



Research Article

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A CLINICAL STUDY TO EVALUATE THE ROLE OF AYURVEDIC MANAGEMENT FOR IMPROVING PAIN AND GAIT DISTURBANCE IN GRIDHRASI (SCIATICA) PATIENTS

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ABSTRACT

The study was conducted in 30 clinically diagnosed patients of Gridhrasi Roga (Sciatica) with an objective of clinical evaluation of a capsule; Parijat Patra Ghana and Kati Basti for the improvement in Pain and Gait disturbance of Gridhrasi Roga (Sciatica) patients. These patients were divided into three groups of 10 patients each. Patients of group A administered capsule Parijat Patra Ghana 500 mg BD with lukewarm water for 1 month, patients of group B were administered Kati Basti with Dashmoola Taila for 21 days and patients of group C were administered capsule Parijat Patra Ghana 500 mg BD with lukewarm water for 1 month and Kati Basti with Dashmoola Taila for 21 days, simultaneously. It was observed that the patients of Gridhrasi Roga (Sciatica) of group C had shown maximum percentage of improvement in pain and Gait disturbance, whereas it was moderate in patients of group B and patients of group A had shown mild improvement. No side effects were reported, in any of the patients in all the three groups, during the trial period.

Keywords: Gridhrasi Roga, Sciatica, Kati Basti, Herbal Preparation, Pain, Gait Disturbance

INTRODUCTION

Human beings desire of having good living with healthy life. For this purpose they have been very keen and conscious in maintaining a disease free society. In ancient time they followed nature's rule and lived freely without any stress in their life. But now-a-days people are busy in their routine works and unaware to maintain their health. Consequently, they are being susceptible to various kinds of life style disorders. Gridhrasi Roga (Sciatica) is one of them. The low back pain is common problem seen in persons, commonly, in modern era. Out of which 40 % persons have radicular pain and this comes under the umbrella of Sciatica-Lumbago-Syndrome. Such presentation was, also common in olden period and ancient science of life named it as Gridhrasi Roga. It is considered as Shoola Pradhan Vaat Vyadhi. Many researches were conducted on this disease, but still the complete cure of this is mirage. Gridhrasi indicates the typical gait that resembles of a bird "Gridhra" i.e. vulture, which is often seen in patients of Gridhrasi Roga. The cardinal clinical features of Gridhrasi Roga are Ruka (Pain) - Toda (Pricking sensation) - Stambha (Stiffness) - Muhurspandan in the Sphika - Kati - Uru - Janu - Jangha - Pada in order¹, Sakthikshepan - Nigrah² i.e. restricted lifting of lower limb. In Kaphanubandh Tandra, Arochak and Gaurava³ are also present. The clinical features seen in Gridhrasi Roga can be well correlated with Sciatica of modern medicine. Sciatica is very painful condition, in which pain begins in lumbar region and radiate along the postero-lateral aspect of thigh and leg⁴. Hence movement of affected lower limb is restricted and patient is not able to walk properly. Since, medical science recognizes the gravity of this problem, therefore a

medicament which relieves the pain, improves the functional ability, restores from functional disability and controls the condition with cost effectiveness, is the need. This need should be systematically evaluated for efficacy and safety. Sequential administration of the Snehan, Swedan, Basti, Siravedh and Agnikarma are lines of treatment of Gridhrasi as expounded in the Ayurvedic literature. Apart from these procedures, the line of treatment that can be given at O.P.D. level, very easy to administer and be very effective, is yet to be established. Many herbs for the management of Gridhrasi Roga are described in Ayurvedic literature and their therapeutic effect is yet to be explored. On the quest of such an effective, if possible, radical management of Gridhrasi Roga, we came across some very effective drugs, which have been individually proven successful such as Parijat Patra and Kati Basti with Dashmoola Taila. These drugs having very effective properties in Vatavyadhi and given good result in various researches on clinical trials. For a better and stable result, a combination of both the drugs was selected for trial.

