

A COMPARITIVE CLINICAL STUDY OF AROHANA MATRA BASTI AND STANDARD MATRA BASTI IN KEVALA VATAJA KATIGRAHA VIS-À-VIS LUMBAR SPONDYLOSIS.

Prathibha Sharma¹, Sudharshan A Bhat²

¹P.G Scholar, MIAMS, Manipal, Karnataka, India

²Professor, MIAMS, Manipal, Karnataka, India

Email: prathi12sharma@gmail.com

ABSTRACT

Low back pain has become a common problem in all generations of people. The main culprit for this is our life style, stress and faulty food habits. Sufferings seen in the population due to this disease is immense, which if not given enough attention becomes a permanent deformity which is untreatable. In Ayurveda, *Aharaja, Viharaja, and Manasa nidana for Katigraha* (which is similar for *Vata vyadhi nidana*) has been specified, thus its treatment is also very specific. As Pain and Stiffness are the main symptoms in both *Kevala vataja katigraha* and Lumbar spondylosis this disease is taken up specifically. *Basti* is told as *Ardha chikitsa* in Ayurveda. Two groups of 15 patients each were taken and two forms of *Matra basti* were evaluated for its efficacy. Statistically both showed very significant improvement, practically *Arohana matra basti* patients showed milder form of *Purisha avruta vata* feature on 9th day and relief in pain was seen slowly. So, the usual practice of Standard *Matra basti* (1 ½ *pala*) can be continued to be practiced and other form of *Arohana matra basti* maybe evaluated for efficacy.

Keywords: *Katigraha, Arohana Matra basti, Standard Matra basti, Lumbar spondylosis.*

INTRODUCTION

Lumbar spondylosis is a degenerative condition affecting the discs, vertebral bodies and/or associated joints of lumbar spine. Lumbar spondylosis has symptoms like pain in low back and stiffness, Inability to twist or turn. Deformity or abnormality of spine curvature in chronicity is resulted if not treated early. Description of similar condition with same etiological factors and pathogenesis is available in Ayurveda classics also. Though *Kati Graha* has not been described as a separate disease entity by any text except *Gada Nigraha*, it has been categorized under *Vataja*

Nanatmaja Vyadhi in *Charaka Samhita* as *Prishta Graha*. As correctly said by *Sushruta Acharya* without vitiation of *Vata, Shoola* (pain) cannot be produced. So, prime Importance should be given to *Vata dosha* while considering the management of the disease. Among the *Panchakarma, Bastikarma (ardhachikithsa)* is a *Chikitsa* that is applicable in *Samanyavata vyadis*. Measures of *Samanya Vata Vyadi* like *Abhyanga, Swedana, Basti, Virechana* etc are other treatment measures for *Katigraha*. Among *Basti karma,*

Matrabasti is a very effective and easily carried out treatment method.

Matrabasti can be administered in standard dose of 1 ½ *pala* constant dose and as per *Sharangadhara Samhita*, *Adhamalla* commentary *Matrabasti* is given in increasing dose for 9days and each day dose is increased.

The reference of *Sharangadhara* which is not in much practice is evaluated for its effectiveness. And keeping in mind the high prevalence, rate of disability in productive span of life, intensity of symptoms of disease, lack of current effective treatment, this study is taken up.

METHODS

SOURCE

1. Patients of either sex who fulfill the inclusion criteria will be randomly selected from OPD and IPD of Muniyal Institute of Ayurveda Medical Sciences and Hospital, Manipal and also from referral sources and special camps conducted for the purpose.
2. Puttur Govt Hospital, Ayush Department.

Inclusion criteria:

- Patients having the classical *lakshanas* of *Kevala vataja Katigraha* will be selected.
- Patients of both genders who are *Basti yogyaa* according to Ayurveda classics irrespective of chronicity, occupation and socio-economic status.
- Patients in between 20 years and 60 years of age will be selected.

