



Research Article

EFFECT OF NAUCLEA ORIENTALIS (BAKMI) IN THE FORM OF PARISHEKA SWEDA AND YOGA VASTI IN THE TREATMENT OF GRUDHRASI (SCIATICA)

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ABSTRACT

Authentic texts describe *Grudhrasi* under *Vata Roga*. One of its main clinical features is a pain that radiates from *Sphik Pradesha* (buttocks) to *Pada* (foot). It can be correlated with sciatica. *Piyusharnava*, describes that *Parisheka Sweda* using *Nauclea orientalis (Bakmi)* as a treatment for *Katigaha* (Lumbago). *Vasti Karma* using *N. orientalis (Bakmi)* is in practice and *Vasti* is the best treatment for *Vata Roga*. Seventy-five patients suffering from *Grudhrasi* (sciatica) were treated with *Parisheka Sweda*, *Vasti* and combined therapy. *Parisheka Sweda* was carried out for a period of seven days. *Vasti* was performed as *Yoga Vasti*. Both therapies were carried out in combined therapy group; namely, *Parisheka Sweda* followed by *Yoga Vasti*. All three groups showed statistically significant reduction in all the symptoms but there was no statistical difference between groups. *Parisheka Sweda* and *Yoga Vasti* using *Nauclea orientalis (Bakmi)* can be recommended as an effective treatment for *Grudhrasi* (sciatica).

KEYWORDS: *Nauclea orientalis, Bakmi, Parisheka Sweda, Vasti, Grudhrasi, Sciatica.*

INTRODUCTION

Grudhrasi is a disease described under *Vata Roga* occurring due to vitiation of *Vata* or *Vata* and *Kapha Dosha*.^[1] Clinical features of *Grudhrasi* are *Sthambha* (stiffness) and *Sphikpurva Katipushtoru janujanghapadam Kramath Grudhrasi Ruktoda* (severe pain starting in the lumbar region moving downwards through thighs, knees, calves and feet). If occurring only due to *Vata Dosha Sthabdha* (stiffness) and *Spandathe* (spasm) are experienced intermittently and, if due to association with *Kapha Dosha, Tandra* (lethargy), *Gaurawa* (heaviness) and *Arochaka* (anorexia) are present.^[1] Further, *Madhava* describes that *Toda* (pricking pain), *Dehasya Pravakranta* (irregular shape of the body parts), *Janu Kati Uru Sandhinam Sphuranam Sthabdhatta* (spasms and severe stiffness of joints of knee and wrist) are profound if *Vata Dosha* is affected alone in *Grudhrasi*. But if with *Kapha*, there will be *Agnimandaya* (poor digestive ability), *Tandra* (lethargy), *Praseka* (excessive salivation) and *Bhaktadvesha* (aversion to food) are profound.^[1] According to *Sushruta Samhita*, all the ligaments from heel to toes are afflicted by vitiated *Vata Dosha* and produce *Saktnah Kshepa* (restriction of movements in lower extremity).^[2] According to

Ashtanga Hridaya, vitiated *Vata Dosha* cause pain moving towards ankle or toes produce *Sakathyutkshepa* (difficulty in lifting thigh).^[3]

Grudhrasi can be correlated with sciatica. In sciatica, pain radiates along the path of the sciatic nerve. From lower back the pain spreads to buttocks and then down the back of leg and may also make the leg feel numb, weak, or tingly at times. Straight Leg raising test of Lasegue is positive in sciatica.^[4]

In *Bhavaprakasha*, *Vasti Karma* has been described as a therapeutic measure in treatment of *Grudhrasi*.^[5] *Sushruta* mentions that the same treatment procedures used in *Vata Roga* should also be carried out in treatment of *Grudhrasi*.^[6] *Sweda Karma* is described as a therapeutic measure for diseases originated by vitiation of *Vata* in *Charaka Samhita*.^[7] *Parisheka Sweda* is a type of *Sweda Karma* described in *Charaka Samhita*.^[8] *Vasti Karma* and *Sweda Karma* including *Parisheka Sweda* is beneficial in treatment of *Grudhrasi* as it is a disease caused by vitiation of *Vata* or *Vata Kapha*.

Ayurveda text *Piyusharnava*, describes that *Bakmi Parisheka* as a treatment for *Katigaha* (Lumbago).^[9] *Nauclea orientalis* (Family: Rubiaceae;

Sinhala name: *Bakmi*) is a small tree with silvery-grey smooth bark.^[10]

The patients suffering from *Grudhrasi* are treated successfully with *Bakmi Yoga Vasti* and *Bakmi Parisheka* using *Nauclea orientalis* at Ayurveda Teaching Hospital Borella, Sri Lanka. *N.orientalis* is described as *Vedanasthapana Aushadha*.^[11] So far, no known study has been carried out to scientifically evaluate the effects of these treatments. Therefore, the present study was carried out to evaluate the effect of *Bakmi Yoga Vasti* and *Bakmi Parisheka* in *Grudhrasi* (sciatica).

MATERIAL AND METHOD

Selection of patients

Seventy five patients who are having *Ruk* (pain) in *Sphik* (gluteal region) radiating to *Kati* (lumbar region), *Prushta* (back), *Uru* (thigh), *Janu* (knee), *Jangha* (calf region), extending down to *Pada* (foot), associated with *Sthabdha* (stiffness), *Toda* (piercing pain) and *Spanda* (spasms) were selected from Ayurveda teaching hospital, Borella, Sri Lanka. *Tandra* (lethargy), *Gaurawa* (heaviness) and *Arochaka* (anorexia) were also present in these patients. Patients with positive Lesage' sign, were also included in this research. Patients suffering from cardiovascular diseases, diabetes mellitus and fractures were excluded from the research. Selected patients were randomly divided into three groups using random number table. Each group consisted of 25 patients and named as Group A, B and C. Selected patients were thoroughly examined and investigations such X ray in lumbar sacral region was carried out. Severity of the clinical features was recorded using specially prepared proforma. Grading scale common to all symptoms are given below. The symptoms are assessed separately.

