

Assessment Of Add-On Effect Of Matravasti With Sahacharadi Taila Along With Jambeera Pinda Sweda In Gridhrasi W. S. R To Low Back Pain

Dr Anand DA^{1*}, Dr Manjula Matekar², Dr Priya Padmanabhan³

¹Ph.d Scholar, Dept of Panchakarma Bharati Vidyapeeth College of Ayurveda Pune.

²Associate Professor Dept. of Panchakarma Bharati Vidyapeeth College of Ayurveda Pune.

³Professor & HOD Dept of Roga Nidana PNPS Ayurveda Medical College Kanhangad..

Corresponding author

Dr Anand D A,

Dept of Panchakarma, Bharati Vidyapeeth College of Ayurveda, Pune - 411 043

Email Id: dranandayur@gmail.com

Cite this paper as: Dr Anand DA, Dr Manjula Matekar, Dr Priya Padmanabhan, (2025) Assessment Of Add-On Effect Of Matravasti With Sahacharadi Taila Along With Jambeera Pinda Sweda In Gridhrasi W. S. R To Low Back Pain.. *Journal of Neonatal Surgery*, 14 (32s), 2564-2574

ABSTRACT

Gridhrasi is one among the vatavyadhi which is characterized by stamba, ruk, toda, grihnati and spandana in sphik purva, kati prishta, uru, janu, janga and pada[1]. Nowadays, gridhrasi is commonly presented as low back pain radiating to legs. It is of great importance in the present scenario as the prevalence of low back pain has been increasing in the world population. A clinical study was conducted among 20 participants by dividing them into 2 groups consisting of 20 participants each. To the participants in Group A, matravasti with sahacharadi taila was introduced along with jambeera pinda sweda and to the participants in Group B only jambeera pinda sweda was administered. Significant changes were noted in the observations and it was found that matra vasti with sahacharadi taila was effective in reducing the symptoms of gridhrasi along with jambeera pinda sweda.

Keywords: Gridhrasi, Low back pain, Jambeera pinda sweda, Matra vasti

1. INTRODUCTION

Low back pain is a very common health problem, affecting a large portion of the population worldwide. It has a global incidence of 9.4% and lifetime incidence varies between 13-40%[2]. Low back pain is common from the second decades of life and intervertebral disc disease is seen more in third and fourth decades, especially in working adults. Low back pain may cause radiating pain to leg as a part of sciatic nerve compression causing the condition known as 'sciatica'. Sciatica prevalence ranges from 3.8% to 7.9%[3]. Low back pain has to be given careful consideration of all treatment options including conservative approaches. Conservative treatments provide temporary relief to the patient causing recurrence of symptoms. Spinal surgeries carry several risks of complications and Failed Back Surgery Syndrome is a common occurrence where pain persists or worsens after surgery. Therefore, it is important to diagnose accurately and a multidisciplinary approach has to be taken to minimize the risk of Failed Back Surgery Syndrome and maximize long term outcomes.

Gridhrasi is a type of vataja nanatmaja vyadhi, which is classified into two: Vataja and Vatakaphaja gridhrasi [4]. The symptoms of gridhrasi are stamba, ruk, toda, grihnati and spandana in sphik purva, kati prishta, uru, janu, janga and pada[5]. The additional symptoms mentioned in vataja and vatakaphaja gridhrasi are dehavakrata and tandra, gourava, aruchi respectively [6]. The sedentary life style, stress, improper postures, continuous jerky movements in travelling etc puts pressure on spine leading to low back pain and patient suffers from gridhrasi. Gridhrasi is considered as a pakwashaya samudbhava vyadhi, primarily caused by imbalances in vata dosha, mainly vyana vata and apana vata. Here, kapha causes avarana to the vitiated vata and thus restricts normal movements by affecting the kandara[7]. Straight Leg Raising (SLR) test is crucial for diagnosis and assessing treatment progress.

The treatment methods of gridhrasi mentioned in classical references are abhyanga, swedana, deepana, pachana, vamana, virechana and basti. Basti Karma is a cornerstone of Ayurvedic treatment, particularly for Vata disorders. [8] It cleanses the srotas by removing impurities and by removing avarana. Basti karma moistens and soothes Vata, which is crucial in.

