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Review Article

OSTEOPOROSIS IN POST OOPHORECTOMY CASES (SURGICAL MENOPAUSE) WITH SPECIAL REFERENCE TO ASTHIMAJJA-GATA VATA: A REVIEW

Narinder Singh [1]*, Ashok Kumar [2], Ashish Pareek [3], Monika Kumari [4], Poonam Chaudhery [5]
[1]Lecturer, P.G. Department of Shalya Tantra, National Institute of Ayurveda, Jaipur, Rajasthan, India
[2]Assistant Prof. P.G. Department of Shalya Tantra, National Institute of Ayurveda, Jaipur, Rajasthan, India
[3]P.G. Scholar, P.G. Department of Shalya Tantra, National Institute of Ayurveda, Jaipur, Rajasthan, India
[4]Ph.D Scholar, P.G. Department of Maulik Sidhanta, National Institute of Ayurveda, Jaipur, Rajasthan, India
[5]Ph.D Scholar, PG Department of Stree Roga and Prasuti Tantra, National Institute of Ayurveda, Jaipur, Rajasthan, India
*Corresponding Author Email: narinder.1973@gmail.com

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ABSTRACT

There are numerous surgical conditions in which oophorectomy is inevitable. Subjects having underwent bilateral oophorectomy due to one reason or another usually encounter problems accredited to reduced bone mineral density secondary to estrogen deficiency leading to the development of Type 1 osteoporosis. The condition could be correlated with Asthimajja-gata vata and Asthimajja -kshaya described in Ayurveda. Most of professionals usually prescribe HRT in one form or another along with calcium supplements, vit.D_3, biophosphonates, SERM's and other drugs for the management of Type 1 osteoporosis. But management with HRT and above mentioned drugs is usually associated with numerous complications. There are numerous options available in Ayurveda including life style moderation, yoga practices, and various herbal and herbo-mineral preparations without associated ill-effects.

Keywords: Oophorectomy, Estrogen, Type 1 osteoporosis, Asthi /Majja-gata vata, Asthi / Majja –kshaya.

INTRODUCTION

The term osteoporosis coined by Pommer in 1885 literally means porous bone and is defined as a skeletal disorder characterized by compromised bone strength predisposing to an increased risk of fractures. Osteoporosis has been operationally defined on the basis of bone mineral density (BMD) assessment. According to the WHO criteria, osteoporosis is defined as a BMD that lies -2.5 standard deviation or more below the average value for young healthy women (T score of <-2.5 SD).[1]

The early features of osteoporosis are bone pain, muscular weakness and wasting of muscles, general weakness, irritability, fatigue, fractures etc. It is often called the silent disease because the loss of bone occurs silently & progressively and often there are no symptoms until the first fracture occurs. There are three types of osteoporosis**,** idiopathic osteoporosis with reasons unknown, Type 1 is caused by a lack of estrogen results in loss of the inner layer of bone called the trabecular bone. Type 2 is caused mainly by a lack of calcium and/or vitamin D in the diet; this causes loss of the outer layer of the bone called the cortical bone. From the above it is obvious then that a woman who goes through hysterectomy will be more at risk of Type 1 osteoporosis.

AIMS AND OBJECTIVE

1. To review and analyze available literature of Asthimajja-gata vata and Asthimajja -kshaya described in Ayurveda and osteoporosis in contemporary science.
2. To study the occurrence of osteoporosis in post-surgical (B/L oophorectomy) cases.
3. To review the prospective of Ayurveda in the management of osteoporosis secondary to oophorectomy

REVIEW

As per the description available with references texts Vata plays a major role in the manifestation of the disease independently and along with kapha [2] it causes srotorodh and improper formation of Asthi as Asthi dhatu poshakansh does reaches to asthivaha srotas. Asthivaha and majjavaha srotas play key role in the proper functioning of bones and joints. There is an ashrayashrayi bhava in between asthi dhatu and vata[3], while majja dhatu which is present inside the asthi provides nutrition to the asthi. Equilibrium of asthi, majja and vata is the essential state for the normalcy of bone and joint. The etiological factors like abhighata (surgical trauma / effect of oophorectomy) vata provoking ahara-vihara, viruddha ahara-vihar etc aggravate the body dosha[4] especially vata dosha and shleshaka kapha. Such provoked dosha especially vata impair the respective agni of asthivaha and majjavaha srotas thereby formation of unmetabolised substance ama. This ama generates srotosanga type of srotodushti of asthivaha and majjavaha srotas. Consequently, there is an interruption in the process of formation and supply of the nutrients to bones and joints. Therefore, bones and joints are unable to execute their functions. Such etiopathogenesis reflects clinical features of asthimajjagata vata like asthi-sandhi shoola, stabdhata, asthi sushirata etc[5]. At later stage if patient remains untreated lead to the development of severe features like intense and long lasting pain, mamsa-bala kshaya, asvapna etc.[6] On the basis of the above mentioned symptoms, Asthimajja-gata vata and Asthimajja -kshaya may closely be correlated to osteoporosis. Similar references are also mentioned in Ashtanga hridaya, Chakardatta and Yogratanakar.