Grade 0 = Does not feel

Grade 1 = Feels occasionally

Grade 2 = Feels intermittently

Grade 3 = Feels often

Grade 4 = Feels always

The present research was carried out according to guidelines of Institute of Indigenous Medicine, University of Colombo, Sri Lanka. Before commencement of the research written consent was obtained from the patients.

Intervention

The patients of Group A were treated with *Bakmi Parisheka Sweda* once a day for a period of seven days. Group B was treated with *Bakmi Yoga Vasti* for a period of eight days. Patients of Group C were treated with combined therapy namely, *Bakmi*

Parisheka followed by *Bakmi Yoga Vasti* for a period of fifteen days.

a) *Bakmi Parisheka Sweda*

(i) Preparation of *Bakmi Kashaya* for *Bakmi Parisheka Sweda*

750gm of fresh leaves of *Nauclea orientalis* (*Bakmi*) was boiled in 24L of water until the volume was reduced to 3L.

(ii) Procedure of *Bakmi Parisheka Sweda*

Bakmi Parisheka Sweda was performed in the morning around 10.30 am for a period of seven days. The patients were oiled by applying 60ml of sesame oil on the lumbar sacral region and the legs before performing *Bakmi Parisheka Sweda*. *Bakmi Kashaya* for *Bakmi Parisheka Sweda* was warmed and temperature was maintained between 40°C to 42°C and poured over the lumbar sacral region and both legs from a height of 9 -12 cm for a period of 30 minutes. The time duration can be increased or decreased based on time taken to present *Samyak Sweda Lakshana* (adequate symptoms of fomentation) such as *Shoola Kshaya* (diminution of pain), *Sheeta Kshaya* (diminution of cold), *Svedasrava* (copious flow of sweat), *Vyadhi Hani* (mitigation of the disease) and *Laghutva* (lightness of the body).^[12,13]

b) *Bakmi Yoga Vasti*

Bakmi Yoga Vasti was conducted for a period of eight days. *Bakmi Niruha Vasti* was used as *Niruha Vasti* and *Bakmi Taila* was used in *Anuvasana Vasti*.

(i) Preparation of *Bakmi Niruha Vasti*

Bakmi Vasti was prepared by mixing ingredients according to procedure described in *Ashtanga Hridaya*.^[14] This was done by mixing 30ml of bee's honey with 10g of rock salt. Then 30ml of sesame oil was added to this mixture little by little while triturating. 30g of *Bakmi Kalka* was added to this mixture. Then 480 ml of decoction of *Nauclea orientalis* was added. The resultant mixture was used as *Bakmi Niruha Vasti*.

Bakmi Kalka was prepared by grinding powder of dried stem bark of *Nauclea orientalis* with water. Decoction for *Bakmi Vasti* was prepared by boiling 60gm of dried stem barks of *Nauclea orientalis* with 1920 ml of water till it reduced to one fourth of initial volume (480ml) as per *Ashtanga Hridaya*.^[15]

(ii) Preparation of *Bakmi Taila* for *Anuvasana Vasti*

Bakmi Taila was used for *Anuvasana Vasti* and was prepared according to *Taila Paribhasha*, as described in *Ayurveda*. When preparing *Taila*, generally

Kashaya (decoction), *Taila* (oil) and *Kalka* (paste) are taken in 16:4:1 proportion, respectively.^[16]

First *Bakmi Kashaya* was prepared by boiling 25 Kg of dried stem barks of *Nauclea orientalis* in 800L of water until it reduced to 100L. Then *Bakmi Kalka* was prepared by grinding 6.25Kg of powder of dried stem bark of *Nauclea orientalis* with water. 100 L of decoction of *Nauclea orientalis* (*Bakmi Kashaya*) and 25 L of sesame oil was mixed with 6.25Kg of *Bakmi Kalka* and boiled over a slow fire while stirring continuously. The stirring is required to avoid the *Kalka* adhering to the pot. When it reaches the *Samapaka* stage, oil was kept for cooling and filtered. *Samapaka* stage of oil was ascertained according to Sharangadhara Samhita. When a small quantity of *Kalka* was rolled with fingers, it became pliable and was not sticking to fingers. When a wick was dipped in the prepared oil, and held to a naked flame it burnt without any cracking noise, then it was understood that all the moisture has evaporated and *Taila* has reached *Samapaka* stage.^[17]

(iii) Procedure of administering *Vasti*

Snehana and *Swedana* was carried out as *Purva Karma* before *Vasti Karma*.^[18] *Snehana Karma* was carried out by applying on sesame oil which was warmed to body temperature, on the abdomen, thigh and lumbar sacral region. Then *Sweda Karma* was done in the form of *Ushma Sweda* (hot water steam). This was performed by soaking a thick cloth in boiling water, squeezed well and fomentation was conducted with the hot vapour coming out from the cloth. Then the patient was advised to lie down on left lateral position by straightening the left leg and flexing the right leg from the knee joint. Then the enemata was administered through the rectum and

patient was advised to take slow deep breaths while administering medicine.

