

A COMPARATIVE CLINICAL STUDY OF PANCHTIKTA KSHEERA BASTI AND ASTHI SANDHANIYA DRAVYA SIDDH KSHEERA BASTI IN ASTHI KSHAYA (OSTEOPOROSIS)

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ABSTRACT

According to *Ayurveda*, diseases occur due to *Dhatuvaishamyta* & *Dhatusamya* maintains regularity. The *Ashti Dhathu* is the one consecrated with the role of *Shareera Dharana* among the *Saptha Dhathus*. *Asthi kshaya* is the condition in which there is *Kshaya* of *Asthi Dhathu*. *Asthi Kshaya* may be compared to Osteoporosis, in which there is a decrease in bone mass leading to bone brittleness and fractures. *Asthi Kshaya* is one of *Dhatu Kshaya*. Due to *Dhatu Kshaya* there will be *Vata Prakopa* hence in the treatment decreased *Vata Dosha* along with nourishing *Asthi Dhathu* essential. *Basti* is considered as the best Treatment for the *Vata Dosha* and *Asthi Ashrita Vyadhi* and is known as *Ardhachikitsa* in *Ayurveda*. *Ksheera Basti* nourished the *Asthi Dhathu* and pacified there its *Asharya Vata Dosha*. **Aim & Objective**-To assess the efficacy of *Panchtikta Ksheera Basti* and *Asthi Sandhaniya Dravya Siddh Ksheera Basti* in the management of Osteoporosis. **Material and Methods**- present study was undertaken on 30 patients of Osteoporosis. Patients diagnosed Osteoporotic by Bone Mineral Density test, were randomly divided into two Groups, A and B consisting of 10 patients each. **Conclusion**-The study shows that the *Panchtikta Ksheera Basti* and *Asthi Sandhaniya Dravya Siddh Ksheera Basti* are very effective in the management of Osteoporosis.

Keywords: *Asthi Kshaya*, Osteoporosis, *Ksheera Basti*, Bone Mineral Density.

INTRODUCTION

According to *Ayurveda*, freedom from diseases is not only health. To be healthy, a person should be happy by mentally, physically, socially and also spitefully. Imbalance of *Dosha* is termed as *Roga*. Amongst in *Tridosha Vata* is responsible for almost all illnesses. The *Asthi Dhathu* is the one consecrated with the role of *Shareera Dharana* among the *Saptha Dhathus*. *Asthi Dhathu* is the one *Dhathu* which gives the body a profile and protects the organs which are imperative. Without *Asthi Dhathu* the soft tissue bolus would have been nebulous. Therefore, *Asthi Dhathu* can specifically be called the bars of building, on which man stands tall and beautiful in a systematic structure. Every instability in the dhatus equilibrium contributes to irregularities in the *Sharira*. *Asthikshaya* is the condition in which there is *Kshaya* of *Asthi Dhathu*. If an individual takes *Aahar-Vihar Vatavardhak* then the body's *Vat Dosha* is aggravated and *Kshaya* of *Asthi*. When *Vata* and *Asthi* have *Aashrya-Aashryi Bhava*¹ between them *Asthis* were directly influenced by vitiation of *Vata*. According to which there is an intimate connection between *Asthi Dhathu* and *Vata Dosha*. *Asthi Dhathu* and *Vata Dosa* are inversely proportional to each other i.e. the former diminishes when the latter is increased. The Symptoms of *Asthi Kshaya* are *Asthishula*, *Toda*, *Sandhi Shaithilya*, *Kesha*, *Loma*, *Nakha*, *Danta Vikara* and *Patana*, *Dourbalya*, *Rukshata*² etc. The *Chikitsa Sutra* of *Asthikshaya* directly described by *Acharya Vagbhata* and *Acharya Charaka*, The *Basti* along with *Ksheera*, *Ghrita* and *Tikta Rasa* should be given in management of *Asthikshaya*³. In modern science, osteoporosis is described as "a progressive systemic skeletal disease characterized by low bone mass and micro-architectural weakening of bone tissue, resulting in increased bone fragility and fracture susceptibility."⁴ Osteoporosis is a rising global public health epidemic. Between the middle age on a significant proportion of the population is at risk of experiencing a fracture during their remaining lifespan. According to the International Osteoporosis Foundation's Osteoporosis fact sheet, there are 1 out of 8 males and 1 out of 3 females suffering

from osteoporosis in India. India one of the world's largest affected countries.