Aims and Objectives

Present research work has been undertaken with following objectives-

- Conceptual studies on the Gridhrasi Roga with special reference to sciatica.
- To evaluate the role of herbal preparation and Kati Basti for the improvement in pain and gait disturbance of Gridhrasi Roga (Sciatica) patients.

- To compare the relative role of herbal preparation and Kati Basti for the improvement in pain and gait disturbance of Gridhrasi Roga (Sciatica) patients.
- To assess the combined role of herbal preparation and Kati Basti for the improvement in pain and gait disturbance of Gridhrasi Roga (Sciatica) patients.

MATERIALS AND METHODS

Selection of cases

The study was conducted on 30 clinically, pathologically and radiologically diagnosed patients of Gridhrasi Roga (Sciatica). The selection of patients was made from O.P.D./I.P.D. wing of P.G Department of Kayachikitsa, N.I.A., Jaipur, Rajasthan, India F.1(4)/ACA/2011/6271.

Inclusion Criteria's

Apparently normal individuals in the age group of 15-75 years of either sex suffering from Gridhrasi Roga.

- Vataj and Vata-Kaphaj both types of Gridhrasi Roga
- Sciatica (Gridhrasi Roga) due to disc prolapsed (L4-5 or L5-S1)
- Sciatica (Gridhrasi Roga) due to Ankylosing Spondylitis
- Sciatica (Gridhrasi Roga) due to Spinal Stenosis
- Sciatica (Gridhrasi Roga) due to Spondylolisthesis

Exclusion Criteria's

- Gridhrasi Roga more than 10 years old.
- T.B. Spine, Tumors of Spinal Cord, Malignancy of Pelvis.
- Diabetic Neuropathy, Cauda-equina Syndrome.

Trial Drugs

The herbal preparation and Dashmoola Taila were selected as trial drugs, for evaluating their role in the management of pain and gait disturbance of a series of patients of Gridhrasi Roga.

Herbal Preparation (Chakradatta, Vatvyadhi 22/97)⁵

Table 1: Ingredients of Cap. Parijat Patra Ghana

Drug	Botanical Name	Part Used
Parijat	<i>Nyctanthes arbor-tristis</i>	Leaf

Method of Preparation

Ghana Satva was made from the decoction of the leaves of the Parijat. Ghan Satva was dried and filled in the capsules in the dose of 250 mg in each capsule.

Dose: 2 capsules two times in a day, with lukewarm water, for 30 days.

Dashmoola Taila

Table 2: Ingredients of Dashmoola taila

Drugs	Botanical Name	Parts Used
Bilva	<i>Aegle mormelos</i>	Moola (Root)
Syonak	<i>Oroxylum indicum</i>	-do-
Patla	<i>Stereospermum suaveolens</i>	-do-
Agnimanth	<i>Premna mucronata</i>	-do-
Gambhari	<i>Gmelina arborea</i>	-do-
Salparni	<i>Desmodium gangeticum</i>	-do-
Prisniparni	<i>Uraria picta</i>	-do-
Brihti	<i>Solanum indicum</i>	-do-
Kantkari	<i>Solanum surattense</i>	-do-
Gokshura	<i>Tribulus terrestris</i>	-do-
Tila Taila	<i>Sesamum indicum</i>	Seed's Oil ⁶

Method of Preparation

All the components of Dashmoola Taila, except Tila Taila were taken to form Kvath and Kalka. This Kalka and Kwath was mixed with Tila Taila and boiled continuously till the sign of Samyak Pak appeared.

Method of Administration of Kati Basti

A boundary was made, with flour paste of Urada (*Phaseolus mungo* Linn.) in the lumbar region centering the site of pain and then lukewarm Dashmoola Taila was poured and retained there for approx. 45 minutes daily for 21 days. The oil was changed frequently so as to maintain the temperature of the oil to a particular level. The oil for the Kati Basti was exchanged on every 5th day.

Administration of Drugs

The 30 patients of Gridhrasi Roga were registered and divided randomly into following three groups. Each group has 10 patients.