Statistical analysis

The therapeutic effect was evaluated through symptomatic relief of the patients. Students paired 't' test was applied for each group separately and then Students unpaired 't' test applied for inter group comparison. $P < 0.05$ was considered as a significant effect.

RESULTS

Complete reduction of all the symptoms in Group A (*Bakmi Parisheka*) were more than 72% except *Tandra* (lethargy). and the symptom *Tandra* (lethargy) was unchanged 33.3% patients as given in Table 1 and Figure 1.

Complete reduction of all the symptoms in Group B (*Bakmi Yoga Vasti*) were more than 72%. Aggravation of symptom *Toda* (piercing pain) and *Sthabdha* (stiffness) were observed in 3.5% and 0.8% patients respectively as given in Table 2 and Figure 2.

Complete reduction of all the symptoms in Group C (combined therapy that is *Bakmi Parisheka* followed by *Bakmi Yoga Vasti*) were more than 72%. Aggravation of symptom *Toda* (piercing pain) and *Spanda* (spasm) were observed in 0.7% and 0.8% patients respectively as given in Table 3 and Figure 3.

The patients suffering from *Grudhrasi* (*sciatica*) in Group A (*Bakmi Parisheka*), Group B (*Bakmi Yoga Vasti*), and Group C (combined therapy that is *Bakmi Parisheka* followed by *Bakmi Yoga Vasti*) showed statistically significant reduction in symptoms as given in Table 4,5, 6 and Figure 4,5,6.

Though responses to all three therapies were statistically significant, there were no differences between groups.



Figure 1: *Naucleaorientalis* (*Bakmi*)

Table 1: Percentages of symptomatic relief in Group A (Bakmi Parisheka) in Grudhrasi (sciatica)

Clinical features	Group A (Bakmi Parisheka)			
	Complete Relief	Partial Relief	Unchanged	Aggravated
<i>Sthabdha</i> (Stiffness)	80	19.3	0.7	-
<i>Ruk</i> (Pain)	72.8	22.1	3.2	1.9
<i>Toda</i> (Piercing pain)	73.5	22	4.5	-
<i>Spanda</i> (Spasm)	83.5	12.4	4.1	-
<i>Tandra</i> (Lethargy)	66.7	-	33.3	-
<i>Gaurava</i> (Heaviness)	90.9	9.1	-	-
<i>Arochaka</i> (Anorexia)	85	10	5	-

Figure 1: Percentages of symptomatic relief in Group A (Bakmi Parisheka) in Grudhrasi (sciatica)