Gridhrasi due to its dry and rough nature. It regulates apana vayu, associated with elimination, which is often disturbed in Gridhrasi. By addressing the root cause of Vata imbalance, Basti effectively restores overall body equilibrium. This makes it a highly regarded and “Sarvarthakari” (fruitful) treatment for Gridhrasi

Basti is of many types on the basis of ingredients, dosage, and needs. The simplest type of basti- matra basti has been selected for the present pilot study and it can be administered to all patients irrespective of age, sex, time etc. Due to the sthanasamsraya of vitiated vata in low back region and twak is one of the vata stana, sweda procedure called Jambheera pinda sweda has been selected for the present study. The study focuses on a combined approach of both matra vasti with sahacharadi taila and jambheera pinda sweda, so as to find its add on effects. The treatment aims to address the Samprapti rather than merely alleviating symptoms. This is expected to reduce the chances of recurrence and the primary objectives are to improve the patient's quality of life by reducing the severity of Gridhrasi and enabling them to perform daily activities more easily.

2. OBJECTIVE

To evaluate the add on effect of matra basti with sahacharadi taila along with jambheera pinda sweda in the management of gridhrasi.

METHOD OF COLLECTION OF DATA

SAMPLE SIZE

20 patients suffering from gridhrasi fulfilling the inclusion criteria were selected for the study from out-patient and in-patient departments and they were assigned into 2 groups.

Group A: 10 patients of this group were administered matravasti with sahacharadi taila and jambheera pinda sweda.

Group B: 10 patients of this group were given jambheera pinda sweda only.

INCLUSION CRITERIA

Patients within the age group of 16-70yrs

Participants with pain in low back

SLR test positive at 30-90

Participants with pain on VAS of 6 or more.

Participants of both sexes.

Participants eligible for Matra basti.

Patients fit for swedana therapy.

Participants who are willing to give informed consent

EXCLUSION CRITERIA

Neoplastic, road traffic accidents & infective conditions of the spine

History of spinal surgery and vertebral fracture.

Patients unfit for swedana therapy.

Patients unfit for Matra basti.

Patients who cannot answer the questionnaire will be excluded.

Patients who will not issue written consent will be excluded.

DIAGNOSTIC CRITERIA

Patients suffering from gridhrasi with symptoms such as:

Stamba

Ruk

Toda

Grihnati

Spandana

Patients with all the above mentioned symptoms in sphik purva, kati prishta, uru, janu, janga and pada were selected for the present pilot study.

TREATMENT PROTOCOL

The present study emphasises on the add-on effect of matra vasti with sahacharadi taila along with jambeera pinda sweda in gridhrasi. 20 patients were selected for the study and were divided into 2 groups. Group A consists of 10 patients. For them, Jambeera pinda sweda was administered for 20 minutes daily and matra vasti with sahacharadi taila was given at afternoon immediately after food. Group B consists of another 10 patients and they were given jambeera pinda sweda only. This treatment protocol was carried out continuously for 7 days. Assessment of the patient was done before treatment, after treatment (7th day) and after follow up done after 30 days (37th day) and the observations were analysed.

PREPARATION OF JAMBEERA PINDA SWEDA ^[9]

INGREDIENTS

JAMBEERA(Citrus aurantifolia)

LASHUNA(Allium sativum)

TILA TAILA

COCONUT GRATINGS

The total quantity of contents required in a single pottali is 250 grams.

METHOD OF PREPARATION

The jambeera and lashuna are cut into pieces. Tila taila is poured into hot iron pan and the sliced jambeera and lashuna are added into it. Saute the contents for some time and add the coconut gratings into it. Saute it until the coconut turns into reddish brown colour. Then the contents are tied into pottalis.

PROCEDURE OF JAMBEERA PINDA SWEDA

PURVAKARMA

Sarvanga abhyanga is done for 10 minutes and the pottalis are kept for heating in iron pan.

