



STUDY OF DHATU SARATA AND ITS ASSOCIATION WITH OSTEOPOROSIS IN POST-MENOPAUSAL WOMEN

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ABSTRACT *Sarata* is a factor which tells the strength of all *dhatu*s. Due to variations in seasons, lifestyle, diet etc., *dhatu poshan* does not take place leading to various health hazards. This lifestyle change modifies *sarata* of every *dhatu*. With the changing diet and lifestyle patterns, bone diseases like osteopenia, osteoporosis etc. have evolved into a common health problem especially in post-menopausal women throughout the world. In osteoporosis, there is increased bone re-sorption and decreased bone formation. Post-menopausal women are more susceptible to osteoporosis because of low estrogen level or surgical removal of both the ovaries. BMD tests helps in the detection of osteoporosis which is measured by bone densitometer. BMD test helps in the detection of osteoporosis which is measured by bone densitometer. The pilot study of 50 subjects was done as per inclusive criteria. After performing densitometry, *dhatu sarata* examination was done with the help of standard *sarata* examination Performa prepared by C-DAC (center for development of advance computing) Pune. Graphical representation shows that there is significant relation between *asthi sarata* and osteoporosis. The percentage of *asthi dhatu sarata lakshanas* are very less in the subjects having osteoporosis. Hence, this study will be helpful in reducing the fracture risk in post-menopausal women by early evaluation and preventive measures.

KEYWORDS : DHATU SARATA, Osteoporosis, BMD, Post-menopausal women

INTRODUCTION:

“Sara” is the essence of all the Dhatus. *Sarata* is a factor which tells the strength of *dhatu*s. Condition of *dhatu*s should be known that whether they are strong or weak to prevent diseases. To know the strength of *dhatu*s, Ayurveda has explained *sarata parikshan*. *Dhatu sarata* is qualitative assessment of seven *dhatu*s and *sattva* (mind). It is done at physical and psychological level.

Osteoporosis is one of the major complication faced by the elderly women due to low level of estrogen or surgical removal of both the ovaries. In osteoporosis, both mineral and matrix are lost. Hence, there is loss of mass and strength. It occurs due to a relative excess activity of osteoclasts resulting in increased bone re-sorption and decreased bone formation. It usually occurs after 40 years of age. Bone mineral density, a measure of bone density, reflects the strength of bones. BMD test helps in the detection of osteoporosis which is measured by DEXA scan or bone densitometer.

T[™] Score Gradations

Normal	Above -1.0
Osteopenia	Between -1.0 to -2.5
osteoporosis	-2.5 or below -2.5

Menopause is the absence of menstrual periods for 6 consecutive months. Permanent cessation of menstrual cycle is referred to as menopause. Age of menopause ranges between 45-55 years, average being 50 years. It has got 3 phases –

Sr. No.	Phases	Meaning
1	Pre-menopausal	Period prior to menopause
2	Post-menopausal	Period after menopause
3	Peri-menopausal	Period around menopause (40-55 years)

In menopause, ovaries undergoes degeneration due to senility and are replaced by fibrous tissues. As a result, the ovaries stops secreting the hormones oestrogen, progesterone and Inhibin. Bone remodelling occurs in every person but in the elderly, the amount resorbed is much less satisfactorily replenished by new bone deposition.

This is particularly true in oestrogen deficient women. Consequently, the collagen Fibres and calcium salts lost during bone resorption is never replenished adequately.

When this process occurs for a long time, osteoporosis sets in.

Nowadays, due to variations in diet, habits, seasons and lifestyle, *dhatu poshan* does not take place properly and thus leading to various health hazards. This lifestyle change modifies *sarata* of every *dhatu*. As the age progresses, the bone becomes weaker and likely to have osteopenia, osteoporosis, bone fracture etc. It seems that, in *asthi dhatu sara individuals*, the tendency towards osteoporosis will be less. Therefore, though a woman has got menopause, and if she is having *asthi dhatu sarata*, she will have less bone loss comparatively.