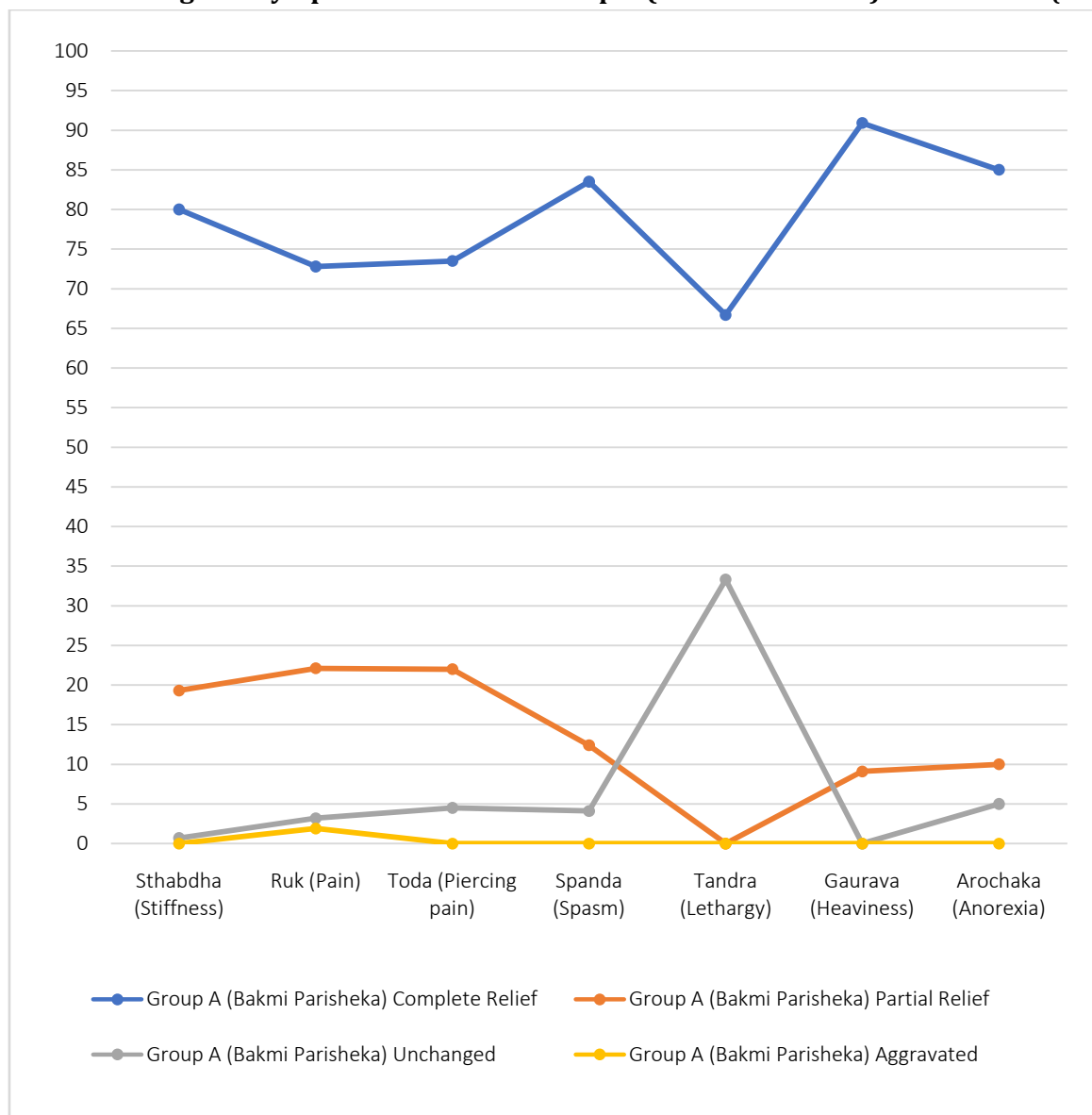


Table 2: Percentages of symptomatic relief in Group B (*BakmiYoga Vasti*) in *Grudhrasi (sciatica)*

Clinical features	Group B (<i>Bakmi Yoga Vasti</i>)			
	Complete Relief	Partial Relief	Unchanged	Aggravated
<i>Sthabdha</i> (Stiffness)	72.4	22	4.8	0.8
<i>Ruk</i> (Pain)	68.8	25.6	5.6	-
<i>Toda</i> (Piercing pain)	74.7	18.5	3.3	3.5
<i>Spanda</i> (Spasm)	81.4	14.8	3.8	-
<i>Tandra</i> (Lethargy)	72.7	9.1	18.2	-
<i>Gaurava</i> (Heaviness)	91.7	8.3	-	-
<i>Arochaka</i> (Anorexia)	90	10	-	-

Figure 2: Percentages of symptomatic relief in Group B (*BakmiYoga Vasti*) in *Grudhrasi (sciatica)*

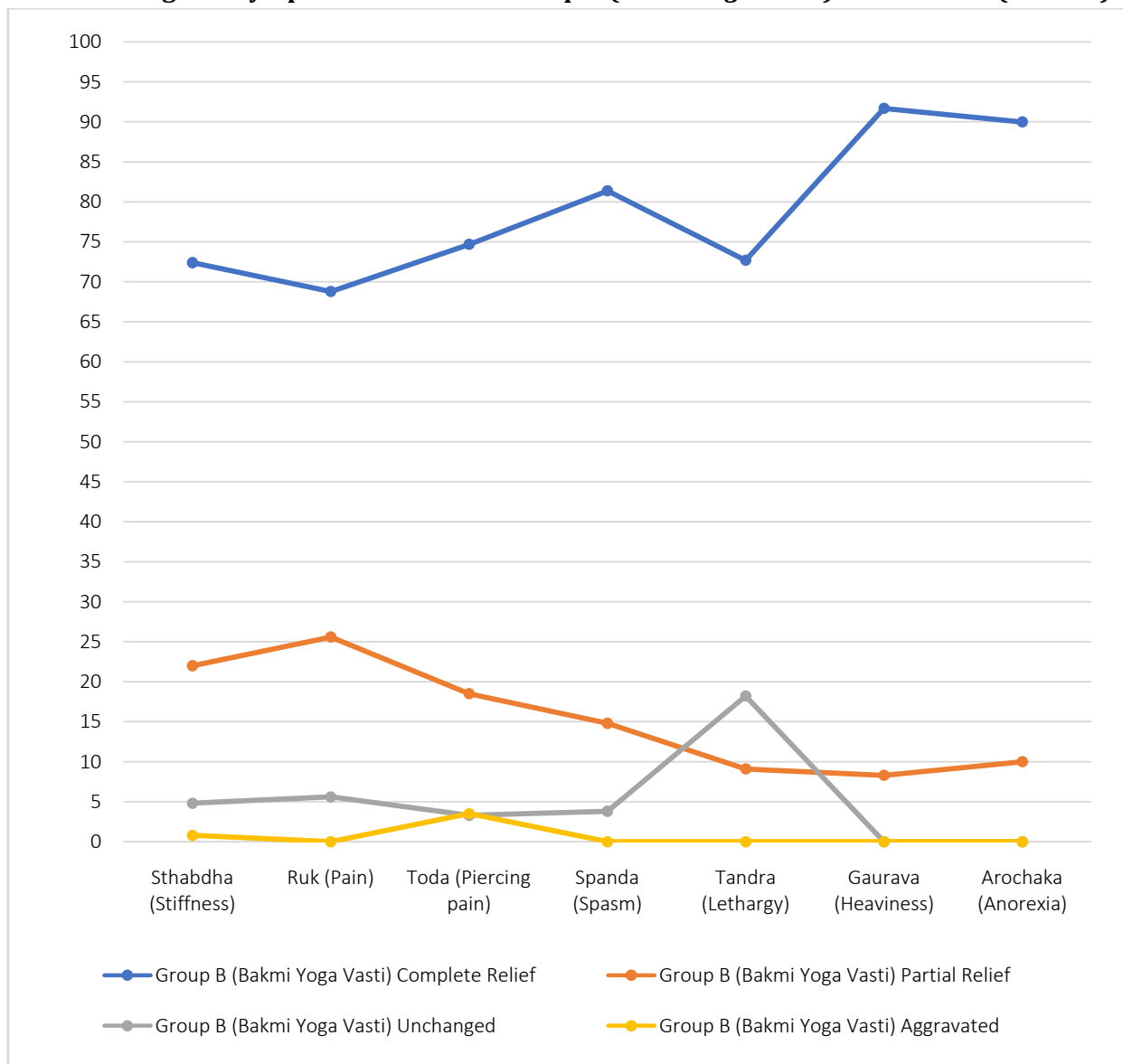


Table 3: Percentages of symptomatic relief in Group C (Combined therapy that is *Bakmi Parisheka* followed by *Bakmi Yoga Vasti*) in *Grudhrasi* (sciatica)