TYPES OF OSTEOPOROSIS

1. Idiopathic osteoporosis.
2. Type 1 occurs due to decreased estrogen level. Estrogen inhibits osteoclastic activity so women during climacteric changes, post-menopausal phase and post-surgery (Bilateral oophorectomy) that lack estrogen are particularly susceptible to this type of osteoporosis.
3. Type 2 or involutional osteoporosis due to drop in Vitamin D synthesis seen in people over 70.

Type 1 osteoporosis is commonly encountered in Post hysterectomy cases in which ovaries could not be preserved. Osteoporosis as Post-operative complication is noticed in-

1. Hysterectomy along with oophorectomy
2. Prophylactic oophorectomy

If the ovaries are required to be removed before the menopause during the surgery, this will result in immediate surgical menopause.

Conditions Requiring Hysterectomy Along With Oophorectomy

1. Uterine Carcinoma
2. Carcinoma Cervix
3. Krukenberg tumor
4. Dysfunctional uterine bleeding
5. Ill-defined growths concerning ovaries
6. Uterine fibroids

Prophylactic Oophorectomy: Approximately 78% of women between the ages of 45-64 years underwent prophylactic oophorectomy when hysterectomy is performed for benign disease. This is in practice owing to following reasons:-

1. Reduction in risk of developing ovarian cancer
2. Reduction in risk of developing breast cancer

Most of the patients when taken for the follow-up in post-surgery period for above said conditions whether done in NIA Jaipur elsewhere reports the incidence of this variety of osteoporosis

Available Diagnostic Tools Are

1. Single-energy X-ray absorptiometry (SXA).
2. Dual-energy X-ray absorptiometry (DEXA) is considered the gold standard for the diagnosis of osteoporosis.
3. Quantitative ultrasound preferably of calcaneal region.
4. Quantitative computed tomography.
5. Chemical biomarkers could be a useful tool in detecting bone degradation.

The WHO has defined a number of threshold values for osteoporosis. The reference measurement is derived from BMD measurement in a population of healthy young adults.

Table 1: Reference values of T-Score in concern to BMD

Status	Hip BMD
Normal	T-score > -1
Osteopenia	T-Score -1 to -2.5
Osteoporosis	T-Score < -2.5
Severe osteoporosis	T-Score <-2.5 & presence of at least one fragility fracture.

Present scenario of osteoporosis management includes

1. HRT (Hormonal replacement therapy particularly with estrogens)
2. Calcium & Vitamin D (1000-1500mg of calcium along with 400-800 IU/day of vitamin D)
3. Biphosphonates (Alendronate Sodium)
4. SERM's (Therapy with selective estrogen receptors modulators)
5. Teriparatide

Associated Complications with Available Therapy

1. HRT with long term estrogen replacement therapy results in bone mass gain of approximately 3-5% over a period of 12 months with the potential complications like uterine & breast cancers, heart disease, pulmonary embolism etc.
2. Calcium and Vitamin D: Prolonged usage lead to GIT disturbances like nausea, vomiting, poor appetite & flatulence, etc.
3. Biphosphonates: Causes GIT related side effects like cramps, dyspepsia, diarrhea/constipation renal failure etc.
4. SERM's lead to aggravation of the symptoms of menopausal syndrome & swelling in legs apart from increasing clotting tendency of blood.
5. Teriparatide leads to aggravation the symptoms of leg cramps, dizziness and transient episodes of orthostatic hypotension.