Group A

10 registered patients of Gridhrasi Roga were administered with herbal preparation in a dose of 500 mg two times in a day with lukewarm water for a period of 30 days.

Group B

10 registered patients of Gridhrasi Roga were administered with Kati Basti (Dashmoola Taila) for a period of 21 days.

Group C

10 registered patients of Gridhrasi Roga were administered with herbal preparation (capsules) and Kati Basti (Dashmoola Taila) simultaneously in the manner as discussed above.

Duration of Clinical Trial and Follow-up Study

Duration of clinical trial was 30 days. All patients were followed up once in a week regularly.

Criteria's of Assessment

During trial and follow up study the patients were assessed on following parameters:-

Subjective Improvement

All the patients registered for present trial were looked for any changes in their growing feeling of well being, if any, produced after the therapy.

Objective Improvement

Following features were looked into before, during and after completion of the trial:-

Clinical Assessment

Clinical Manifestations like pain and gait disturbances were assessed before treatment and after treatment on 7th day, 14th day, 21st day and 30th day respectively.

For the assessment of above mentioned Clinical manifestations of the Gridhrasi Roga (Sciatica) the following symptom rating scale, developed by Prof. A.K. Sharma *et al.* was used:

Table 3: Grading for the assessment of gravity of symptoms

S. No.	Grading of Symptoms		
1.	Absent	0	00 %
2.	Mild	+	25 %
3.	Moderate	++	50 %
4.	Severe	+++	75 %
5.	Agonising	++++	100 %

Table 4: Grading for the assessment of improvement in the symptoms

S. No.	Grading of Symptoms		
1.	No Relief	++++	00 %
2.	Mild Relief	+++	25 %
3.	Moderate Relief	++	50 %
4.	Significant Relief	+	75 %
5.	Excellent Relief	0	100 %

Criteria's for Diagnosis

Diagnosis of Gridhrasi Roga (Sciatica) was done on the basis of following factors:

Clinical Features available in Ayurvedic and Modern Texts. With the help of following investigations-

- Hb %, T.L.C., D.L.C., E.S.R.

- R. A. Factor
- X-ray L-S spine (AP. and Lateral view)
- C. T. Scan (optional)
- M. R. I. (optional)

All the investigations were performed in all the patients before starting clinical trial. The investigations were repeated after the course of therapy wherever needed. Above mentioned criteria of diagnosis were helpful in making differential diagnosis and confirmation of diagnosis Gridhrasi Roga (Sciatica).

Statistical Methods Used in the Study

Various observations were made and results obtained were computed statistically to find out the significance of the values obtained and various conclusions were drawn accordingly. 'p' Value was calculated with the help of standard of charts on the basis of 't' value.

Table 5: Significance

P > 0.05	Non significant (N.S.)
P < 0.05	Significant (S.)
P < 0.01	More Significant (Mo.S.)
P < 0.001	Highly Significant (H.S.) ⁷

OBSERVATIONS AND RESULTS

The clinical study carried out in the present series of patients have revealed that maximum incidences were found in between 51-60 years of age, female sex, hindu religion, household job workers, married, urban area, jangal desha, middle class, vegetarian dietary habit, illiterate and menopausal female. Majority of patients were having madhyam kosta, sama agni, samyak nidra and madhyam sharira. Maximum number of patients was having vata-kapha type of sharirika prakriti, rajsik type of mansik prakriti, prakritisamsamvaya type of vikriti, madhyam sara-samhanan and pramana, pravara stmya and madhyam satva, ahara shakti-vyayama shakti and vaya. Maximum number of patients was of vataj type of Gridhrasi Roga, having bilateral involvement of limbs, of < 1 year chronicity, of Sub-acute onset of disease, having slow progress of disease and shown marked improvement in the disease. Pain and gait disturbance were found in all the patients.

Subjective Improvement

After the completion of trial there was a marked improvement in the feeling of well being in all the three groups but the incidence of improvement was higher in Group C, moderate level of improvement was observed in Group B and the patients of Group A have shown mild level of improvement.