The treatment administered in modern medical science included supplementation of calcium and vitamin-D, hormone replacement therapy (HRT), and use of other medicines such as bisphosphonates, oestrogen receptor selective modulators (SERMS), etc⁵. Yet it has not achieved the desired result Thus, it is our responsibility as students of great *Ayurvedic* science to offer a lasting solution to this global problem. *Ayurveda* is ancient medical sciences of the world. Since it is a disease caused by the aggravation of *Vata* so that treat pioneer treatment for *Vatic* disorders is *Basti Karma* so that *Panchtikta Ksheera Basti* was selected as per the principal for the treatment of *Asthivikara* told by *Acharya Charak*. *Asthi Sandhaniya Dravya Siddh Ksheera Basti* was tried due to its *Rasayana* and its indication in *Asthi Bhagna* and strengthening of bone.

Aim & Objective

1. To study the conceptual and clinical aspects of the diseases *Asthikshaya*/Osteoporosis as Per *Ayurveda* and modern sciences.
2. To evaluate the effect of *Panchtikta Ksheera Basti* in *Asthikshaya*.
3. To evaluate the effect of *Asthi Sandhaniya Darvya Siddh Ksheera Basti* in *Asthikshaya* w.s.r. to osteoporosis
4. To study in detail about *Basti*.

Material and Methods: -

Selection of cases: Total 30 patients of osteoporosis & Osteopenia (*Asthikshaya*) were registered on the bases of symptoms & relevant B.M.D test in camps organized at panckarma department, DSRRAU JODHPUR by Aimil Pharmaceuticals Private limited on 4/2/2020.

Grouping of Patients: After complete examination and investigation, 30 Patients will be Divided randomly in two groups (15 Patients in each group) irrespective of sex and age group in between 40-70 years.

Group A: Will be given *Panchtikta Ksheera Basti* for 16 days.

Group B: Will be given *Asthi Sandhaniya Darvya Siddh Ksheera Basti* for 16 day.

Inclusive Criteria:

1. Patients will be selected between the age group of 40-70 years.
2. Patient representing with classical features of *As-thikshaya*.
3. Patient of both sex are taken.
4. Patient of osteoporosis diagnosed by BMD test.

Exclusive Criteria:

1. Patient below the age of 40 and above 70 years.
2. Patient suffering from any systemic disorder like DM, HTN, Endocrinal disorders, Paget's disease, Cushing syndrome etc.
3. Patient suffering from pathological osteoporosis or any neoplasm or osteoporosis related to systemic disorders.
4. Osteoporosis associated with fracture.
5. Patients who were unfit for *Basti karma*.

Assessment Criteria:

Table 1: Subjective Parameter

Parameters		Score
1. <i>Asthi Shoola</i> (Bone pain)	No pain	00
	Mild pain after movement & subside by rest	01
	Moderate degree of pain, no relief by rest but not disturbing sleep or other activities	02
	Severe degree of pain disturbing sleep or routine activities	03
	Severe degree of pain disturbing sleep or routine activities and relieved by analgesic.	04
2. <i>Sandhi Saithilyata</i>	Pain	00
	Pain and Swelling	01
	Pain++ Swelling++	02
	Pain+++ Swelling+++ Crepitus +	03
	Pain++++ Swelling++++ Crepitus ++ Tenderness+	04
3. <i>Sparsashayata</i> (Tenderness)	No tenderness	00
	Mild (tenderness on pressure)	01
	Moderate Wincing of face on pressure	02
	Severe (Wincing of face & withdrawal of affected part on pressure)	03
	Intolerable (resist slightest of pressure)	04
4. <i>Dourbalya/Shrama</i> (General debility)	No	00
	Not able to perform strenuous activity	01
	Not able to perform moderate strenuous activity	02
	Can perform mild activity without help	03
	Can perform mild activity	04
5. <i>Keshapatan</i> (Hair Fall)	No History of <i>Kesapatana</i>	00
	Mild hair loss observed recently	01
	Mild to moderate hair loss observed recently	02
	Moderate hair loss since long time	03
	Severe hair loss	04
6. <i>Rukshya</i> (Dryness)	No dryness	00

	Dryness during winter disappear after applying moisturizer.	01
	Dryness during winter, but no longer effect of moisturizer.	02
	Dryness during winter, but no effect of moisturizer.	03
	Dryness during humid climate no effect of moisturizer.	04

Objective Criteria: Bone Mineral Density (W.H.O. criteria for osteoporosis)

Table 2: T-score

S.no	Category	(BMD) Score
1.	Normal	-1
2.	Osteopenia	-1.1 to -2.5
3.	Osteoporosis	Less than or equal to -2.5
4.	Severe osteoporosis	Less than -2.5 with fracture

Table 3: Overall effect of therapies

Cured	100% relief in sign and symptoms
Marked improvement	>75% relief in sign and symptoms
Moderate improvement	51 to 75% relief in sign and symptoms
Mild improvement	25 to 50% relief in sign and symptoms
No Improvement	Below 25%

Plan of Treatment:

1. Local *Abhyanga* with *Murchit Tila Taila* on *Kati, Vakshana, Pakvashya* region was administered.
2. Local *Swedna* on *Kati, Vakshana, Pakvashya* region was administered.
3. *Basti*: (16 days).

Ingredients of Trial Drug- Panchtikta Ksheera Basti (400 ml)

1. *Panchtikta Ghrit* -1 *Prasurta* (80 ml)
2. *Tila Taila*- 1 *Prasurta* (80 ml)
3. *Ksheera* -2 *Prasurta* (160 ml)
4. *Madhu* - 1 *Prasurta* (80 ml)
5. *Saindhva Lavana*- 3 gm
6. *Kalka (Satpuspa, Ajvayan, Pippali)* - 20 gm

Ingredients of Trial Drug – Asthi Sandhaniya Darvya Siddh Ksheera Basti (480 ml)

1.i.) *Kawath Darvya* –

Mulethi, Guduchi, Prasanprani, Patha, Majistha, Dhatki, Priyangu, Lodhra, Katphala, Mocharasha.

ii.) *Ksheera*:

Each *Kwatha Darvya* in same quantity (30 gm Total *Matra*) and Made. *Ksheerpaka* (240 ml)

2. *Kalka Darvya* - *Satpuspa, Ajvayan, Pippali, Rasna* - 40 gm

3. *Madhu* - 80 ml

4. *Saindhva Lavana*- 3 gm

5. *Ghrit* - 60 ml

6. *Tila Taila* - 60 ml

Observation:

- In case of demographic data, majority of patients i.e. the highest was seen in age group of 40-50 years, Housewives, Urban area, Middle class, Vegetarian dietary habit, Illiterate patients. Majority of the Patients i.e. 60% were having *Krura Koshta* and 46.66% were having *Vishamagni*. That most of the patients 30% in this study have maximum chronicity in 0-1 years. trial maximum 86.66% patients were addicted to tea/coffee, 68.42% patients had Menopause.
- 46.67% patients were having *Vata-Pittaja Shari-rika* Prakriti, 36.67% patients were having *Madhyama Saara*, 63.33% were on *Madhyama Satmya* 60% patients were found to have *Madhyama Samhanana*, 63.33% were of *Madhyama Satva*, 33.33% had *Madhyama Vyayama Shakti*, 50.00% had *Madhyama Nidra Pravarti*. 19 (63%) taken *Katu, Tikta Aahara*, and 18 (60%) patients taken *Rooksha*