DISCUSSION

Prospects of Ayurveda in the management of Osteoporosis secondary to oophorectomy

There is a systemic pathway of the pathogenesis of asthimajjagata vata and certain factors are involved in the pathogenesis of Asthimajjagata vata. These are as follows-

Dosha- predominant vata with shleshaka kapha.
Dushya- Asthi and majja
Srotas- Asthivaha and Majjavaha
Srotodushti- Srotosang and vimargagamana

The line of treatment is designed on the basis of above pathological factors. In asthimajja gata vata, use of sneha both externally and internally is the prime line of treatment followed by Panchakarma (Karmabasti), Balya treatment could be the main stay. Counseling in concern to the life style (Do's and Don'ts) after the oophorectomy in females could be the most effective measure. Controlled exposure to sun is advisable in the management of this condition. Various Yoga exercises including setubandha sarvangasana, parivratta trikonasan, utthita parsvakonasan, salabhasana, tadasana, ardha chandrasana, extended triangle pose in particular could be a very effective physical exercises. *Asparagus racemosus* (Satavari) [7, 8] *Glycine max* (Soya)[9] are the potential sources of estrogen particularly for the females in their climacteric phase and post-menopausal phase. *Saraca indica*, *Centella asiatica*, *Terminalia chebula*, *Glycyrrhiza glabra*[10, 11]. *Sida cordifolia* can also be an effective measure in this condition. Various calcium suppliment (Sudhavargiya) preparation like Godanti, Mukta[12], Pravaal, Kukkutandatvak Bhasma and Zaharmohara Bhasma are very good calcium supplements. Various herbomineral preparations like Tryodshang Guggulu, Laksha Guggulu[13] could also be a very effective supplement in concern to osteoporosis.

CONCLUSION

The life style moderation, Yoga, Panckarma, various herbal and herbo-mineral preparations possess potential management options for osteoporosis encountered in post-surgery phase in patients that had underwent B/L oophorectomy.

REFERENCES

1. Gold DT. The clinical impact of vertebral fracture: Quality of life in fractures: quality of life in women with osteoporosis. Bone.1996;18(3):185S–189S. [PubMed]
2. Kaviraj Ambikadutt Shastri, Sushrut Samhita with Ayurved tatva Sandipika Hindi commentary, Sutrasthan 15/14, 12th edition, (Choukhambha Sanskrit Sansthan, Varanasi) 2001.
3. Ashtanga Hridaya with commentaries "Sarwanga Sundara" of Arunadutta and "Ayurveda Rasayana" of Hemadri, Krishnadas academy, Varanasi 2002, p.186.
4. Caraka Samhita with Ayurveda Dipika Commentary by Chakrapani Datta; Edi. By Vd. Yadavaji Trikamji Acharya, Rashtriya Samskrit Sansthana, Varanasi, 2006, p.251.
5. Caraka Samhita with Ayurveda Dipika Commentary by Chakrapani Datta; Edi. By Vd. Yadavaji Trikamji Acharya, Rashtriya Samskrit Sansthana, Varanasi, 2006, p.617. and Ashtanga Hridaya with commentaries "Sarwanga Sundara" of Arunadutta and "Ayurveda Rasayana" of Hemadri, Krishnadas academy, Varanasi 2002, p.531.
6. Caraka Samhita with Ayurveda Dipika Commentary by Chakrapani Datta; Edi. By Vd. Yadavaji Trikamji Acharya, Rashtriya Samskrit Sansthana, Varanasi, 2006, p.617.
7. Sekine. Structure and relative stereochemistry of a new polycyclic alkaloid, sparagaminea, showing anti-oxytocin activity, isolated from Asparagus racemosus. J Chemical Society 1995; 1: 391-393.
8. Sekine. Racemosol, a 9,10-Dihydrophenanthrene from Asparagus racemosus. Phytochemistry 1997; 44: 763-764
9. Adlercreutz H, Goldin BR, Gorbach SL, et al. Soybean phytoestrogen intake and cancer risk. J Nutr 1995; 125: 757S-770S.
10. Van Hulle C. The estrogenic action of licorice root. Pharmazie 1970; 25: 620-625. Saxena VK, Chourasia S. A new isoflavone from the roots of Asparagus racemosus. Fitoterapia 2001; 72: 307-309.
11. Shihata, IM, Elghamry, MI. Estrogenic activity of Glycyrrhiza glabra with its effect on uterine motility at various stages of thesex cycle. Zentralbl Veternaermed 1963; 10A:155-160.
12. Omkar Dutta Sharma, Siddha Yoga Sangraha, 5th Edition, Choukhambha Sanskrit Series, Varanasi, 1990, pp. 298-99
13. The Ayurvedic Pharmacopoeia of India, Part II-Vol. - II Pg.117-118.

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