The bone mineral density test will give an idea about how dense or strong the bone is after menopause. The prevalence rate of osteoporosis and fractures are higher after menopause. So, BMD is measured especially after menopause so that the risk of osteoporosis and fractures can be reduced in elderly women. Also, to rule out the strength of *asthi dhatu*, *asthi dhatu sarata parikshan* has been explained in Ayurveda.

AIM:-

To assess co-relation between *dhatu sarata* and osteoporosis in post-menopausal women.

OBJECTIVES:-

- *Dhatu sarata* examination by AYUSOFT C-DAC proforma
- Study of bone mineral density with the help of bone densitometer (FURUNOCM – 200)
- Comparative study of *dhatu sarata* and osteoporosis in post-menopausal women

MATERIALS:-

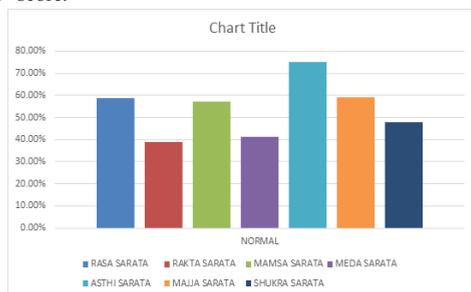
- Ayurvedic texts as well as modern texts regarding the subject
- Standard *sarata* examination proforma (AYUSOFT C-DAC – Centre for development of advance computing)
- Portable densitometer instrument for densitometry (FURUNO CM – 200)
- Pilot study in 50 female subjects between age 45-55 years

METHODOLOGY:-

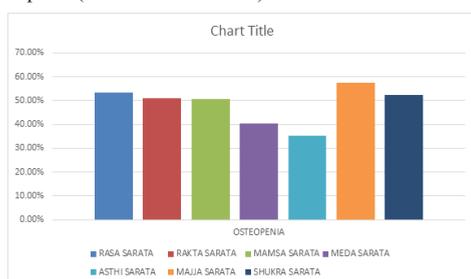
- *Sarata parikshan* was done with the help of standard *sarata parikshan* proforma (C-DAC)
- Bone mineral density was measured with the help of bone densitometer (FURUNO CM – 200)
- *Dhatu sarata* percentage and “T” score are represented in BAR diagram and their relation was studied.

OBSERVATION:-

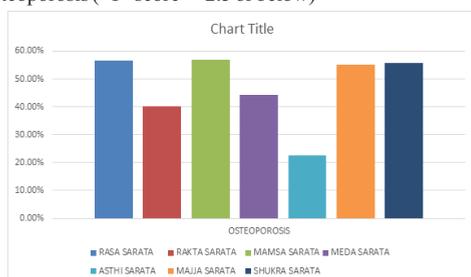
- The pilot study was done in 50 female subjects.
- Out of 50 subjects - 10 were having normal "T" score
- 17 were having osteopenia
- 23 were having osteoporosis
- Comparative study of *dhatu sarata* in the subjects having normal "T" score.



- Comparatively *asthi dhatu sarata lakshanas* are more in the individuals showing normal "T" score (-1 and above)
- Comparative study of *dhatu sarata* in the subjects having osteopenia ("T" score = -1 to -2.5)



- In the subjects showing osteopenia, the percentage of *asthi dhatu sarata lakshanas* are minimum as compared to all other *dhatu sarata*.
- Comparative study of *dhatu sarata* in the subjects having osteoporosis ("T" score = -2.5 or below)



- In the subjects showing osteoporosis, the percentage of *asthi dhatu sarata lakshanas* are minimum as compared to all other *dhatu sarata*.

RESULT:-

- Subjects having normal "T" score shows maximum percentage of *asthi dhatu sarata lakshanas* as compared to other *dhatu sarata*.
- Subjects having osteopenia shows minimum percentage of *asthi dhatu sarata lakshanas* as compared to all other *dhatu sarata*.
- Subjects having osteoporosis shows minimum percentage of *asthi dhatu sarata lakshanas* as compared to all other *dhatu sarata*.
- When *dhatu sarata lakshanas* of all these subjects were compared, it was observed that minimum percentage of *asthi dhatu sarata* was seen in subjects having osteoporosis.
- This proves that there is significant relationship between *asthi sarata* and bone mineral density in post-menopausal women.
- There is no significant relationship between other *dhatu sarata* and bone mineral density in post-menopausal women.