Subjective parameters:

Table 1: *Kati ruja* (Pain) - Pain scale by Karen Lee Richards, chronic pain connection expert

0	Pain free
1	Mild pain. Pain is barely noticeable, most of the time you don't think about it.
2	Minor pain. Annoying and may have occasional strong twigs.
3	Pain noticeable and distracting, however you can get used to it and get adapted
4	Moderate pain. Pain can be ignored for a period of time, but is still distracting
5	Moderately strong pain. Pain can't be ignored for more than a few minutes, but with effort can still manage to work.
6	Pain that interferes with normal daily activities. Difficulty concentrating.
7	Strong pain that dominates your senses and significantly limits your ability to perform daily activity, interfere with sleep
8	Intense pain. Physical activity is severely limited conversing requires great effort.
9	Excruciating pain. Unable to converse. Crying out and/or moving uncontrollably.
10	Unspeakable pain, Bedridden and possibly delirious.

Exclusion criteria:

- *Sama Katigraha*
- Patients who are *Basti ayogyaa* according to Ayurveda classics.
- All those major systemic diseases which interfere with the clinical study are excluded.
- Patients having spinal tumor, malignant diseases of pelvis, TB of vertebral bodies, RA etc will be excluded.

STUDY DESIGN

Single blind randomized comparative clinical study.

INTERVENTIONS

30 patients of *Kevala vataja Katigraha* will be selected randomly and divided into two groups, minimum 15 patients in each group.

➤ Group:- A

- Patients of this group will be administered with standard *Matra Basthi* with *Balataila* after food
- 72ml in the form of *Matra Basti*.6

➤ Group:- B

- Patients of this group will be administered with *Arohana Matra Basti* with *Balataila* after food
- 1st day-48ml, 2nd day-60ml, 3rd day-72ml, 4th day-84ml, 5th day-96ml, 6th day-108ml, 7th day-120ml, 8th day-132ml, 9th day-144ml.7

- Both groups will be treated for a period of 9 days.

- **Follow Up**-16th day and 22nd day

ASSESSMENT CRITERIA AND SCORING: The assessment will be done on the basis of following Subjective parameters and Objective parameters.

Table 2: *Kati graha* (Stiffness)-Normal ranges are-Flexion-90 degree Extention-25degree., Axial rotation-3-18 degree. Lateral Flexion (right and left)-25 degree Range of movement before and after treatment is noted and grading is done.

0	no restriction of normal range of movements
1	restriction in any one movement of above
2	restriction in any 2 movements
3	restriction in any 3 movements
4	restriction in all 4 movements

Table 3: Tenderness

0	no tenderness
1	mild tenderness without any sudden response on pressure
2	Wincing of face on pressure due to tenderness
3	Wincing of face withdrawal of affected part on pressure
4	Resists touch due to tenderness

Objective parameters:

1. Schobers test., 2. Visual analogue scale (for pain assessment)

Comparative effect of Standard *matra basti* and *Arohana matra basti*

Table 4: Comparative effect of Standard *matra basti* and *Arohana matra basti*

Sympomatology	Standard <i>matra basti</i>	<i>Arohana matra basti</i>
Pain	91%	89%
Restriction of movement	93%	93%
Tenderness	100%	100%
VAS for Pain	95%	89%
Schober's test	30%	25%

Overall effect of Standard *matra basti* (Group A)

Table 5: Overall effect of Standard *matra basti*

Total Effect	Percentage	No. of Patients	Percentage
Cured	100%	0	0%
Markedly improved	76-99%	0	0%
Moderately improved	51-75%	13	86.66%
Little improved	26-50%	2	13.33%
Unchanged	<25%	0	0%

Overall Effect of *Arohana matra basti* (Group B)

Table 6: Overall Effect of *Arohana matra basti*

Total Effect	Percentage	No. of Patients	Percentage
Cured	100%	0	0%
Markedly improved	76-99%	0	0%
Moderately improved	51-75%	13	86.66%
Little improved	26-50%	2	13.33%
Unchanged	<25%	0	0%

