



## EFFECT OF ASTHISHRUNKHALA GRANULES IN LOW BONE MINERAL DENSITY IN POSTMENOPAUSAL WOMEN – A CASE REPORT

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## ABSTRACT

Osteoporosis is a multifactorial and slowly emerging global health problem. The decrease in plasma sex steroid levels during the menopause transition leads to a series of changes that affect body composition and Bone Mineral Density (BMD). In this period, BMD progressively decreases with an accelerated decline in density over the early postmenopausal years. Skeletal health is essential to maintaining quality of life, as it is known that qualitative bone helps to prevent untoward bone fractures. This study aimed to evaluate the effect of Asthishrunkhala granules on low bone mineral density in postmenopausal women.

**Keywords:** Asthishrunkhala; Bone Mineral Density; menopause; Cissus quadrangularis; Ayurveda

## INTRODUCTION

Menopause is generally defined as the cessation of menstruation at the end of reproductive life due to loss of ovarian follicular activity. Menopause is a natural phenomenon and a gradual transitional phase.

During the reproductive life, a woman is protected by female hormones, i.e. estrogen and progesterone. During menopause, women enter an estrogen-deficient phase. It involves several biological and

physiological changes that occur in the body. This leads to the ageing process in women resulting in psychosomatic changes like hot flashes, night sweating, sleep disturbances, cardiovascular symptoms, loss of libido, vaginal dryness, osteoporosis, mood swing, irritability and so on.<sup>[1]</sup> As mentioned in Ayurvedic scripture, 50 years is the average age of menopause, when the body is entirely in the grip of senility. This period of life deals with 'Jarapakva avastha', which lies in a 'Sandhi Kala' ( a mid-period of yuvavastha and Vriddha avastha ). During this period, there is a peak level of pitta dosha and during 'Jarakala', Vatadosha remains in aggravated condition along with vitiated pitta, resulting in 'pachana' and 'shoshana' of saptadhatu including Asthidhatu. This results in loss of bone mass, which makes bones more fragile and causes osteoporosis. After menopause, the women lose an average of 3% of bone mineral density (BMD) every year, causing osteopenia and eventually, osteoporosis. Fragile bones tend to fracture easily; hence, vertebra, femur, and wrist fractures may occur. The trabeculated bones are more affected.<sup>[2]</sup> The morbidity arising from pelvic fracture is considerable.

### CASE REPORT

A female patient, aged 51 years, was diagnosed with osteopenia based on Bone Mineral Density (BMD) T-score, with a menstrual history of menopause for three years. By occupation, the patient was a primary school teacher. She has been suffering from backache, bilateral knee joint pain, and difficulty in prolonged standing and sitting for two years. The patient was recommended for oral calcium and vitamin D supplements and Hormone replacement therapy (HRT). However, the patient was not willing to take oral calcium supplements and HRT, so in search of a better option, she approached ayurvedic treatment. History-taking revealed that all the symptoms developed gradually for the last 2-3 years after her menopause. She was suffering from hot flashes often, but her Appetite was good; her Sleep pattern was disturbed due to night sweating and perspiration. No significant family history was present. There were no H/O menstrual disturbances, premature ovarian fail-

ure, estrogen or hormone therapy use, osteoporosis medication use, fragile fracture, or family history of osteoporosis, Hypertension, Diabetes mellitus, thyroid dysfunction, ischemic heart disease, or any other comorbidities. No addiction to tobacco, smoking and alcohol.

### On General Examination

BP- 124/80 mm of Hg

Pulse - 82/min.

RR- 16/min

Temp- 98.6°F.

### Investigation

Hb- 11.4 gm%

BMD- -2 SD

### Treatment regimen

Drug - Asthishrunkhala granules

Duration - 2 months

Dose - 5 gms.

Frequency - BID (after meal)

Route of administration -Oral

Anupana- Milk (40ml)

### Drug Properties

Asthishrunkhala<sup>[3]</sup>

According to Ayurveda, the properties of Asthishrunkhala are Vata-Kaphanashaka and Asthi sandhanakara.

•Latin name- Cissus Quadrangularis

•Rasa- Madhur

•Guna- Laghu, Ruksha

•Virya- Ushna

•Vipaka- Madhura

•Dosha- Pacifies Pitta dosha

•Dhatu- Rasa, Mamsa, Asthi, Sukra

•Organ effort- Bones, Joints

### Phytochemistry

Phytochemistry studies of Asthishrunkhala (Cissus Quadrangularis) have shown the presence of various versatile constituents such as flavonoids, vitamin C, stilbene derivatives and many others, e.g. Resveratrol, piceatannol, pallidol, perthenocissin and phytosterols. Of these, ascorbic acid, triterpene, beta-sitosterol, ketosteroid, two asymmetrical tetracyclic triterpenoids, and calcium were identified as major constituents.<sup>[4-6]</sup>

### Medicinal use of *Cissus quadrangularis*<sup>[7]</sup>

*Cissus Quadrangularis* has the following medicinal properties.

- 1) Strengthens bones and joints
- 2) Restore bone mass
- 3) Accelerates the rate of fracture healing
- 4) Anodyne- Pain relieving
- 5) Anabolic supplements (mainly for bones)
- 6) Aphrodisiac

### RESULT

Bone mineral density increases up to -1 SD.

Along with improved BMD, associated symptoms like backache and knee joint pain are reduced significantly.

### DISCUSSION

This case study represents a unique investigation in which the BMD of an osteopenic postmenopausal woman was monitored over two months. Considering the patient's history and examination, treatment was planned. Presentation of the patient with backache and bilateral knee joint pain showed the involvement of vata dosha associated with Asthivaha Strotas. low bone mineral density shows degenerative changes in the bone, which results from Pachan & Shoshan effect of pitta and vata dosha, respectively. Considering the anabolic properties of Asthishrunkhala, which facilitates bone healing by accelerating the proliferative physiological process in the bone, the choice of drug was Asthishrunkhala. *Cissus quadrangularis* has strengthening effects on bones, joints, ligaments and muscles. It increases the rate of bone regeneration and improves blood circulation and nutrient supply to the bone. It preserves bone tissue anabolism and regeneration and promotes osteoblastic proliferation and differentiation.

It should be noted that during the two months of consumption of Asthishrunkhala granules, no physical

activity or dietary records were maintained. Together, this study suggests that the intervention of 5gm of Asthishrunkhala granules with milk for at least two months may positively impact BMD in postmenopausal women with osteopenia.

### CONCLUSION

This case study observes that the internal application of Asthishrunkhala granules with milk effectively manages low bone mineral density in postmenopausal women. Early detection and treatment of osteoporosis will help prevent significant fractures and comorbidities in women.

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