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Osteoporosis: Ayurvedic Management

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ABSTRACT: Around the world one in three women and one in five men over the age of 50 experience an osteoporotic fracture in life time. Osteoporosis which literally means porous bone, is a disease in which the density and quality of bone become more porous and fragile, the risk of fracture is greatly increased. The loss of bone occurs silently and progressively . Often there are no symptoms until the first fracture occurs. The disease and its management have higher impact on quality of life of the affected person. Women are at higher risk as compared to men. The risk increases at menopause which is a transisition period of hormonal imbalance. Osteoporosis is a condition better prevented than treated but remains undiagnosed and untreated in many. Allopathic management is not devoid of side effects so it is the need of hour to carry researches for finding efficient, economic, natural, and safer formulations to manage the disease. This paper discuss the potentials and contributions of Ayurveda in prevention and management of Osteoporosis.

KEY WORDS: Asthikshaya , Asthisaushirya, Vatavyadhi, Silent killer, prevention

I. INTRODUCTION

Osteoporosis is a condition characterised by low bone mineral density and compromised microarchitectural integrity leading to structural failure of the skeleton even at low loads. Osteopenia is also a sign of **normal aging**, in contrast to osteoporosis which is present in **pathological aging**.

Bone strength reflects the integration of two main features, Bone density and Bone quality. Both low bone mass and bone quality play an important role in Osteoporosis. The former can be easily measured and hence become the diagnostic tool for Osteoporosis. It is called as the " SILENT KILLER" because symptoms menifests only when there is a fracture either in the vertebrae or any other bones so osteopenia / Osteoporosis is totally asymptomatic in the initial stages because low bone mass itself doesnot cause any symptoms.

W.H.O. has declared 2000-2010 as the "BONE AND JOINT DECADE" and October 20 is declared as world "OSTEOPOROSIS DAY". Govt of India under the department of AYUSH has also included Osteoporosis in its "Golden Triangle Partenership Programme".

Both bone formation and resorption are governed by complex interactions of genetic, environmental, hormonal, age related and life style factors. Bones grow in size during the first two decades of life, with acceleration during adolscence , followed by a period of consolidation. Bone mass subsequently declines with aging. This is universal phenomenon, occurring in both sex and all races. Women have less bone mass than men, with aging difference becomes more pronounced and menopause accelerates osteoporosis in women.

Nowdays people are more health conscious and undergoing routine health checkup for hypertension, Diabetes, Lipid profile, liver and Kidney functions test. But they miss the test to assess the quality of bone. Even medical professionals are least bothered about it so osteopenia/ osteoporosis is diagnosed at devastating stage. Early detection and prevention of fracture is the vital step in treating osteopenia. Currently no treatment exists to reverse established osteoporosis. The treatment is mainly aimed to prevent further bone loss, to prevent complication of fracture. Ayurveda has immense potentials in the treatment of Dhatvagnivyadhi like osteoporosis. A lot of work have been carried out and results are promising but documentation of the studies are not proper.

PATHOGENESIS: Along with aging, daily remodelling leads to a gradual restructuring of the bone. Resorption of the minerals on the inside of the cortical layer and in the bone cavity itself leads to loss of trabecular bone and a widening of the bone cavity. This is partly compensated for the gradual addition of extra layers of mineral to the outside of the cortical layer. Due to this reason bones get slightly thicker. But the danger is that

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they are not getting any denser. In fact peak bone mass reached in early adulthood gradually declines as people get older. Bone architecture and continual remodelling combines to have a huge impact on the pathophysiology of osteoporosis. For example young adults with wider femur might be at higher risk for hip fractures late in life because on average wider bones tend to have thinner cortical layers. Thinner layer will be more susceptible to resorption later in life.

CAUSES OF OSTEOPOROSIS : On the basis of aetiopathogenesis osteoporosis is classified in two types, Primary and Secondary osteoporosis.

Primary osteoporosisis more common form and is due to age related loss of bone. Risk factors and aetiological factors of primary osteoporosis are advanced age, H/O fracture as an adult, low body mass index (BMI < 19), female gender, caucassion race, menopause, low calcium diet, Mg &Vit D deficiency, smoking, or tobacco in any form alcoholism, lack of exercise (sedentary life style).

Secondary osteoporosis results from the presence of other disease or conditions that predispose to bone loss. Secondary osteoporosis has an equal sex distribution and can occur at any age.

SYMPTOMS : Osteoporosis is asymptomatic in the begining until a vertebral or any other fracture occur. It is hence termed as "Silent Killer". The most common fractures associated with osteoporosis occurs at hip, spine and wrist. Vertebral fracture may result in serious consequences , including loss of height, intense back pain, and deformity (some times called Dowagers Hump). All these consequences over the hip, spine occur due to micro fracture inside the bone. A hip fracture often require surgery and may result in loss of independence or death.