Effect of treatment on Pain, Restriction of movement, Tenderness, VAS, Schober's test on 22nd day

Table 7: Showing P value of symptoms in both groups

SYMPTOM	MEAN		SD		“P” VALUE
	BT	22 nd day	BT	22 nd day	
Pain in group A	4.751	0.43	1.684	0.51	0.001
Pain in group B	4.75	0.50	1.612	0.52	0.001
Restriction of movement in group A	2.07	0.14	0.83	0.36	0.001
Restriction of movement in group B	1.81	0.13	1.17	0.35	0.01
Tenderness in group A	1	0	0.88	0	0.006
Tenderness in group B	1.13	0	0.81	0	0.002
VAS for pain in group A	7.14	0.36	1.83	0.63	0.001
VAS for pain in group B	6.81	0.69	1.38	0.71	<0.0001
Schober's test in group A	10.14	14.86	1.70	0.36	0.001
Schober's test in group B	10.69	14	0.81	0	0.001

DISCUSSION

Katigraha is a *Vata vikara*. As mentioned earlier its not separately mentioned in *Bruhatrayees* and mentioning is as a *Vataja nanathmaja vikara*. So its *Nidana*, *Poorva roopa*, *Roopa*, *Upashaya*, *Samprapti* tally's with *Vata vikaras*. As in this study *Kevala vataja* is taken into consideration *Kaphakara nidana* and its *Samprapti* are skipped.

Sannikrushta hetu are-:(cha chi 28) (su chi 4, ni 1) (a hru ni 15, chi 21) (ma ni 22) (bha pra ma 24) (yo ra pu)

1. *Ativyayama*- Excess physical works, running, jogging, walking etc. These affect the joint stability and lead to *katigraha*.

2. *Bharaharana*- Excess load and pressure on low back.
3. *Abhighata*- This can cause structural deformity of the spine.
4. *Atisamkshobha*- Violent activity like *atyadhva*, *plavana*, *langhana*, *balavat vighraha*, *pradhavana* etc. these will alter structural integrity of joints.
5. *Marmabhighata*
6. *VATA KARA AHARA* like *kashaya*, *katu*, *tikta*, *rooksa*, *laghu*, *sheeta ahara* and many more *viprakraushta karana*

Samprapthi goes like-

Vata kara Nidana



Dhatu kshaya



Vataprakopa



Vimaarga gamana of Vata



Reaches khavaigunya sthana of srotas



Prakupita Dosha & Dushya (Snayu, Kandara, Dhamani)



Sthana samshraya in spik, Kati, Prishtha, Uru, Janu, Jangha

Here the vitiated vata dosha resides in the *Katipradesha* causing pain, stiffness and restricted range of movement of back. Here the *Shoola* is the main presenting symptom which is indicator of involvement of *vata dosha*.

Acharya Charaka explained that due to the intake of *Vatakara ahara vihara*, *Vata* vitiation take place. This

vitiated *Vata* get resides into *Rikta srotas* i.e. *Srotas* in where *Shunyata* of *Snehadi guna* is present, while commenting on word '*Riktata*' *Chakrapani* says that '*Riktata*' means lack of *Snehadiguna*. When the *Vata* get reside into the *Rikta srotas* causes the disease related to that *Srotas*.¹

Samprapthi gataka

Table 8: *Samprapthi gataka* of *katigraha*

<i>Dosha</i>	<i>Vata-Vyana, Apana (vrudhi), Kapha- Sleshaka(kshaya)</i>
<i>Dushya</i>	<i>Dhatu- Rasa, Mamsa, Asthi, Majja Upadhatu- Snayu</i>
<i>Agni</i>	<i>Jataragni, Dhatwagni</i>
<i>Udbhava sthana</i>	<i>Pakwashaya</i>
<i>Sanchara sthana</i>	<i>Sarvashareera</i>
<i>Vyaktha sthana</i>	<i>Kati pradesha</i>
<i>Srotas</i>	<i>Asthivaha, rasavaha, pureeshavaha</i>
<i>Roga marga</i>	<i>Madyama</i>