- Aahara, 13 (43%) patients taken Laghu Aahara and 7 (23%) patients taken Sheeta Aahar.
- 100 % Patients had Prasrista Vit, Mootra, Smeerana and 90% patients had Agni Dipti Lakshana , 86.66% patients had and Ashaya Laghuta, 76.66% Patients had Ruchi Vriddhi Lakshana.
- Pratyagaman Kala of Panchtikta Ksheera Basti: - Out of 15 patients Maximum 66.66% had Time of expulsion 20-40 minute.
- Pratyagaman Kala of Asthi Sandhaniya Dravya Siddha Ksheera Basti: - Out of 15 patients Maximum 73.33% had Time of expulsion 0-20 minute.
- No side effect was reported by any of the patients during the course of therapy. All the patients tolerated Panchkarma procedure very well.

Results:

Table 4: Showing effect of therapy in Subjective Parameters (Wilcoxon matched pairs signed rank test):

Sign & Symptoms	Gr.	Mean score		Difference	% Relief	S.D ±	S.E±	P value	Result
		BT	AT						
Asthi Shoola (Bone Pain)	A	2.533	0.8000	1.733	68.42%	0.7988	0.2063	0.0001	E.S.
	B	2.467	0.8667	1.600	64.86%	0.7368	0.1902	< 0.0001	E.S.
Sandhi Saithilyata	A	2.867	1.133	1.733	60.47%	0.5936	0.1533	< 0.0001	E.S.
	B	2.600	1.200	1.400	53.85%	0.5071	0.1309	< 0.0001	E.S.
Sparsashayata (Tenderness)	A	2.533	1.133	1.400	55.26%	0.5071	0.1309	< 0.0001	E.S.
	B	2.200	1.067	1.133	51.52%	0.6399	0.1652	0.0001	E.S.
Dourbhalya /Sharma (General Debility)	A	2.800	0.7333	2.067	73.81%	0.5936	0.1533	< 0.0001	E.S.
	B	2.733	1.000	1.733	63.41%	0.7988	0.2063	< 0.0001	E.S.
Keshapatan (Hair Falling)	A	2.200	1.133	1.067	48.48%	0.8837	0.2282	0.0010	E.S.
	B	1.733	1.200	0.5333	30.77%	0.6399	0.1652	0.0078	V.S.
Rukshya (Dryness)	A	2.400	1.000	1.400	58.33%	0.8281	0.2138	0.0001	E.S.
	B	1.800	0.9333	0.8667	48.15%	0.7432	0.1919	0.0010	E.S.

Table 5: Showing effect of therapy in Objective Parameters BMD: t-score (Paired 'T' Test):

	Gr.	Mean score		Difference	% Relief	S.D ±	S.E±	P value	T value	Result
		BT	AT							
BMD t- score	A	-2.180	-1.500	-0.6800	31.19%	0.2833	0.07316	< 0.0001	9.295	E.S.
	B	-2.820	-2.073	-0.7467	26.48%	0.4549	0.1175	< 0.0001	6.357	E.S.

Inter Group Comparison of Effect of Therapies: -

Table 6: Showing Inter Group comparison in Subjective Parameters (Maan-Whitney):

S.no	Subjective parameter	Mean diff. Group A	Mean diff. Group B	MW-U	P-Value	Result
1.	Asthi Shoola (Bone Pain)	1.733	1.600	96	0.2198	N.S
2.	Sandhi Saithilyata	1.733	1.400	79.50	0.0628	N.Q.S
3.	Sparsashayata (Tenderness)	1.400	1.333	88.50	0.1298	N.S
4.	Dourbhalya /Sharma (General Debility)	2.067	1.733	82.50	0.1822	N.S
5.	Keshapatan (Hair Falling)	1.067	0.5333	74	0.0455	S.
6.	Rukshya (Dryness)	1.400	0.8667	73	0.0423	S.