Clinical features	Group C (Combined Therapy- <i>Parisheka</i> followed by <i>Vasti</i>)			
	Complete Relief	Partial Relief	Unchanged	Aggravated
<i>Sthabdha</i> (Stiffness)	87	12.3	0.7	-
<i>Ruk</i> (Pain)	79.3	18.6	2.1	-
<i>Toda</i> (Piercing pain)	84.7	8.4	6.2	0.7
<i>Spanda</i> (Spasm)	80.4	11.4	7.4	0.8
<i>Tandra</i> (Lethargy)	77.8	-	22.2	-
<i>Gaurava</i> (Heaviness)	82.2	11.8	-	-
<i>Arochaka</i> (Anorexia)	93.3	6.7	-	-

Figure 3: Percentages of symptomatic relief in Group C (Combined therapy that is *Bakmi Parisheka* followed by *Bakmi Yoga Vasti*) in *Grudhrasi* (sciatica)

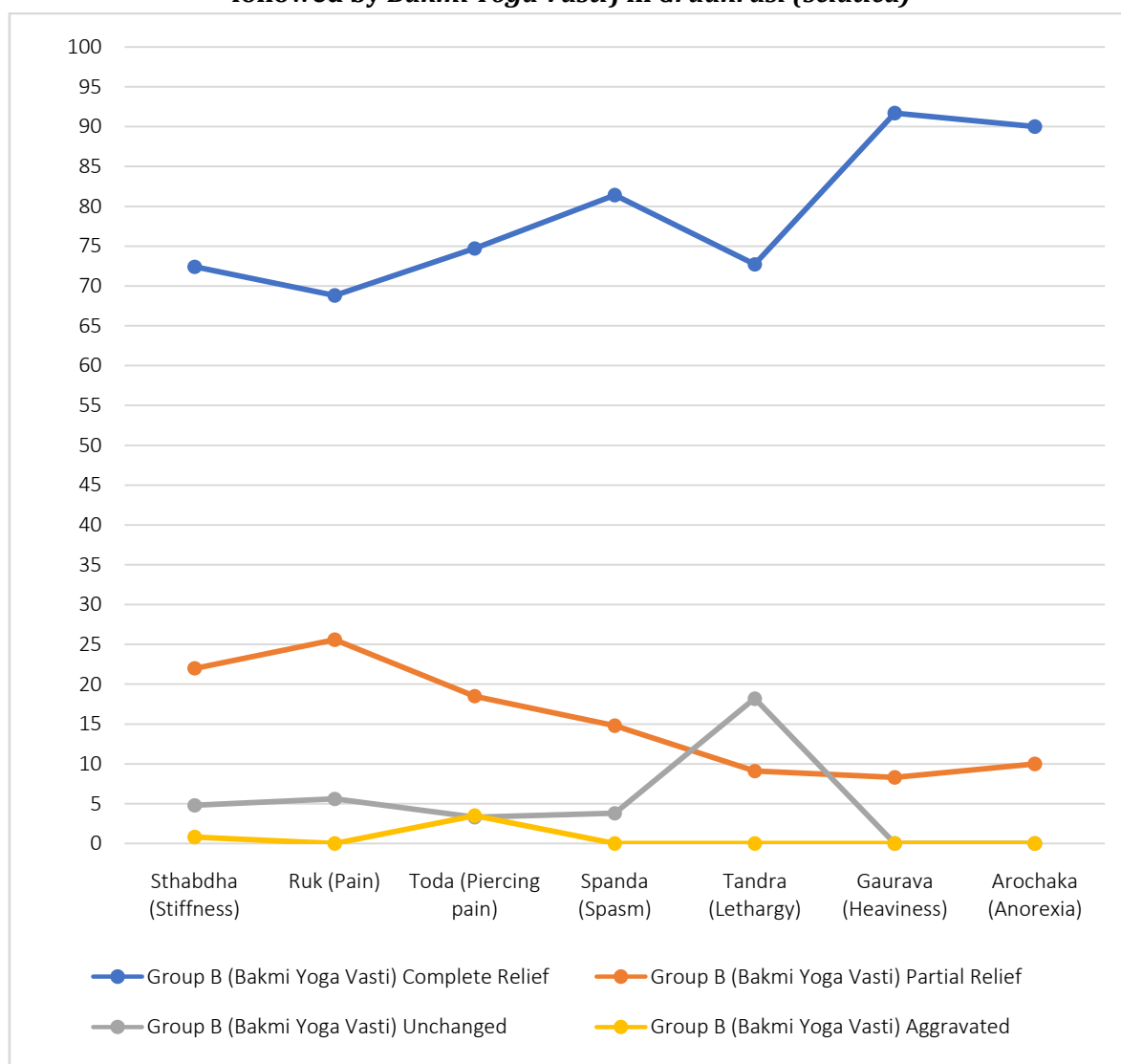


Table 4: Statistical results on Symptomatic relief in Group A (*Bakmi Parisheka*) in *Grudhrasi* (sciatica) (mean±SE)