Lumbar spondylosis can begin in persons as young as 20 years. It increases with, and perhaps is an inevitable concomitant of, old age. That is why it appears to be a nonspecific aging phenomenon, also known as spinal arthritis. Patients with lumbar spondylosis have pain in the axial spine. The location of these degenerate changes is not surprising as nociceptive pain generators that were identified within facet joints, intervertebral disks, sacroiliac joints, nerve root dura and myofascial structures. When we see the interventions available in allopathy.

Non surgical management

NSAIDS, Opioid medication, Antidepressants, Muscle relaxants (intra-articular injection of local anesthetics with or without steroids), Lumbar Facet joint injections, Taping, Lumbar support with the help of braces.

Surgical management

Lumbar fusion (Two vertebrae are fused together and will subsequently act like one solid vertebra), Artificial Disc Replacement (ADR) others Lumbar back support, Patient education, TENS, Massage, Manual therapy, Traction, Exercise therapy, Physical Therapy Management. 2 All these are symptomatic treatment and this intervention have its own limitations and adverse effects. Thus, importance of Ayurvedic management, which more nuritioning and promising are

being noticed and appreciated by public. All *Vataja* diseases are *Shoola pradhana* and its site are *Sandhis* due to *Ashraya ashrayi bhava*

Relation between Vata and Asthi

There is a relation between the *Dosha* and *Dushya* because of their *Bhauthika* constituents, which has been well narrated in *Ashtanga hridaya* as *Ashraya Ashrayi Bhava*. *Vata* is located in *Asthi*, *Pitta* in *Sweda*, *Rakta* and *Kapha* in *Rasa*, *Mamsa*, *Meda*, *Majja*, and *Sukhra*. It is because of this relation that the drugs or dietics regimens which augment one particular *Dosha* also have the effect on its dependent *Dhatu*. But, on contrary to this augmentation of *Vata* leads to decrease in *Asthi* and vice versa. In the similar way it is related with *Kapha*. *Kshaya of Kapha* will cause increase in the quantum of *Vata* and vice versa.³ As the qualities of both *Dosha* and *Dushya* are same intervention that is *Sigdha*, *Ushna*, *Guru*, like *Sneha basti* give wonderful result.

Observations in study

Nature of work: This is very important *Nidana* for the disease manifestation. Here 50% maids or beedi workers both indulge in continuous work and stress is another factor due to daily pay these intend to skip meals for higher pay. Similar *Nidana* are seen in 40%

of population that include coolie and field workers with lot of physical work under sun.

Social status and education: About 56.66% had education only till primary school, similarly 56.66% belonged to lower social status maybe due to less education qualification the type of work involve more physical work and stress .

Dietary habit: Even though 60% belonged to mixed diet they used to consume meat rarely and usual diet would always be little in quantity dry and spicy with usual diet as ganji.

Prakruthi: Maximum belonged to *Vata Kapha Prakruthi* 46.66% even though by nature they seemed *vata Kapha* due to *Nidana vata dusti* had occurred .*Prakruthi* with *Vata pradhanathva* make it difficult for disease management.

Koshta: 53.33% of patients had *Krura koshta* some due to *Prakruthi* and many others due to *Nidana Sevana and Vata dushti(apana)* and 40% had *Madhyama koshta* due to *Prakruthi* but many had complaint even though it was *Madhyama koshta* it would be *Alpa*.

Mode of onset: More than 50% i.e 53.33% of patients had gradual onset as disease process became chronic the involvement of *Vata dosha* was more leading to more *Sthambha* whereas in those with sudden onset 30% *Ruk* was more *Sthamba* was muscular contraction, pain was purely due to bone degeneration.