PRADHANAKARMA

The heated pottalis are kept on the patient's body for fomentation. This procedure is done for 20 minutes .The temperature of the pottalis have to be maintained by repeating them.

PASCHAT KARMA

The oil is wiped off from the patient's body and rasnadi choorna is applied on the vertex. Patient is asked to take bath in lukewarm water after half an hour.

PREPARATION OF SAHACHARADI TAILA ^[10]

INGREDIENTS

SAHACHARA (Barleria prionitis)

KSHEERA

TILA TAILA

SARKARA

PREPARATION

To one adaka of tila taila, 1 tula of swarasa of sahachara plant is added and boiled. To this 10 pala of sahachara moola kalka is added and it is stirred continuously. To this mixture, 4 times of milk is added along with 18 pala of sarkara and stirred continuously until it reaches madyama paka.

PROCEDURE OF MATRA BASTI

PURVAKARMA

Sthanika abhyanga is done on kati, prishtha, sakti and udara. After that, nadi sweda is performed on these regions.

PRADHANA KARMA

Patient is asked to lie in left lateral position. The oil is heated mildly and matrabasti is introduced using glycerine syringe loaded with 60 ml of sahacharadi taila.

PASCHAT KARMA

Tadana of the buttocks is done and patient is asked to lie in uttana position.

STUDY DURATION

Group A

1- 7th day : Jambeera pinda sweda and matra vasti is given

7th day: Assessment is done

Follow up on 37th day

Group B

1-7th day: Jambeera pinda sweda is given

7th day : Assessment is done

Follow up on 37th day

ASSESSMENT CRITERIA

Assessment is done based on both subjective and objective parameters

Subjective parameters are:

Stamba

Ruk

Toda

Grihnati

Spandana

Gaurava

Tandra

Aruchi

Suptata

Sakthikshepa nigraha

Objective parameters are:

VAS

ODI

SLR

Schober's test

Lumbar spine flexion

Lumbar spine extension

Lumbar spine lateral bending

Lumbar spine lateral rotation

SWEDA SAMYAK LAKSHANAS

Sheetakshaya

Shoolakshaya

Stamba nigraha

Gourava nigraha

Mardava janana

Sweda srava

Deeptagni

Vyadhihani

SAMYAK LAKSHANAS OF MATRA VASTI

Sapurisha sneha nivruthi

Vata Anuloma

Deeptagni

Asamhata varchas

Sneha udwega

Klama

Angamarda

Vimalendriya

Swapna nivruthi

Laghuta

Balam

Srishta vega

Vayasthapana

Raktadi prasada

Budhi prasada

Indriya prasada

GRADING OF SUBJECTIVE PARAMETERS

Table 1: Table showing grading of subjective parameters

SL.NO	SYMPTOM	CRITERIA	SCORE
1	STAMBA	No stamba	0
		Mild stamba	1
		Moderate stamba	2
		Severe stamba	3
2	RUK	No ruk	0
		Painful walk without limping	1
		Painful walk with limping with support	2
		Painful walk only with support	
		Painful & unable to walk	3

			4
3	TODA	No toda Mild toda Moderate toda Severe toda	0 1 2 3
4	GRIHNATI	No grihnati Mild grihnati Moderate grihnati Severe grihnati	0 1 2 3
5	SPANDANA	No spandana Mild spandana Moderate spandana Severe spandana	0 1 2 3
6	GAURAVA	No gaurava Mild gaurava Moderate gaurava Severe gaurava	0 1 2 3
7	ARUCHI	No aruchi Mild aruchi Moderate aruchi Severe aruchi	0 1 2 3
8	TANDRA	No tandra Mild tandra Moderate tandra Severe tandra	0 1 2 3
9	SUPTATA	No suptata Mild suptata Moderate suptata Severe suptata	0 1 2 3
10	SAKTHIKSHEPA NIGRAHA	No sakthikshepa nigraha Mild sakthikshepa nigraha Moderate sakthikshepa nigraha Severe sakthikshepa nigraha	0 1 2 3