Clinical features	Group A (<i>Bakmi Parisheka</i>)		
	BT	AT	P value
	Mean±SE	Mean±SE	
<i>Sthabdha</i> (Stiffness)	2.36±0.19	0.36±0.16	2.45776E-10*
<i>Ruk</i> (Pain)	2.36±0.18	0.6±0.22	2.4711E-08*
<i>Toda</i> (Piercing pain)	2.2±0.16	0.44±0.16	6.52591E-10*
<i>Spanda</i> (Spasm)	2.2±0.17	0.24±0.12	2.36601E-10*
<i>Tandra</i> (Lethargy)	2.28 ±0.18	0.64 ±0.21	1.98219E-06*
<i>Gaurava</i> (Heaviness)	2.28 ±0.19	0.2 ±0.14	4.43217E-11*
<i>Arochaka</i> (Anorexia)	2.28 ±0.17	0.36 ±0.18	8.41343E-11*

* p <0.05 significant , BT: Before treatment, AT: After treatment, SE: Standard Error

Figure 4: Statistical results on Symptomatic relief in Group A (*Bakmi Parisheka*) in *Grudhrasi* (sciatica) (mean±SE)

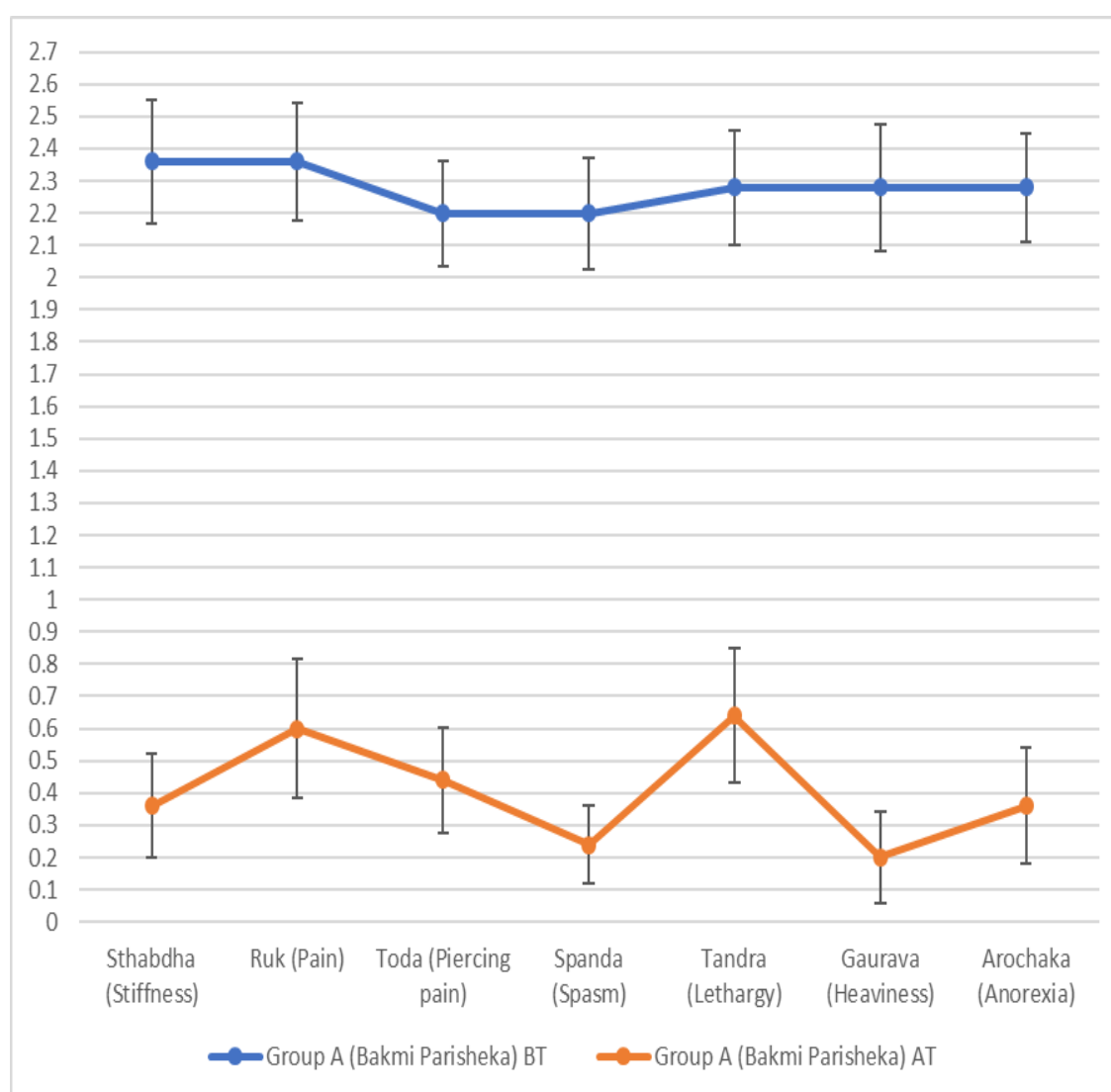


Table5: Statistical results on Symptomatic relief in Group B (*BakmiYoga Vasti*) in *Grudhrasi (sciatica)* (mean±SE)

Clinical features	Group B (<i>Bakmi Yoga Vasti</i>)		
	BT	AT	P value
	Mean±SE	Mean±SE	
<i>Sthabdha</i> (Stiffness)	2.4±0.17	0.52±0.19	2.33262E-08*
<i>Ruk</i> (Pain)	2.24±0.16	0.44±0.14	3.2409E-10*
<i>Toda</i> (Piercing pain)	2.24±0.16	0.32±0.13	2.17149E-10*
<i>Spanda</i> (Spasm)	2.32±0.17	0.4±0.17	5.08384E-10*
<i>Tandra</i> (Lethargy)	2.4 ±0.17	0.52 ±0.21	2.33262E-08*
<i>Gaurava</i> (Heaviness)	2.16 ±0.16	0.28 ±0.19	6.87276E-11*
<i>Arochaka</i> (Anorexia)	2.24 ±0.14	0.24 ±0.14	1.94297E-13*