Course of disease: 50% of sample had progressive increase in disease course than continuous. Disease course was intermittent with medication.

Nidra: 60% of the sample had disturbed sleep may it be due to *Prakruthi* or due to *Vata* dominance leading to *Vishama nidra*.

Exercise: Here exercise is nothing but amount of physical work done. 53.33% of total sample used to do heavy physical work (*Ativyayama*) which is the main *Nidana* for *Vata prakopa* and *Dhatu kshaya*.

Built: 53.33% of patients had lean built maybe due to *Prakruthi* but mainly due to *Ativyayama*. 43.33% had moderate built as they compensated proper food with work but none were obese.

Sara: As most of the patients belong to lower class none had *Pravara sara*. 83.33% had *Madhyama sara*

except for some coolie workers who had exhausted themselves with work 16.66% others had mild to moderate decrease in *Dhatu sara*.

Satva: Most of the patients had *Madhyama satva* 73.33%. 10% had *Pravara satva* with determined timely daily activity and dedication to treatment and pathya.16.66% had *Avara satva* with fear about their disease crying and intolerance.

Samhanana: Maximum of patients had *Madhyama samhanana* 83.33%

Sathmya: Even though many where i.e 66.66% had *Madhyama sathmya* 16.66% each had *Pravara* and *Avara sathmya*

Abhyavaharana and Jarana shakthi: Due to *Vishamagni* many patient even though felt hungry couldn't digest all or sometimes had no hunger. 60% had proper hunger and 66.66% had proper digestion of ingested food. 30% had *Pravara shakthi* due to good physical work (differentiating hunger and thirst is important)

Vyayama Shakti: 63.33% had *Madhyama vyayama shakthi* this means they were suffering from mild to moderate *Dhatu kshaya* that did not hinder much of their daily work.

Chronicity: About 80% of the total sample had complaints since 1-3 years due to chronicity too maximum degeneration may have caused.

Why *Matra basti* ?

Acharya charaka says that *Matra basti* has no restrictions of *Ahara vihara*. It can be given in all times and all seasons as it has no *Upadrava* or complications. The quantity is equivalent to *Hrasva matra* of *snehapana*. He further adds that such a *Basti is Balya, Sukopacharaya, Sukham shrisht-pureesha krita, Brimhana, Vataroganut*.

Ashtang hridayakara uses the word '*Sukha*' for *matra basti*, referring to the ease of administration and action. Hemadri commenting on the word '*Sukha*'*basti* to be '*Vyapada rahita*', that is devoid of complications.

Arunadatta commenting on the word "*Nishparihara*", explains it as '*Aniyantritta*', means there is no restriction of day to day activities while undergoing *matra basti*.

EFFECTS OF MATRA BASTI

1. *Balya*-increase strength of body, 2. *Sukham shrisht-pureesha krita*- helps in easy evacuation of bowel 3. *Brimhana*-nourishes the *dhatus.*, 4. *Vataroganugata*-cures *vata*vyadhi Vagbhata adds. 5. *Doshagna*-pacifies the *Dosha.*, 6. *Varnaya*-gives good complexion

MODE OF ACTION OF BASTI

Susrutha has stated that the actions of *Vasti* are mainly due to *Veerya* (Specific action or property). He further elaborates that the drugs used in *Vasti-karma* will however spread in the body from *Pakwasaya* due to their *Veerya* through appropriate channels In the same way, as water sprinkled at the root of tree, circulates all over the tree by its own specific property (*Veerya*). So, *Vasti karma* eliminates the morbid *Dosas* and *Dusyas* from the entire body (by *Srotosudhi*) whether lodged in a part. So its effects are also *Tridosahara*.