GRADING OF OBJECTIVE PARAMETERS

Table 2: Table showing grading of objective parameters

SL NO	PARAMETER	CRITERIA	SCORE
-------	-----------	----------	-------

1	VAS	No Pain	0
		Mild Pain	1-3
		Moderate Pain	4-6
		Severe Pain	7-10
2	ODI	Minimal Disability	0-20%
		Moderate Disability	21%-40%
		Moderate Disability	41%-60%
		Crippled	61%-80%
		Bed Bound	81%-100%

OBSERVATIONS AND ANALYSIS

In the present pilot study, it was found that there was an add on effect of matravasti with sahacharadi taila along with jambeera pinda sweda other than jambeera pinda sweda administered alone. There was significant change in subjective parameters such as stamba, ruk, toda, grihnati, tandra, gourava, suptata, sakthikshepa nigraha. In terms of objective parameters, remarkable changes were noticed in VAS and ODI. There was also an increased percentage of improvement in Sweda Samyak Lakshanas like sheetakshaya, shoolakshaya, stamba nigraha, gourava nigraha, mardava janana, deeptagni and vyadhihani. In terms of Samyak lakshanas of matravasti, noteworthy changes were noticed in sapurisha sneha nivruithi, vata Anuloma, deeptagni, asamhata varchas, sneha udwega, klama, angamarda, vimalendriya, swapnanuvrithi, laghuta, balam, srishta vega, vayasthapana, raktadi prasada, bhudhi prasada and indriya prasada.

Table 3: Table showing observations of Group A and Group B in terms of subjective parameters

Parameter	Group A					Group B				
		BT	AT	x	% of of improvement		BT	AT	X	% of improvement
Stamba	BT-AT ₁	0.8	0.4	0.40	50.00%	BT-AT ₁	1.8	1.1	0.70	38.89%
	BT-AT ₂	0.8	0.2	0.60	75.00%	BT-AT ₂	1.8	0.5	1.30	72.22%
Ruk	BT-AT ₁	1.7	1	0.70	41.18%	BT-AT ₁	1.8	1.3	0.50	27.78%
	BT-AT ₂	1.7	0.5	1.20	70.59%	BT-AT ₂	1.8	0.6	1.20	66.67%
Toda	BT-AT ₁	1.7	0.8	0.90	52.94%	BT-AT ₁	2	1.2	0.80	40.00%

	BT-AT ₂	1.7	0.3	1.40	82.35%	BT-AT ₂	2	0.5	1.50	75.00%
Spandana	BT-AT ₁	0.2	0.1	0.10	50.00%	BT-AT ₁	0.4	0.2	0.20	50.00%
	BT-AT ₂	0.2	0.1	0.10	50.00%	BT-AT ₂	0.4	0	0.40	100.00%
Grihnati	BT-AT ₁	0.4	0.2	0.20	50.00%	BT-AT ₁	0.7	0.5	0.20	28.57%
	BT-AT ₂	0.4	0.1	0.30	75.00%	BT-AT ₂	0.7	0.3	0.40	57.14%
Gourava	BT-AT ₁	0.9	0.4	0.50	55.56%	BT-AT ₁	2	1.3	0.70	35.00%
	BT-AT ₂	0.9	0	0.90	100.00%	BT-AT ₂	2	0.5	1.50	75.00%
Aruchi	BT-AT ₁	0	0	0.00	0.00%	BT-AT ₁	0	0	0.00	0.00%
	BT-AT ₂	0	0	0.00	0.00%	BT-AT ₂	0	0	0.00	0.00%
Tandra	BT-AT ₁	0.5	0.2	0.30	60.00%	BT-AT ₁	1	0.6	0.40	40.00%
	BT-AT ₂	0.5	0	0.50	100.00%	BT-AT ₂	1	0.3	0.70	70.00%
Suptata	BT-AT ₁	0.8	0.5	0.30	37.50%	BT-AT ₁	1.2	0.8	0.40	33.33%
	BT-AT ₂	0.8	0.2	0.60	75.00%	BT-AT ₂	1.2	0.3	0.90	75.00%
Sakthikshepa nigraha	BT-AT ₁	0.8	0.2	0.60	75.00%	BT-AT ₁	1.5	0.9	0.60	40.00%
	BT-AT ₂	0.8	0	0.80	100.00%	BT-AT ₂	1.5	0.4	1.10	73.33%