DISCUSSION:-

Dosha, dhatu, mala are the root factors of human body. A balanced state of *dosha, dhatu and mala* are responsible for a health of an individual. Ayurvedic science has always emphasized on maintaining the health of a healthy person and curing the diseased ones. So, it is

very important to pay attention towards preventive measures of health because ignorance towards them can lead to various health hazards and thereby resulting in decreased lifespan. So, for a healthy lifestyle, conditions of *dosha, dhatu and mala* should be determined. For this, *Samhitas* have mentioned *dashavidha pariksha*. One of the tenfold examinations is *dhatu sarata parikshan* (examination) explained by our science.

Post-menopausal women are more susceptible to osteoporosis and more likely to have fractures. Therefore, theories like *asthi dhatu sarata parikshan* should be understood by co-relating it with the help of modern tools. Also, this will be beneficial for the women in early ages to identify their quality of bones with some quantitative parameter and to take preventive measures in early stages of life itself.

In post-menopausal women, if an individual is *asthi sara* and is having normal "T" score, then they will be having good quality of bones and hence the risk of osteoporosis and fractures will be less in them.

Pilot study was done in 50 female subjects between the ages 45-55 years. After performing bone densitometry, *dhatu sarata parikshan* was done with the help of standard *sarata parikshan* proforma (C-DAC).

BAR diagram presentation shows that there is significant relation between *asthi dhatu sarata* and bone mineral density in post-menopausal women.

CONCLUSION:-

It is very essential to have good quality of *dhatu* for good health.

In post-menopausal stage, it is observed that there are maximum chances of osteopenia and osteoporosis.

In this study, it is observed that, there is association between *asthi dhatu sarata* and osteoporosis.

Asthi dhatu sarata parikshan is very important to check the quality of bones in elderly women so that the risk of fractures can be reduced to some extent by taking preventive measures with the help of proper diet and medicines in early stages of life.

Also, quantitative parameters are very essential nowadays to understand ayurvedic concepts.

This was a pilot study. Further study can be done with the help of large sample size.

Comparative study of *asthi sarata* and bone mineral density shows that there is perfect co-relation between osteoporosis and *dhatu sarata*.

REFERENCES:-

- Ambikadatta Shastri, "Sushruta Samhita"- I&II Chaukhamba Orientalia, Varanasi, (UP), India; 2nd 2007: 56-64.
- Brahmanand Tripathi, "Charaka Samhita", Chaukhamba Orientalia Varanasi (UP), India; 19th 1999; 763-64.
- Prof. K.R. Shrikant Murthy, "Ashtanga Sangraha of Vagbhata (English translation)", Chaukhamba Orientalia Varanasi; Second edition, 1999.
- Arthur C. Guyton, "A Text Book of Medical Physiology", W.B Saunders Company west Washington square, Philadelphia, PA; Eighth edition, 1991
- K Sembulingam, Prema Sembulingam, "Essentials of Medical Physiology", Jaypee Brothers Publishers Ltd., EMCA Ansari road, Daryaganj, New Delhi; 4th edition, 2006
- Ambikadatta Shastri, "Sushruta Samhita"- I&II Chaukhamba Orientalia, Varanasi, (UP), India; 2nd 2007
- Ghate, et al. Assessment of Bone Mineral Density and its Co-relation with Ayurvedic Concept Dhatu Sarata. World J Pharm Pharm Sci. 2018; 7(1): 779-783p.
- Ghate Umesh S, Indapurkar Kavita V. Study of Dhatu Sarata and Its Association With Blood Indices. Int J Res Ayurveda Pharm. 2014; 5(3): 309-314p.
- Gunawat CP, Gehlot S. Variation of Haematological Parameters in different Dhatu Sara individual as per sex. Int J Res Ayurveda Pharm. 2015; 6(5): 598-601
- D.C Dutta, "Textbook of gynecology" New central book agency pvt. Ltd., Calcutta, 2nd edition, 1994
- prof. C. S. Dawn, "Textbook of gynecology and contraception" DAWN books, Calcutta, 11th edition 1992