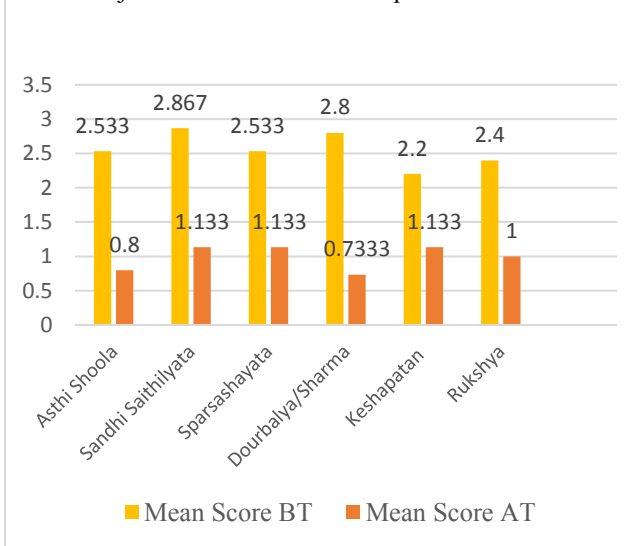
Table 7: Showing Inter Group comparison in Objective Parameters (Unpaired t Test)

Objective Parameter	Mean diff. Group A	Mean diff. Group B	T value	P value	Result
BMD t score	-0.6800	-0.7467	0.4818	0.3169	N.S

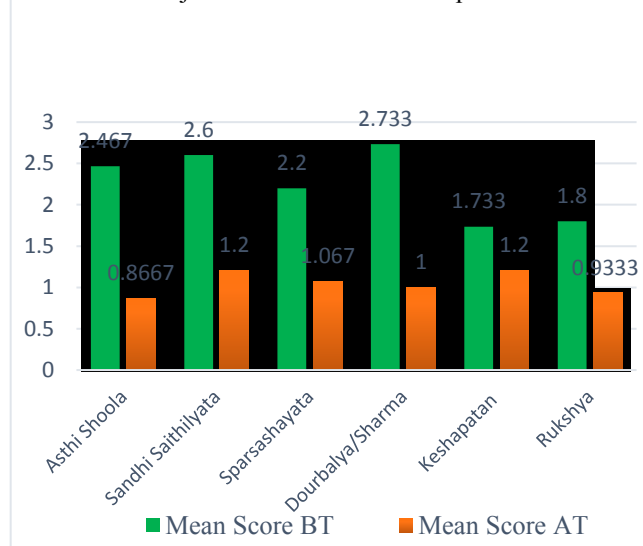
Table 8: Total Effect of Therapy in the Patients of Asthikshaya (Osteoporosis)

	GROUP A (15 Patients)	%	GROUP B (15 Patients)	%
Cured	0	0%	0	0%
Marked improvement	3	20 %	2	13.33
Moderate improvement	10	66.66%	8	53.33%
Mild improvement	2	13.33 %	5	33.33%
No Improvement	0	0%	0	0%

Graph 1: Showing the Effect of therapy on Subjective Parameter in Group A



Graph 2: Showing the Effect of therapy on Subjective Parameter in Group B



DISCUSSION

Mode of action of therapy: Basti Karma was selected as per the principal told by Acharya Charaka and it was given in the form of a Yapana Basti, Yapana Basti perform dual function both Anuvasana and Nirhua. Yapana Bastis are Mridu and Brimhana in action, they promote Dhatu homeostasis and perform mild Shodhana also. These Bastis are Mridu as it contains milk. Ghee and Madhu. These stays for a long time in Pakvashaya and can be administered at any time. The Reason behind selection Since it is a disease caused by the aggravation of Vata so that treat pioneer treatment for Vatic disorders is Basti Karma and Basti Karma is called Ardchakitsa ⁶in Ayurveda. Charaka and Hemadri said Basti is useful for the Kshina Dhatus and Bhagna

