management-

**NidanParivarjana:** Avoidance of factors that aggravating *Asthikshaya* i.e. *vatakaraharvihar* & *ativyayam*. According to modern science, factors aggravating Osteoporosis should be avoided eg. Smoking, alcohol, sedentary lifestyle, exercise, poor diet etc.

**Abhyantarchikitsa:** The following herbs are useful in strengthen the bones & also useful in fractures.

**Asthishrinkhala** (*Cissusquadrangularis*)-<sup>13</sup>

One of the synonyms of *Asthishrinkhala* is “*Asthiyuka*” which means it helps in maintaining the conjugation of *Asthidhatu*. It contains calcium oxalate as chemical constituent. *Vatadosha* contributes largely for occurrence of *Asthivikara* because of *ashrayibhava* of *Asthi* & *vayu*. *Asthishrinkhala* has *vatashamaka* property so useful in *Asthivikara* & inhibits further degeneration. It is useful in fractures by its *Sandhaniyaguna*.

**Ashwagandha-** (*WithaniaSomnifera*)<sup>14</sup>

Ashwagandha is useful in *kshyayavastha* by its *Balya* and *Rasayana* property. Thus it is beneficial in *Asthikshaya*.

**Arjuna** (*Terminalia Arjuna*)<sup>15</sup>-

It is useful in fractures by its '*Sandhaniya*' property.

**Gandha Tailam**<sup>16</sup> *Gandhatailam* is *kalpa* described by Vagabhatacharya in the treatment of *Asthibhagna*. It is used in the form of *abhyantarapana*, *nasya*. It is useful in strengthens the bones. Thus it will be beneficial in prevention of Osteoporosis.

**1. PanchakarmaUpakramas-**

**BastiChikitsa**-*Basti* is one of the best *shodhanachikitsa* of *Vatadosha*. *Basti* acts on *Asthivaha* & *Majjavahasrotas*. Acharya Dalhana described that *Purishadharakala* is resembles to *Asthidharakala* so *Basti* is the way to reach up to *Asthidhatu* as it is induced through *Purishadhara kala*<sup>17</sup>

The function of *Asthidhatu* is *dehadharana*, *Majjapusthi* & *ashraya* of *Vayu*. The increase & decrease of *Asthi* & *Vata* are inversely proportional to each other i.e. when *Vata* increases *Asthi* decreases & vice versa. *Basti* is best treatment for *Vatadosha*.

*Tikta rasapradhana Ksheerabasti* is very useful in *Asthivikara* as *tikta rasa* is *Vayu* & *Akasha Mahabhuta* *pradhana* & *Asthidhatu* have same constitutes of these *Mahabhuta*. Thus, *Basti* plays an important role in strengthen the bones and act as preventive measures for Osteoporosis.

**MatraBasti**- Charakacharya described in *Sidhhisthana*, *Matrabasti* is the most useful in *Vataja Vikara* & *Bhagna Vikara*<sup>18</sup>.

**Other Upakrama**- In *Asthibhagna Bandhana*, *Sechana*, *Lepana*, *Nasya*, *Abhyanga*, are also useful. In acute pain of *Asthivikara*, *Sechana* (*Tailadhara*), *Bandhana*, *Vedhana karma*, *Raktamokshana* plays important role to reduce the pains.

*Sechana* is done by *vatagnasidhatailam*, *Nyagrodhadi kshayam*. *Lakshya*-

*sidhha dugdha* is taken internally for strengthen the bones.<sup>19</sup>

**Pathyapathya**-The most important factor for preventing osteoporosis is Diet. The food that you eat can affect your bones. The sedentary lifestyle effects on your bones. Eating foods with a lot of salt causes to lose calcium can lead to bone mass loss. So avoid the junk foods, salty diet for healthy bones.

## DISCUSSION

Vitiating of *vata* & *dhatukshyaya* is natural phenomenon occur in old age. *Vatadosha* contributes one of the important factors in *Asthi* related diseases as unique relationship of *Vata* & *Asthi*<sup>20</sup>. So in old age to prevent osteoporotic fractures Ayurvedic measures are useful.

There are many *upakramas* (procedures) like *Basti*, *Lepa*, *Tailadhara* are useful for strengthen the bones. From these *upakramas* the *Basti* plays important role in strengthen the bones. Acharya Dalhana described that *Purishadharakala* is resembles to *Asthidharakala*. So *Basti* is the way to reach up to *Asthidhatu* as it is induced through *Purishadharakala*.

According to modern science there are some contraindications, for Hormonal Replacement Therapy, Bisphosphonates. So in these conditions we can treat Osteoporosis through Ayurvedic treatment. The major risk of fracture in Osteoporosis can be avoided through Ayurvedic treatment modalities as prevention.

## CONCLUSION

After review, the key to treatment of Osteoporosis is the prevention or slowing porosity of bones. For prevention *Nidan-Parivarjan* (avoidance of causes) is the best treatment. By Ayurvedic treatment modalities i.e. *Basti*, *Sechana*, *Abhyanga*, *abhyantara chikitsa* & *pathyapathya*, we can

maintain conjugation of *Asthidhatu* & avoid the occurrence of fractures.

In breast cancer, endometrial cancer, hiatus hernia with Osteoporosis where the Hormonal Replacement Therapy is contraindicated, in this condition we can manage the Osteoporosis by Ayurvedic treatment.

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