* p <0.05 significant , BT: Before treatment, AT: After treatment, SE: Standard Error

Figure 5: Statistical results on Symptomatic relief in Group B (*BakmiYoga Vasti*) in *Grudhrasi (sciatica)* (mean±SE)

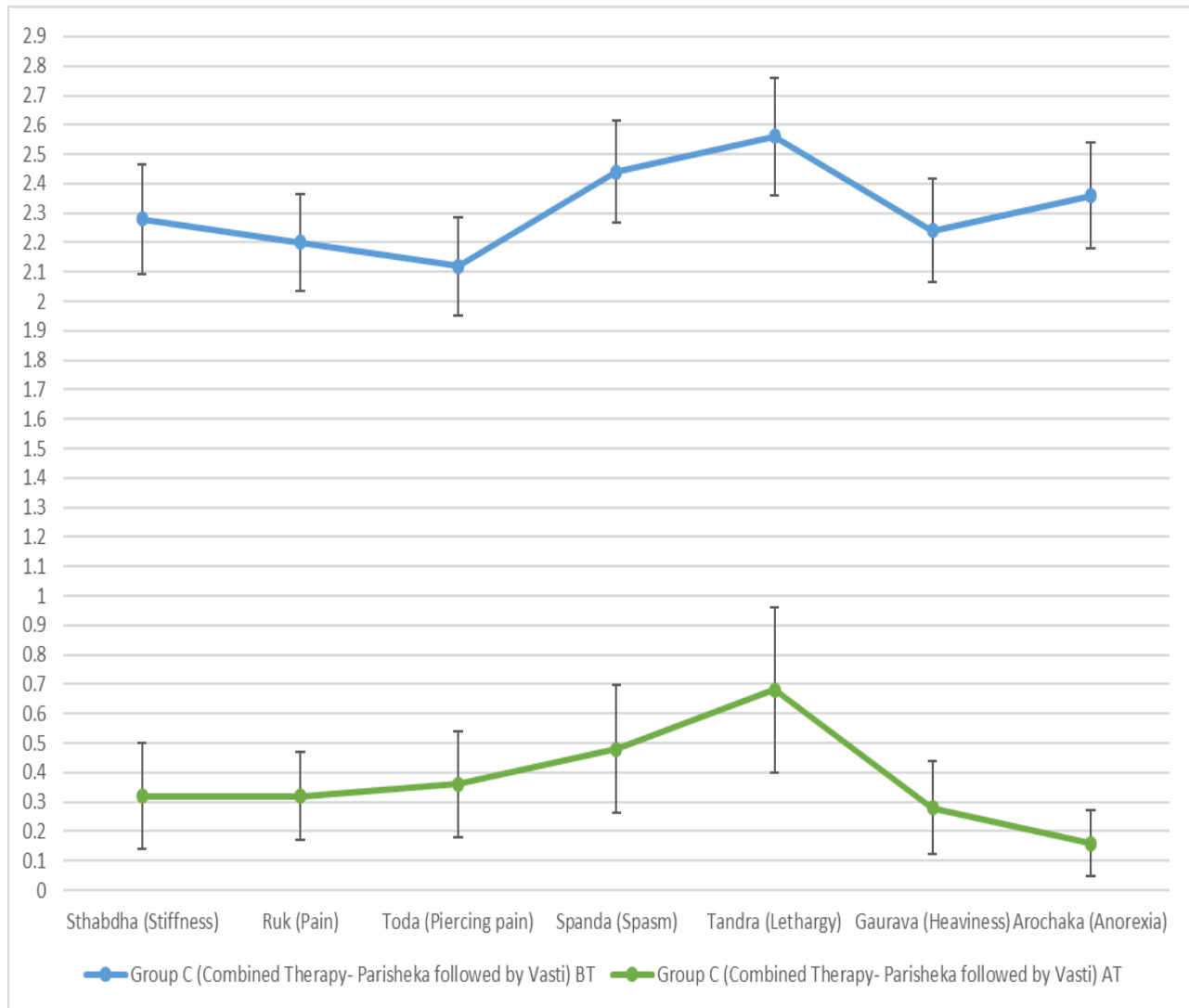
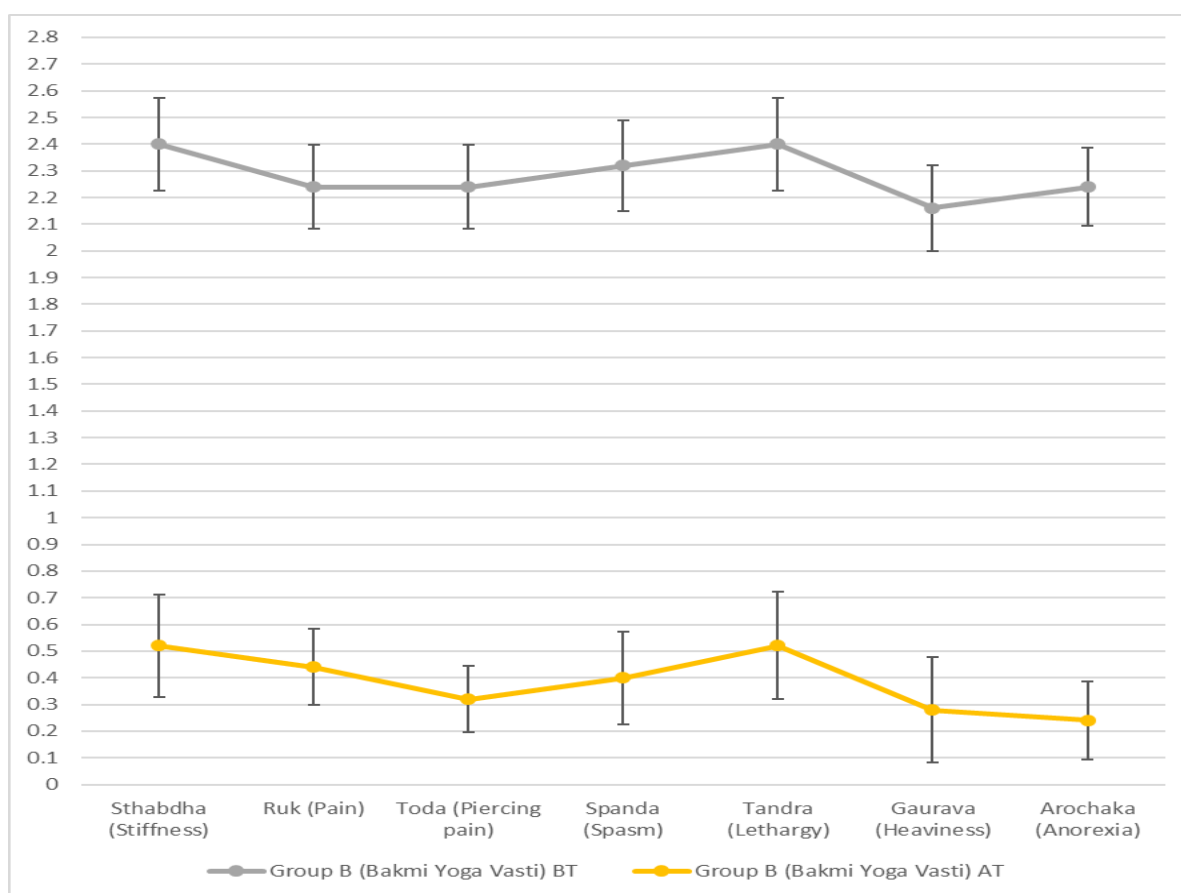


