



Title: Comparative clinical study between *lashuna* and *shatavari* in minimizing the risk of postmenopausal osteoporosis

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Abstract:

Ayurveda is one of the old traditional science which deals with healthy and diseased state of human beings through lifestyle, dietary supplements, medication, yoga, purification techniques. In decades of old age can be reduced by the rasayana therapy, which is the line of treatment for *vriddha* age groups with dominant of *vata dosha*, *agni mandya*, *dhatu and upadhatu Kshaya*. Women are mostly vulnerable at early stage by the *vata dosha*, *dhatu Kshaya* especially *asthi dhatu*, *upadhatu* like *aartava* etc. *Kshaya* of *asthi dhatu* in menopausal period can be considered as menopausal osteoporosis. Prevention is better than cure as per this proverb, this study was held to prevent the risk of postmenopausal osteoporosis with the

drugs *lashuna* and *shatavari* treated in comparison method. By its *guna* of *snigdha*, *vatahara*, *rasayana* etc.

Keyword:

rajonivritti, *asthi kshaya*, postmenopausal osteoporosis

Aims and Objects

- To assess the effect of *lashuna* in minimizing bone loss.
- To compare the efficacy of *lashuna* with *shatavari*. ..

Materials and Methods:

- The study was conducted on 40 women of menopausal age for a period of 12 weeks. Clinical features and objective parameters were documented before and after treatment.

Statistical Analysis Used:

- Observations of the study were analyzed and findings were evaluated by using statistical methods (Student's *t* test and unpaired *t* test)

Results:

The present study shows that the trial drug *lashuna* tablet is effective to improve clinical features and objective parameters significantly. BMD was observed to statistically significant level ($p < 0.01$) where as the rise in x-ray and serum calcium were statistically significant ($p < 0.01$). serum alkaline phosphatase data is not significant statistically ($p > 0.05$). In the group treated with *shatavari* tablet improvement was obtained in x-ray and serum calcium which were statistically significant ($p < 0.01$). alkaline phosphatase data showed statistically insignificant improvement ($p > 0.05$). Improvement in parameters suggests *lashuna* tablet improves the calcium metabolism.

Discussions:

Madhura, tikta rasa, snigdha and guru guna, vatahara, balya, can be used to control *asthidhatu Kshaya* which will help for reducing risk of postmenopausal osteoporosis.

Lashuna encounters *vata dosha* which having the inter relation with *asthidhatu* by its *madhura, snigdha, guru, vatahara* guna.

Conclusion:

The results suggest that *lahuna vati* is significantly effective in the preventive aspect of post menopausal osteoporosis.

Introduction:

Osteoporosis may be defined as a reduction in bone mass per unit volume such that fractures may occur with minimal trauma. It is the most common metabolic bone disease in the Western world. There are many causes, but by far the most common and most important is postmenopausal osteoporosis, which affects most women by the end of their livesⁱ. Despite an increasing awareness of the importance of osteoporosis in some sections of the population, many women are still not sufficiently aware of the condition, do not appreciate the way in which it may affect their lives and, most importantly, do not understand that it is preventable. It is the duty of healthcare professionals to provide women with an impartial account of the current knowledge regarding osteoporosisⁱⁱ.

Menopause is the cessation of periods of 12 months. During young stage the female are protected by female hormone i.e. oestrogen and progesterone in Menopause females are enters in oestrogen deficient in their lives, it in one year ageing process along with psychosomatic problems. Old age is vulnerable time for both men and women – but for women it is even more.ⁱⁱⁱ So, in addition to process of senility, women suffer simultaneously from the inevitable scars of Menopause.

In the present study, has taken for the study, where there will be decrease in the density of the bone tissue. The term “Osteoporosis” was coined by Pommer in 1885 which literally means “porous bones”.

Osteoporosis is defined as “a disease in *Asthi - Kshaya* which the density and quality of the bone are reduced, leading to

weakness of the skeleton and increased risk of fracture, particularly of the spine, wrist and hip". In 1994 World Health Organization defined Osteoporosis as "a systemic skeletal disease characterized by low bone mass and bone architectural leading to increased risk"^{iv}. Menopause is normal process but now a day it becoming major health problem in developing countries like India. Osteoporosis has haunted women since the dawn of history. Egyptian mummies from 4,000 years ago have been found with the tell-tale dowager's hump. Osteoporosis is a major international health problem, accentuated by increasing longevity. Osteoporosis is estimated to affect 200 million.