OBJECTIVE PARAMETERS

Table 4: Table showing observations of Group A and Group B in terms of objective parameters

Parameter	Group A					Group B				
		BT	AT	x	% of improvement		BT	AT	x	% of improvement
VAS	BT-AT ₁	7.1	4.1	3.00	42.25%	BT-AT ₁	7.1	4.1	3.00	42.25%
	BT-AT ₂	7.1	1.7	5.40	76.06%	BT-AT ₂	7.1	1.7	5.40	76.06%

ODI	BT-AT ₁	46.1	27.6	18.50	40.13%	BT-AT ₁	51.4	36	15.40	29.96%
	BT-AT ₂	46.1	18.6	27.50	59.65%	BT-AT ₂	51.4	24.8	26.60	51.75%
SLR(RIGHT)	BT-AT ₁	56.5	73	16.50	29.20%	BT-AT ₁	53	70.5	17.50	33.02%
	BT-AT ₂	56.5	81	24.50	43.36%	BT-AT ₂	53	78	25.00	47.17%
SLR(LEFT)	BT-AT ₁	62	74.5	12.50	20.16%	BT-AT ₁	52	67.5	15.50	29.81%
	BT-AT ₂	62	80.5	18.50	29.84%	BT-AT ₂	52	76	24.00	46.15%
SCHOBER'S	BT-AT ₁	17.1	18.5	1.40	8.19%	BT-AT ₁	17.5	18.3	0.80	4.57%
	BT-AT ₂	17.1	19.7	2.60	15.20%	BT-AT ₂	17.5	19.1	1.60	9.14%
LUMBAR SPINE FLEXION	BT-AT ₁	49	62.5	13.50	27.55%	BT-AT ₁	34	48.5	14.50	42.65%
	BT-AT ₂	49	68	19.00	38.78%	BT-AT ₂	34	54.5	20.50	60.29%
LUMBAR SPINE EXTENSION	BT-AT ₁	19.5	24.5	5.00	25.64%	BT-AT ₁	25	36.5	11.50	46.00%
	BT-AT ₂	19.5	27.5	8.00	41.03%	BT-AT ₂	25	39.5	14.50	58.00%
LUMBAR SPINE RL	BT-AT ₁	21	27	6.00	28.57%	BT-AT ₁	18.5	23.5	5.00	27.03%
	BT-AT ₂	21	31.5	10.50	50.00%	BT-AT ₂	18.5	25.5	7.00	37.84%
LUMBAR SPINE LL	BT-AT ₁	23	27	4.00	17.39%	BT-AT ₁	21.5	24.5	3.00	13.95%
	BT-AT ₂	23	32.5	9.50	41.30%	BT-AT ₂	21.5	26	4.50	20.93%
LUMBAR SPINE RR	BT-AT ₁	31	36	5.00	16.13%	BT-AT ₁	21	28.5	7.50	35.71%
	BT-AT ₂	31	40	9.00	29.03%	BT-AT ₂	21	36	15.00	71.43%
LUMBAR SPINE LR	BT-AT ₁	34.5	38.5	4.00	11.59%	BT-AT ₁	20.5	28.5	8.00	39.02%
	BT-AT ₂	34.5	40.4	5.90	17.10%	BT-AT ₂	20.5	36.5	16.00	78.05%

3. DISCUSSION

EFFECT ON SIGNS AND SYMPTOMS OF GRIDHRASI

In the present pilot study, the percentage of improvement of Group A in Stamba was 75% and in Group B it was 72.22%. In terms of ruk, the percentage of improvement was found to be 70.59% in Group A and 66.67% in Group B. Toda was found to be more effective in Group A with 82.35% improvement and in Group B it was found to be 75%. In terms of spandana, the percentage of improvement was 100% in Group B and 50% in Group A. Grihnati was found to be more effective in Group A with an increased percentage of improvement of 75.14% in Group A and 57% in Group B. There was 100% improvement in gourava in Group A whereas the percentage of improvement in Group B was 75%. Similarly there was 100% improvement in tandra in Group A and 70% improvement in Group B. Group A and Group B was found to be equally effective in terms of suptata with 75% of improvement. Sakthiskepa nigrha was found to be more effective in Group A with 100% improvement and in Group B the percentage of improvement was found to be 73.33%. There was also remarkable changes in the objective parameters and notable percentage of improvement in samyak lakshanas of swedana and matravasti.