Table 6: Statistical results on Symptomatic relief Group C (Combined therapy that is *Bakmi Parisheka* followed by *Bakmi YogaVasti*) in *Grudhrasi (sciatica)* (mean±SE)

Clinical features	Group C (Combined therapy- <i>Parisheka</i> followed By <i>Vasti</i>)		
	BT	AT	P value
	Mean±SE	Mean±SE	
<i>Sthabdha</i> (Stiffness)	2.28±0.19	0.32±0.18	2.36601E-10*
<i>Ruk</i> (Pain)	2.2±0.16	0.32±0.15	1.88556E-10*
<i>Toda</i> (Piercing pain)	2.12±0.17	0.36±0.18	1.36116E-08*
<i>Spanda</i> (Spasm)	2.44±0.17	0.48±0.22	1.06031E-07*
<i>Tandra</i> (Lethargy)	2.56 ±0.20	0.68 ±0.28	9.15006E-08*
<i>Gaurava</i> (Heaviness)	2.24 ±0.17	0.28 ±0.16	1.13464E-11*
<i>Arochaka</i> (Anorexia)	2.36 ±0.18	0.16 ±0.11	1.91001E-12*

* p <0.05 significant , BT: Before treatment, AT: After treatment, SE: Standard Error

Figure 6: Statistical results on Symptomatic relief Group C (Combined therapy that is *Bakmi Parisheka* followed by *Bakmi YogaVasti*) in *Grudhrasi (sciatica)* (mean±SE)



DISCUSSION

Grudhrasi occurs due to vitiation of *Vata* or *Vata* and *Kapha Dosha*. The patients had complaints such as pain in buttocks which radiates to lumbar region, back, thigh, knee, calf region and down to foot, associated with stiffness, piercing pain and spasms that occur due to vitiation of *Vata Dosha*. They also had the symptoms such as heaviness and anorexia due to vitiation of *Kapha Dosha*.

Sweda Karma is advised to be used in treatment of diseases occurring by vitiation of *Vata* and *Kapha Dosha*.^[19] *Vasti Karma* is the best therapy for treating diseases occurred by vitiation of *Vata Dosha*.^[20] *Sushruta Samhita* describes *Sweda Karma* and *Vasti Karma* as therapeutic measures which should be applied in treatment of *Vata Roga* including *Grudhrasi*.^[6] Therefore, conduction of *Sweda Karma* in the form of *Parisheka Sweda* with

Bakmi and *Vasti Karma* (*Bakmi Vasti*) are beneficial for diseases occurring due to vitiation of *Vata Dosha*, including *Grudhrasi* (Sciatica).

Bakmi (*Nauclea orientalis*) pacifies vitiated *Kapha Dosha* as it possesses *Laghu Guna, Ruksha Guna, Katu Rasa, Tikta Rasa, Kashaya Rasa* and *Katu Vipaka*.^[11] It also has the properties of *Tridosha Shamaka* and *Vedanasthapana* (anodynes). Therefore, *Bakmi* (*Nauclea orientalis*) is beneficial in managing *Grudhrasi* (sciatica) as it occurs by vitiation of *Vata Dosha* alone or in combination of *Vata* and *Kapha Dosha*

CONCLUSION

It is concluded that *Parisheka Sweda* and *Vasti Karma* performed using *Nauclea orientalis* (*Bakmi*) is effective in the treatment of *Grudhrasi* (Sciatica).

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