DIAGNOSIS : As osteoporosis has no obious symptoms, it is important to go to the doctor if any risk factors apply to the person. By making positive life style changes and following appropriate treatment stratergies in consultation with doctor. Osteoporotic fracture can be prevented, doctor will go through medical history that includes information on any recent facture and may go for appropriate test. This may be one form the following :

1) Bio Chemical Marker
a.) Bio chemical markers of bone formation
b.) Bio chemical markers of bone resorptoin
2) Radiographic findings
3) Bone Densitometry
a) Single Photon absorptiometry
b) Dual photon absorptiometry
c) Dual xray absorptiometry
d) Qualitative compromised tomography
e) Quantitave ultrasound
4) Bone mineral Density (BMD) Test
Normal –T score -1 or above
Osteopenia – T score -1 and greater than -2.5
Osteoporosis – T score -2.5 or lower
Severe Osteoporosis – T score -2.5 or lower and presence of at least one fragility fracture

AYURVEDIC MANAGEMENT : As we know allopathic drugs are not devoid of adverse effects . Now most of the people have shown their interest in Ayurveda so it is our moral duty to provide natural and safer formulation to manage and prevent this disease.

As per classics of Ayurveda, the disease entities Asthikshaya ,Majjakshaya, Asthisaushirya, Asthiavritvata, all resamble to osteoporosis and all these disease should be treated like any other vatavyadhi. The process of sampraptivightan is termed as Chikitsa. The following mode can be formulated in Chikitsa of Asthikshaya.

1. Nidaanparivarjana
2. Shodhana
3. Shamana
4. Rasayana
5. Pathyaapathya

Nidaan Parivarjan : while considering Asthikshaya prevention should be the first step . Indulgence in some causative factor can be avoided which can cause osteoporosis in future such as smoking, sedentary life style, low caicium diet, avoiding sun light.

Shodhana: According to Acharya Charaka (Ch. Su. 28/17) mentioned Basti prepared with KsheerGrita for Shodhana treatment of Asthikshaya. As Basti treatment is best for Vatavyadhi.

Shamana : The use of SwayoniDravyas in the management of Kshaya is advocated in Ayurveda. The Dravyas which are Swayoni i.e. similar to the irrespective Dhatusare to be used for the treatment of the respective DhatuKshaya. Here in AsthiKshayaDravya similar to AsthiDhatu should be used. This is based on the SamanyaSiddhanta. This Samanya is described in 3 types.

1. DravyaSamanya
2. GunaSamanya
3. Karma Samanya

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Among these DravyaSamanya is considered the best for the treatment of DhatuKshaya. The SamanaDravya for AsthiDhatu is explained in classics as "AsthiTarunasthana".
The SamanyaDravya used for AsthiKshaya is
1. AjasthiBhasma
2. AsthiBhasma of other animals
3. KukkutandaTwakaBhasma
4. KacchapaPristhaAsthiBhasma
5. PravalBhasma and Pisthi
6. SankhaBhasma
7. KapardikaBhasma etc.
8. ShuktiBhasma (both MuktaShukti and JalaShukti)

The following preparations may also be advocated in management of AsthiKshaya.
Taila:
1. Ksheera Bala Taila
2. Chandana Balalakshadi Taila
3. Dhanvantari Taila
4. Bala Ashwagandhadi Taila
5. Lakshadi Taila

6. Maha Lakshadi Taila
Ghrita:
1. Panchatiktaka Guggulu Ghrita
2. Patoladi Ghrita
3. Maha Tiktaka Ghrita
4. Panchtikatak Ghrita
5. Tiktak Ghrita
6. IndukantaGhrita

GugguluKalpa: Various Gugguluformulations indicated in the AsthiBhagna and VataVyadhiChikitsa can be given to the AsthiKshaya. Patient who suffers from different types of pain the preparations are:
1. LakshadiGuggulu

2. AbhaGuggulu
3. YogarajGuggulu

4. MahaYogarajGuggulu
5. Aditya PakaGuggulu etc.
Ksheera Paka:
1. Arjuna Ksheera Paka
2. Ashwagandha Ksheera Paka
Rasayana:
1. Ashwagandha
2. Shatavari
3. Dwitiya Brahma Rasayana
4. Chturtha Triphala Rasayana
5. Chyavanprash Rasayana
6. Shilajatu Rasayana

PATHYAPATHYA
1. **Pathyas:** Madhura Rasa Pradhana Dravyas, Shali, Masa, Ksheera, Dadhi, Mastu, Dadhi Mastu, Takra, Navneeta, Ghrita, Mamsa, Mamsa Rasa, Vata Nashaka Tailas, Niyamita Vyayamas.
2. **Apathyas:** Katu, Tikta, Kashaya Rasa PradhanaDravyas, Ruksha, Sheeta, Laghu, Vishada, Shushira etc. Gunas. Pradhan Dravyas, Madya (alcohol) Shuska, Shak, ShuskaMamsa,Adhyasana,AnasanadiMithyahara, Ativyayama and Ativyavaya. BalaVadvigraha, Gaja, TurangadiSigra Yana, Divaswapna and Ratrijagaran, Vegadharan, TiksnaAoushadhis, TiksnaAushadi smoking

II. CONCLUSION

Osteoporosis weakens the bones significantly which ultimately may result in to fracture. After attaining the fracture quality of life deteriorates and life span may get shorter. It is very important for people to understand the problem to its core. There are number of treatments that can provide relief to patients suffering from this disease but they have many side effects as well. As we know it is better to prevent osteoporosis than to treat it, so in order to reduce the probability of osteoporosis we should have follow healthy Ayurveda diet and life style over the time

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