PROBABLE MODE OF ACTION

JAMBEERA PINDA SWEDA: Since gridhrasi is one among the 80 vataja nanatmaja vyadhis, Vata is the primary dosha involved in it. Vata prakopaka nidanas lead to vitiation of vata causing its stanasamsraya in kati pradesha causing symptoms like stamba, ruk, toda, grihnati and spandana in sphik purva, kati prishta, uru, janu, jangha and pada. Twak is one among the vata sthanas, so snehana and swedana has profound effect in alleviation of vitiated vata. Moreover, classical references have mentioned about the importance of snehana and swedana in vatavyadhi chikitsa^[11]. Jambheera pinda sweda is a ruksha-snigdha type of swedana which has its action in vata-kaphaja disorders^[12]. Swedya Dravya gunas include ushna, tikshna, sara, snigdha, ruksha, Sukshma, drava and sthira^[13]. These gunas act opposite to symptoms like stamba, gourava etc thus reducing ruk and toda. Jambheera is one such swedya dravya, which, because of its tikshna guna has the capacity to penetrate into srotas and remove srotorodha. Swedana also causes vasodilation thus increasing circulation which helps in removing impurities and also facilitates in essential supply of nutrients and oxygen.

MATRA VASTI: Vasti is one of the panchakarmas which is considered as 'ardha chikitsa'^[14]. Matra vasti is one of the simplest and effective types of vasti which can be introduced irrespective of age, time etc and it does not have any complications. Pakwashaya is mentioned as one of the main stanas of vata. When a vasti is introduced, it travels first to pakwashaya and thus gains control over vata all over the body. The rectum has a rich blood and lymph supply and the drugs can cross the rectal mucosa like other lipid membranes. Thus by entering in circulation, vasti dravya acts on whole body^[15]. While explaining about the effects of Sneha vasti, Acharya Susruta explains that the first vasti given does snehana to vasti and vankshana, the second vasti alleviates vata residing in shiras, third vasti imparts bala and varna, fourth vasti permeates to rasa dhatu, fifth vasti to rakta dhatu, sixth vasti to mamsa dhatu, seventh vasti to medodhatu, eighth vasti to asti dhatu, ninth vasti to majja dhatu and this series when repeated twice tends to purify the shukra dhatu. A person who is treated with 18 such series of Sneha vastis develops 'sakunchara bala' (strength of elephant) and achieves longevity in life^[16]. This denotes the importance of Sneha vasti. Matra vasti being a type of Sneha vasti, also has similar effects in controlling vata and curing vata vyadhis like gridhrasi. In the present study, sahacharadi taila has been used. Sahachara is vatashamaka and sahacharadi taila is specially indicated in vata vyadhis. As a result, Matra vasti with sahacharadi taila has been highly effective in vatavyadhi like gridhrasi.

4. CONCLUSION

In this study, it was found that matravasti with sahacharadi taila had an additional effect in the management of gridhrasi along with jambheera pinda sweda other than jambheera pinda sweda as a treatment protocol alone. The symptoms of gridhrasi such as stamba, ruk, toda, grihnati, spandana, tandra, gourava and aruchi were more effectively reduced in Group A in whom matravasti was introduced. Moreover, there was profound results in improvement of objective parameters such as VAS, ODI, SLR etc and on Samyak lakshanas of both swedana and matra vasti. This study has thus been effective in proving that matravasti with sahacharadi taila has an additional effect along with jambheera pinda sweda in the management of gridhrasi.