In an important study, Sastry, M.K. and Singh, R.H. (1993) postulated four dimensional views for pharmacological action and therapeutic effects of *Vasti*, as follows:

- A. Action of *Vasti*, due to its unique procedure (Procedural effect)
- B. Action of *Vasti* due to *gunas* of the drug used in *vasti dravya* (Drug effect)
- C. Action of *Vasti* by *Srotosudhi* and *Sodhana* of body (*Sodhana* effect)
- D. Action of *Vasti* by regulating the enteric nervous system or GUTBRAIN (Regulating effect on gut brain). 4

The organs which are in close relation to Basti Karma are Guda, Nabhi, Kati Parshwa, kukshi and Basti. So we have to closely check the vitality of these organs which are responsible for making the Basti as a unique one.

Nabhi: Situated in between *Amasaya* and *Pakvashaya*. It is considered as the *mulasthan* of *Dhamani* and *Sira*. Just like water is transported through the stems of lotus, transportation of materials in the body takes place through *Sira* originating from *Nabhi*. Among 24 *Dhamanis*, 10 is said to supply above *Nabhi*, and 10 supplies below *Nabhi* and the last 4 go in *Tiryak-*

marga and they split again and again as enumerable and spread throughout as a network.

The given *Basti* will reach first into the organ named *Basti*. This organ is in direct relation with *Mushka*, *Seevani*, *Sthula Guda*, *Shukra* and *Mutra vaha Nadi*.

The organ related to *Kati*, *Parshwa*, *Kukshi* may be the *Pakwasaya*. *Pakwasaya* extend from *Grahani* to *Guda*. It is the *Mulasthan* of *Pureeshavaha Srothas*. *Grahani* is considered as *Pitta Dhara Kala*. *Pitta Dhara Kala* is not different from *Majjadhara Kala* and *Pureesha Dhara Kala* is not different from *Asthidharakala*.⁵

So, it is clear that *Basti* has direct effect on *Asthi* and *Majja Dhatu*.

Basti action is defined based on drugs used in oil and its quantity.

Bala taila: *Balamoola.*, *Rasa- madhura.*, *Guna- Guru*, *Snigdha.*, *Virya- Sheeta.*, *Vipaka- Madhura.*, *Actions: Vata*pittashamaka, *Balya*, *Snehana*, *Hridya*, *Rakthapittashamaka*, *Shukrala*, *Prajasthapana*, *Mutrala*, *Jwaraghna*, *Ojovardhaka*, *Vatahara*.

Thus best drug of choice in *Kevala vata*, *Kroora koshta*, *Dhatu kshaya* (*Ati vyayama*, *Laghu Ruksha bhojana*, *Chinta*), *Vridhdha*, in *Apana vayu dushti* that lead to *Sukra*, *Mutra*, *Pureesha*, *Vyadhi* this gives best benefits. Its effect till *Ojas* will show effect on *Manas* and on overall improvement of health of patients.

Goksheera:

Rasa – Madhura, *Guna – Guru*, *Sheeta*, *Mrudu*, *Snigdha*, *Bahala*, *Prasanna.*, *Virya – Shita.*, *Vipaka – Madhura.*, *Prabhava – Manaskara.*, *Karma – Jeevaniya*, *beneficial in Kshathaksnina*, *Rasayana*, *relieves Trishna* and *Shrama*, *Sthanyakara*, *Balya*, *beneficial in chronic fever*, *dysuria*, *bleeding disorders*. One of the effects is *manaskara*, its other properties are very well known. Even in modern science it's a major source of calcium.

Tila taila: *Rasa: Madhura.*, *Anurasa: Tikta*, *Kashaya.*, *Guna: Snigdha*, *Guru*, *Suksma*, *Vyavayi*, *Visada*, *Sara*, *Vikasi.*, *Virya: Ushna.*, *Vipaka: Madhura*
Karma: Balya, *Cakshushya*, *Dipana*, *Garbhasaya Sodhana*, *Kesyaya*, *Medhya*, *Sandhaniya*, *Snehana*, *Stanyajanana*, *Tvakprasadana*, *Vatahara*, *Vranaropana*, *Vranasodhana*, *Vrusya*.⁶

All these drugs used in *Taila* have *Madhura rasa* as *Pradhana rasa* and *Madhura vipaka* along with *guru Snigdha* which is *Vatahara*. Due to *Ushna guna* of base oil, *Bala* and *Ksheera* even if *Sheetha* become *Samskaritha* and don't act contrary. These drugs are also *Balya* and *Rasayana* which are the qualities which help in prevention of disease from occurring again and nourish the body from its roots.