(fractures) of the Asthi and Sandhi. The action of Basti on Asthivaha Srotas and Majjavaha Srotas is also seen as beneficial effects. According to Acharya Sushruta⁷ Virya of Basti administered into Pakvashaya reaches the whole body through the channels (Srotasa), as the active principles in the water when poured at the root of the tree reaches the whole plant. According to Acharya Charaka & Vagbhatta the treatment of Asthikshaya is Basti Karma using Tikta Rasatmaka Aushadhi Dravya along with Ghrit and Ksheera. Panchtikta Ksheera Basti has nourishing factor for Asthi Dhatu in the form of Tikta drugs, milk, honey, Ghee and mitigates Vata-Pitta and maintains stability of Kapha. According to Arundata⁸ the constituent having Snighda and Shoshana properties and produced Khartwa and

risers *Asthi*, as *Asthi* is also *Khara* by *Guna*. There is no such combination present in any *Single Dravya* which have both *Singda* and *Shoshana* properties. Therefore *Tikta Rasa* have *Sosana Guna*. *Ksheera* and *Ghrita*, which are *Singdha* in *Guna* and advised to be used with the constituent which are *Tikta* and have *Shoshana* property. So that *Ksheera* or *Ghrita* should be used together in the form of *Ksheera Basti*. *Ksheera*, *Ghrita* is *Vata Shamak* and *Tikta Rasa* due to its composition of *Panchamahubhut* and *Khara*, *Soshana Guna* will increase of *Asthi Dhatu*. The combination of *Ksheera*, *Ghrita* and *Tikta Dravyas Siddh Basti* which are good at *Vatasamana* and *Asthiposhana*. The combination of *Snigdha* and *Sosana Gunas* which produce *Khara Guna* and does the *Vrddhi* of *Asthi Dhatu* and repairing the degenerative change in *Asthi* and delaying the degenerative change in *Asthi* and prevent of *Asthi kshaya*. *Asthi* are *Panchbhoutika* in nature. The weight and *Sthira* in the *Asthis* indicates its *Prathiv* nature, colour of *Asthi* indicates *Tejas Mahabhoot*, *Snigadhata* indicates *Jala Mahabhoot*, cavities inside the bones indicate *Aakash Mahabhoot* and movements inside indicates *Vayu Mahabhoota* in the bones. In Both *Basti Tikta* and *Kasaya* drugs are *Vayu*, *Aakash* and *Prithvi Mahabhoota* dominate, milk, *Ghrita*, *Taila* and honey are *Prithvi*, *Jala Mahabhoota* dominate and *Kwath* is formed due to *Agni Samyog*, so we can say that *Panchbhoutik* nature of Both *Basti* matched with *Panchbhoutik* nature of *Asthis* and this factor also played a role in alleviating the symptoms of *Asthi kshaya*. It is in accordance with the principal told by *Acharya Sushrut* for the treatment of *Kshayas* i.e. *Swayoni Vardhanam Pratikarah*. *Ksheera Basti* nourishes the *Asthi Dhatu* and there by pacifies its *Ashrayee Vata Dosha*. Several of *Ksheera Basti* components, such as *Sneha*, help to Formation of *Asthi* and *Majja Dhatu*, thus preventing bone degeneration and osteoporosis. Most joint disorders occur due to calcium deficiency, so calcium levels can be increased in the body by administering *Ksheera Basti*. According to modern science calcium is excreted through the stools which is important ingredients of bones. Where bone ingredients are excreted through the stools. The implanted medicine into the colon could reach the bone. Particularly we can see that bone pain

in *Asthi kshaya* probably subsides with *Tikta Ksheera Basti* administration.