The number of women with osteoporosis, i.e., with reduced bone mass and the disruption of bone architecture, is increasing in India. While data on prevalence of osteoporosis among women in India come from studies conducted in small groups spread across the country, estimates suggest that of the 230 million Indians expected to be over the age of 50 years in 2015, 20%, i.e., ~46 million, are with osteoporosis^v. Thus, osteoporosis is a major public health problem in Indian women.

The risk even increases at Menopause, which is a physiological transition period of hormonal imbalance. In *Ayurveda* Menopause deals with *jarapakvaavasta* of the body. *Jara* and *Rajonivritti* are manifested due to progressive reduction in the functional ability of *agnis*, which results into an inadequate tissue nutrition. This nutritional imbalance triggers the irreversible degenerative changes in "*Sapta Dhatus*". The disease Osteoporosis is somewhat similar to description of *Asthi*

Kshaya in which metabolism of *Asthi Dhatu* is disturbed. *Rasayana* therapy has proved efficacious in managing and preventing many chronic conditions till date. As Postmenopausal Osteoporosis is a disease related to aging.

Rasayana can provide better alternative in increasing quality of life. Here, the drug *Lashuna* also one of the *Rasayana guna dravya*. Due to (properties as heavy & general *rasas* (tastes), *Lashuna* cures common diseases, increases longevity, is appetiser, aphrodisiac blessed or fortunate and foremost for disease-free state. It is clarifier of memory, intellect, strength, age (longevity), complexion & eyes (sight), producer of good smell in mouth, cleaner of the channels. In dislocation, fracture & diseases of bones, in the persons suffering from all diseases of *vata* are indicated by *Lashuna*.



Aims and Objects:

To study the disease postmenopausal osteoporosis – as per *Ayurveda* and modern concept.

To assess the effect of *lashuna* in minimizing bone loss.

To compare the efficacy of *lashuna* with *shatavari*.

Material and Methods

The study was conducted on 40 women of menopausal age for a period of 12 weeks. Clinical features and objective parameters were documented before and after treatment.

Observations:

62.5% patients were belonged to 46-50 age group, 15% were 51-55 and 56-60 age group each, 7.5% were 40-45 age group.

Maximum 62.5% of patients were Perimenopausal and 37.5% were postmenopausal on registration. 37.5% patients were belonged to the duration of <2 years of menopause ,22.5% were between 4 to 6 years ,25% were between 2 to 4 years,15% were >6 years. 52.5% patients had menopause between the age of 46-50 years, 32.5% patients were between 51-55 years ,12.5% patients were between 40-45 years ,2.5% patients were between 56-60 years. 100 percentage of patients were married. 37.5% patients had primary education, 32.5% patients were uneducated ,20% patients had secondary education, 10% patients had higher secondary education. 30% patients were lower middle class,27.5% were poor & middle class each, 15% were upper middle class. 82.5% patients were belonged to rural,17.5% patients were belonged to urban. 67.5% ,32.5% of patients had irregular and regular menses respectively .Quantity of mense was excess ,moderate and scanty for 50% ,37.5% ,12.5% of patients respectively .Duration of mense majority 42.5% were observed in 2-3 days ,40% were observed in >3days ,17.5% were observed in 1-2 days .50% ,30% ,20% of patients had 2-4, 4-6, 0-2 months period of interval respectively. 100% of patients were observed in multi-parity. 62.5% of patients were belonged to vegetarian and 37.5% of patients were under mixed diet. 65% of patients were habited for *vishamasana* , and 35% of them were *samsanain* dietetic habit. 77.5% of patients were having *raja manasa prAkriti* ,15% of patients were having *tama manasa prakriti* ,7.5% were having *satvamanasa prakriti*. 100% of patients were belonged to *praudha*. 67.5% ,32.5% of patients were presented with *avaraand madhyama Vyayamashakti* respectively.

Among 40 patients 97.5%,77.5%, 37.5%, 27.5%, 15% of patients has the complains of *asthivedana*, *katishoola*, *sandhishoola*, *shrama*, *keshapadana*respectively.