Based on absorption of drugs administered via anus and its action on ENS and lipid profile and other tissue and cellular level has been explained thus all these properties along with other stimulatory and local benefits have mesmerizing effect on disease and overall health of patients.

Other aspect to remember is action of drugs in *basti* based on *Prabhava*. *Prabhava* cannot be explained and known only with effect seen in patients. *Basti* drugs crossing BBB and showing its effect at CNS with action at ENS is an effect that can be told as one aspect of *Prabhava*. Subtle form of drugs used in *taila* and as these is lipid soluble its easy absorption into cellular membrane and its action there in is another aspect. This way many theories have been discovered till today and many yet to be discovered regarding the action *Prabhava*.

CONCLUSION

- This study was designed with a small sample size of 30, with 15 patients in each group and treatment of *Katigraha* was assessed on 5 parameters.
- Age group ranging from 40-60 had suffered from this disease as pathology was degenerative, surprisingly patients ranging from 20-30 were also seen which is alarming and thus is important to look through the lifestyle and food habits.
- *Basti* is already given great importance in *Samhita* quoting it as *Ardha chikitsa*. *Kevala vataja Kati graha* being one of indications for *Sneha basti* which was implemented with *Brumhana* and *Vatashamana* drugs thus lead to extremely significant results.
- Practically when observed standard *Matra basti* administered patients showed improvement from 3rd day and with progressive improvement. But

Arohana matra basti patients started showing improvement from 5th day and during 9th day complained of *Pureeshavrutha vata* like symptoms (milder form).

- Schober's sign getting significant result in group B than in group A may be due to more restricted flexion movement seen in group B than in group A.
- Statistically insignificant differences were seen in other parameters when compared between group A and group B.
- In general statistically significant results were seen in both the groups which confirm effect of *Matra Basti* in *Kevala vataja katigraha* to be very effective.

REFERENCES

1. Kaushika sutra.31:7, Nesari Manoj et al, The study on the role of Amritaballaytaka and Rajayapanabasti in the management of Kati shula w.r.to Spinal degenerative disease, P.G. thesis. I.P.G.T. & R.A., Jamnagar, Year February 1991. Pp-4.
2. https://www.physio-pedia.com/Lumbar_Spondylosis
3. TrikamjiJadavji edited Charaka Samhita by Agnivesha, revised by charaka and Drudabala with Ayurveda deepika commentary by Chakrapanidatta, sutrasthana, chapter no 20, sloka no 8, reprint edition 2011, Pub: chaukhambaparakashan, Varanasi.
4. Subina S. et al: Understanding the mode of action of Basti karma (Medicated enema).AAMJ/Vol 1/Issue 4/July-Aug 2015.
5. Swapnil Auti S et al, Basti (Medicated enema)-An alternative in prevention and management of Diabetes. Ayurpharm Int J Ayur Alli Sci., Vol 2, No 11(2013) Pages 350-356.
6. Nishteswar. K et al written Dravya guna vijnana, edition 2010, page no-16,196, Pub: Chaukhamba Sanskrit pratishthan, Delhi.

Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Prathibha Sharma & Sudharshan Bhat: A Comparative Clinical Study of Arohana Matra Basti and Standard Matra Basti in Kevala Vataja Katigraha Vis-À-Vis Lumbar Spondylosis. International Ayurvedic Medical Journal {online} 2019 {cited April, 2019} Available from: http://www.iamj.in/posts/images/upload/506_513.pdf