So that *Ksheer* and *Ghrit*, which have properties of *Madhur* and *Snigdha*, used with *Tikta, Kasaya Dravyas* which have properties of *Shoshan*. *Ksheer* and *Ghrit* pacify the *Vata* and *Pitta*, and act as a *Karma* of *Brimhana*. Getting, *Saindhav lavana* having *Suksham-guna* reaches up to the body's micro channels⁹. Because of the common composition of *Panchabhoutika* components of *Panch Tikta Ksheer Basti* and *Asthi*, these components will enter the *Asthivaha Srotas* and will be implemented by the *Parthiwagni*, *Vayavyagni* and *Tejasagni* and transformed into *Asthi Poshakamshas* on which the *Asthi Dhatwagni* will act and convert into *Sthayi Asthi Dhatu*¹⁰. Hence there will be increased of the *Asthi Dhatu*. Phytogetic molecules (derived from plants of *Tikta Rasa Pradhana* and from dairy products) have estrogenic action that reduce osteoclastic activity and increase the development of *bone matrix* and mineral deposition, thus helping to prevent osteoporosis¹¹.

Calcium deficiency also decreases the bone density and induces bone degeneration. The best source of calcium and other minerals is cow's milk. Calcium is consumed from duodenum by carrier-mediated active transport and by facilitated diffusion from the rest of the small intestine¹². Thus, through *Ksheera Basti* increasing the calcium level in the body, and restoring the bony tissue. The *Ksheer Basti* enters the *Pakwashaya* which is also *Purishdhara Kala*, and according to *Dalhana Purishdharakala* there was nothing but *Asthidhara Kala* so there is a definite relationship between these two *Kalas*. So, when the components of *Basti* i.e., *Ksheera*, *Ghrita* and *Madhu* nourishment the *Purishadhara Kala*, they nourish the same *Asthidhara Kala* and it is detected that the symptoms of pain and tenderness are reduced.

Mode of action of Drug:

Pnchtikta dravya have mainly *Tikta Rasa* and *Tikta Rasa* is *Vata* aggravated *Dravya* but *Tikta Rasa* is *Asthi Vriddhikara* because *Tikta Rasa* is mainly *Aakash & Vayu Mahabhuta Pradhan Dravya*. *Tikta Rasa* has tendency to go towards *Asthi Dhatu* hence which has same *Mahabhautika Tattva*. They tend to reach the palace

(tissues and organs) rich in *Akash* and *Vayu* elements by virtue of these elements. All *Srotas* consist of *Akash Mahabhuta*. Hence the *Tikta Ksheer Basti* has maximum affinity to the bone tissue and bone channels. In *Asthi Sandhaniya Darvya Siddh Ksheera Basti* used *Sandhaniya Mahakashya*¹³ form of *Kawatha* All the *Sandhaniya Dravya* is mainly *Kasaya Rasa Pradhana* so that *Kasaya Dravya* have property of *Sandhan* all over *Dhatus* due to constriction. The *Dravya* that are helpful for uniting tissues, wound healing and treatment of fracture are called *Sandhaniya* which *Sandhana* in nature and prevent *Bhagna* of *Asthi* It promotes the union of interrupted *Dhatus*.

Vitamin-D found in cow's milk helps in bone development by preserving the proper calcium levels in the blood along with the parathyroid hormone. Vitamin-K stimulates osteocalcin in the bone which is the main non-collagen protein. Inside the bone, osteocalcin aches, calcium molecules. Cow's milk also contains lactoferrin, an iron-binding protein that enhances osteoblast growth and function, bone-building cells and decreases the rate at which these cells die by up to 50-70%. They also reduce osteoclast formation, the cells responsible for bone breakdown, thereby helping to build the bone and preventing osteoporosis. In this *Basti*, *Tila Taila* is used as *Sneha*, it is mixed with the solution of honey (*Madhu*) and *Saindhava* and helps in forming a uniform mixture. *Sneha* increases the permeability of cell membrane and become helpful in elimination of *Dosha* ana *Mala* Because of its *Guru*, *Snighda Guna* it liquefies the *Dosha* and breakdowns the compacts *Mala*. Apart from these functions it also protects the mucus membrane from the untired effects of irritating drugs in the *Basti Dravya*. *Ghee* is used as a carrier or "Yogavahi" because of its supreme penetrating qualities and thus ability to carry these substances deep into the *Dhatus* or tissues. Apart the *Ghritha* contains the phospholipids that play an important role in bone mineralization.