Results:

In patients treated with *lashuna* tablet BMD was observed to statistically significant level ($p<0.01$) where as the rise in x-ray and serum calcium were statistically significant ($p<0.01$). Serum alkaline phosphatase data is not significant statistically ($p>0.05$). In the group treated with *shatavari* tablet improvement was obtained in x-ray and serum calcium which were statistically significant($p<0.01$). alkaline phosphatase data showed statistically insignificant improvement ($p>0.05$).Improvement in parameters suggests *lashuna* tablet improves the calcium metabolism.

In majority of patients, markers of bone formation and bone resorption were in normal range. Yet they were used to judge the effect of therapy on bone turnover.

When compared with group A and group B .Group A had better relief in symptoms of *asthivedana* but on comparison shows statistically insignificant (>0.05). In *katishoola* group A 85.7% of relief was found but group B had 62.5% of relief on comparison both groups the data is statistically insignificant ($p>0.05$)on symptoms of *sandhishoola* group B 89.1% had better result when compared to group A (72.9%) and the inter statistical shows significant data (<0.001). *Shrama* group B 86.4% ,group A 72.2% group B had better relief percentage and the inter statistical shows significant data (<0.001) and *keshapadana* group A 76.1%, group B 75% group A had better result when compared

to group B and the inter statistical data is significant ($p < 0.05$).

Better result was found in group A in x-ray 67.5%, serum calcium 18.6% but inter statistical found to be in significant and insignificant respectively .on all other features like BMD 61.4%, alkaline phosphatase 3% in group B but interstatistical data found to be in significant ($p > 0.05$).

The present study shows that the trial drug *lashuna* is effective than standarad group *shatavari* group .But interstatastical analysis shows insignificant results. No adverse effect of the trial drug was observed during the study.

Discussions:

Tablet form of those two groups drug (*lashuna* and *shatavari*) were had good result, but it is not possible to take raw drug regularly, tablet is easy to take daily.

Madhura, tikta rasa, snigdha and guru guna, vatahara, balya, can be used to used to control *asthidhatu Kshaya* which will help for reducing risk of postmenopausal osteoporosis.

Lashuna encounters *vata dosha* which having the inter relation with *asthidhatu* by its *madhura, snigdha, guru, vatahara guna*.

After 3 months of treatment it was observed that, in Group A(*lashuna* tablet) 21% patients got marked improvement, 52.6% patients got moderate improvement and 21% patients mild improvement. In Group B (*shatavari* tablet) 20% patients got marked improvement, 60% patients got moderate improvement, and 20% patients got mild improvement. S

Conclusion:

1. Women's during their post menopausal age were vulnerable to osteoporosis
2. Due to aging process women were naturally developed decline on bone formations.
3. The disease entity postmenopausal osteoporosis was not described in classics of *Ayurveda*, it shows decline is due to the aging process of human life that which is taken over by the dominant of *vata dosha* and having the seat of *asthi dhatu* which leads to the *asthi Kshaya*.
4. Postmenopausal period diseases were not mentioned directly in any of the ayurvedic reference due to its *kalaja nidana* as a natural progress of the human life.
5. Especially for menopausal diseases like osteoporosis mostly the treatment should be based on HRT.
6. During *rajonivritti* period mostly the *vyadhis* were *vataja*, that which is unfavourable for all the *dhatu*s especially *asthi dhatu*, which leads to *Kshaya*



7. Due to the *vayu prakopa* and the *Kshaya* of *asthi dhatu* leads to the symptoms like *asthivedana*, *kativedana*.
8. Due to the involvement of *gambhira dhatu* it needs continuous supply of *poshaka dravyas* in the form of *rasayana*.
9. The drug *lashuna* had given a satisfied results on bone markers that which gives idea about the effect of drug on the bone.
10. The *rasa, guna, prabhava, karma* of *lashuna* had broken down the *Samprapti* that which reduces the *vata vridhhi* and *asthi Kshaya*.
11. Hence ,it can be concluded that in women at the risk of post menopausal osteoporosis and the symptoms of menopausal syndrome, *lashuna* gives better result
12. ALTERNATIVE HYPOTHESIS(H1) is accepted as

the trial drug significantly proved *lashuna prayoga* has effect on postmenopausal osteoporosis than the control drug *shatavari*.

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Ethical committee permissions details:

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