REFERENCES

- [1] Caraka Samhita [Text with English translation & critical exposition based on Cakrapani Datta's Ayurveda Dipika], By R.K Sharma & Bhagwan Dash, Choukamba Sanskrit Series Office, Vol V, Chikitsastana, Chapter 28, verse 56-57, page no: 35.
- [2] Stuart H. Ralston, Ian D. Penman, Mark WJ. Strachan, Richard P. Hobson, Davidson's Principle and Practice of Medicine. 23ed. Elsevier, 1135p.
- [3] Kaila-Kangas L, Leino-Arjas P, Karppinen J, Viikari-Juntura E, Nykyri E, Heliövaara M. History of physical work exposures and clinically diagnosed sciatica among working and nonworking Finns aged 30 to 64. Spine

(Phila Pa 1976) 2009; 34: 964 - 9.

- [4] Caraka Samhita [Text with English translation& critical exposition based on Cakrapani Datta's Ayurveda Dipika] ,By R.K Sharma & Bhagwan Dash ,Choukamba Sanskrit Series Office, Vol V , Chikitsastana ,Chapter 28,verse 56-57,page no: 35.
- [5] Caraka Samhita [Text with English translation& critical exposition based on Cakrapani Datta's Ayurveda Dipika] ,By R.K Sharma & Bhagwan Dash ,Choukamba Sanskrit Series Office, Vol V , Chikitsastana ,Chapter 28,verse 56-57,page no: 35.
- [6] Caraka Samhita [Text with English translation& critical exposition based on Cakrapani Datta's Ayurveda Dipika] ,By R.K Sharma & Bhagwan Dash ,Choukamba Sanskrit Series Office, Vol V , Chikitsastana ,Chapter 28,verse 56-57,page no: 35.
- [7] Vagbhata's Astangahrdayam, translated by Prof.K.R.Srikantha Murthy, Volume-II, Choukamba Krishnadas Academy, Varanasi, Nidanastana, Chapter 15 ,verse 54,Page no:158
- [8] Vagbhata's Astangahrdayam, translated by Prof.K.R.Srikantha Murthy, Volume-I, Choukamba Krishnadas Academy, Varanasi,Sutrastana, Chapter 19 ,verse 1,Page no:238
- [9] Principles & Practice of Panchakarma, by Dr. Vasant.C.Patil, Atreya Ayurveda Publications, Swedana, Jambeera pinda Sweda ,page no:206
- [10] Charaka Samhita, Sanskrit text with English Translation, by Dr. Shashirekha H.K & Dr. Bargale Sushant Sukumar, Chaukambha Publications, Volume IV, Chikitsastana , Chapter 28, verse 144-145, page no:608
- [11] Vagbhata's Astangahrdayam, translated by Prof.K.R.Srikantha Murthy, Volume-II, Choukamba Krishnadas Academy, Varanasi, Chikitsastana, Chapter 21,verse 4-6,Page no:497,498
- [12] Ashtangahridaya Vagbhata,Sutrasthana -II with English Translation and Commentary, by T.Sreekumar, 7th Edition, Harisree Publications, Chapter 17, verse 13, page no:48
- [13] Caraka Samhita [Text with English translation& critical exposition based on Cakrapani Datta's Ayurveda Dipika] ,By R.K Sharma & Bhagwan Dash ,Choukamba Sanskrit Series Office, Vol 1 , Sutrastana ,Chapter 22,verse 16,page no: 388
- [14] Charaka Samhita, Sanskrit text with English Translation, by Dr. Shashirekha H.K & Dr. Bargale Sushant Sukumar, Chaukambha Publications, Volume V, Siddhistana , Chapter 1, verse 138-39, page no:125
- [15] Anil Patidar, Gopesh Mangal, Siddharth Sharma; Matra Basti-Mode of action-A conceptual study, International Research Journal of Ayurveda & Yoga, January 2022
- [16] Illustrated Susruta Samhita, by Prof. K.R. Srikantha Murthy, Chaukambha Orientalia, Varanasi, Volume II, Chikitsastana, Chapter 37, verse 71-76, page no:355