Madhu is the best vehicle to transport medicines as it possesses the capacity to go through micro channels. Main role of *Madhu* is to increase the retention time of *Basti* by counteract the irritative property of *Saindhava*. The retention time of irritative substance in rectum may

be favored by making solution as nearly isotonic as possible by using colloidal fluid. Glucose atoms of Honey have better porousness to get ingested and enter the circulation and are readily absorbed and assimilated by the body. In this way it energizes the body very quickly. *Saindhva Lavana* in *Basti Dravya* may play an important role in the absorption of the drug through Na channels, the most commonly used channels for the absorption of drugs. *Kalka* helps in disintegrate the malas by increasing osmotic permeability of the solution. *Kalka* drug enhances the action of *Kawath Dravya* and *Kalka* provide thickness to the *Basti Dravya*.

CONCLUSION

Asthi Kshaya are *Asthi Dhātu Kshyājanya Roga* and which may be co-related to osteoporosis of the modern science. The prevalence of *Asthi Kshaya* is more in people aged above 40 years It is understood that peak adult bone mass grows at a average age of 30-35 years and eventually the bones gradually lose their mineral content. *Asthi Kshaya* is more prevalent in people with dominant in *Vata Prakruti*, because *Vata* is the responsible for *Asthi Kshaya*. *Ksheera Bastis* are best *Rasayana*, *Brimhana* as they contain *Ksheera* and *Ghritha*, which according to our *Acharyas* are considered as *Nitya Rasayana*. *Ksheera Basti* nourishes the *Asthi Dhātu* and there by pacifies its *Ashrayee Vata Dosha*. 15 patients of *Asthikshaya* were treated with *Panchtikta Ksheera Basti* i.e. (Group A). This therapy has provided extremely significant relief in all subjective parameters and objective parameters. 15 patients of *Asthikshaya* were treated with *Asthi Sandhaniya Dravya Siddha Ksheera Basti* i.e. (Group B). This therapy has provided extremely significant relief in *Asthi Shoola* (Bone Pain), *Sandhi Shoola* (Joint Pain), *Sparsashayata Dourbhalya/Sharma*, *Rukshya* and BMD and Very significant result is found in *Keshapantan*.

The percentage relief of *Panchtikta Ksheera Basti* on symptoms of Bone pain etc. shown better results in comparison to *Asthi Sandhaniya Darvya Siddh Ksheera Basti*. On comparing the effects on BMD it was found both Group have showed similar improvements there is not significant results in the effects of

therapies in Group A and Group B on BMD. This indicates that Group- A & B, had similar therapeutic effect. The treatment was more effective in the subjective parameters *Asthi Shoola, Sandhi Shoola, Dourbalya / Shrama, Rukshyta, Asthi Sparshaasahyata, Kesha Patina*, in comparison to objective parameters like BMD t-Score.

Therefore it can be concluded that the *Chikitsa Sutra* revealed by *Acharyas* for *Asthikshaya* thousands of years ago i.e. the use of *Basti* prepared with the combination of *Ksheera, Ghrita* and *Tikta Dravya* and the use of *Sandhaniya Dravya* which *Sandhana* in nature and prevent *Bhagna* of *Asthi* It promotes the union of interrupted *Dhatu*s, so that *Sandhaniya Dravya* is effective even today.

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