Clinical Improvement

Table 6: The Effect of Therapy according to recovery in clinical manifestations in 10 Patients of Group A Treated with Capsules Parijat Patra Ghana

Signs and Symptoms	n	Mean Scores		Difference	% Relief	S.D ±	S.E ±	't'	p	Result
		B.T.	A.T.							
Pain	10	3	2.4	0.6	20	0.69	0.22	2.71	< 0.05	S
Gait Disturbances	10	2.71	2.02	0.69	25.46	0.70	0.22	3.10	< 0.05	S

B.T. – Before Treatment, A.T. – After Treatment

Table 7: The Effect of therapy according to recovery in clinical manifestations in 10 patients of Group B treated with Kati Basti

Signs and Symptoms	n	Mean Scores		Difference	% Relief	S.D ±	S.E ±	't'	p	Result
		B.T.	A.T.							
Pain	10	3	0.6	2.4	80	0.69	0.22	10.85	< 0.001	HS
Gait Disturbance	10	1.6	0.2	1.4	87.50	0.51	0.16	8.57	< 0.001	HS

B.T. – Before Treatment, A.T. – After Treatment

Table 8: The Effect of Therapy according to recovery in clinical manifestations in 10 patients of Group C treated with Capsules Parijat Patra Ghana and Kati Basti

Sign and Symptoms	n	Mean Score		Difference	% Relief	S.D ±	S.E ±	't'	p	Result
		B.T.	A.T.							
Pain	10	3	0.5	2.5	83.33	0.52	0.16	15	< 0.001	HS
Gait Disturbances	10	2.2	0.2	2	90.90	0.47	0.14	13.41	< 0.001	HS

B.T. – Before Treatment, A.T. – After Treatment

DISCUSSION

The highest incidence of Gridhrasi Roga (Sciatica) was seen in between 51-60 years of age, in which 11 cases (36.66 %); followed by the 31-40 years and 41-50 years 6 cases (20 %) in each group. This can be supported by the fact that middle aged subjects (30-60 years of age) are more exposed to strong biochemical force and heavy work in comparison to others, which may also create this condition. Also the degenerative process starts after the age of 30 years which results into different types of degenerative changes in the vertebrae of Lumbo-sacral region causing Gridhrasi Roga (Sciatica). This (51-60 years) is Vata Prakopaka Kala and according to modern science, there is progressive decrease in degree of hydration of the inter-vertebral disc with age that leads to the cycle of degeneration resulting in disc problems and causing Gridhrasi Roga (Sciatica). Hence, prevalence of sciatica is high in middle age group of people which is supported by the findings of the present study. In present study, maximum number of patients were female i.e. 60 % followed by male (40 %). Highest incidence was observed in females because the degenerative process of bone is very high in menopausal women and it starts after the age of 30 years. Male are at hard physical jobs and in particular frequent lifting of heavy weight and postural stress are known to increase the risk of sciatica. In the present series of 30 registered cases of Gridhrasi Roga (Sciatica) the affliction of the disease was found more in patients having household and labor job i.e. 15 (50 %) and 10 (33.33 %) subjects, respectively. The high prevalence of Gridhrasi Roga (Sciatica) in housewives and labors seems to be due to frequent involvement in wrong postures and heavy physical work, respectively. The incidence of Gridhrasi Roga (Sciatica) was highest in the patients who belonged to Urban area i.e. 22 (73.33 %) while those who were from rural area were 8 (26.67 %). This is because of fast, hectic and stressful life styles of the people who belonged to urban area. The majority of

cases registered for the current trial, belonged to middle and lower classes, which includes 15 cases (50 %) in each group. This data reflects that, physical strain full activities are found in the people who are from middle and poor classes. Maximum number of patients i.e. 66.66 % was vegetarians while remaining 33.33 % patients were taking mixed diet. This is because of most patient were Hindus and Hindus are vegetarian in this area. The majority of cases registered for the current trial were, either uneducated or primary level educated i.e. 50 % and 30 %, respectively. This data reflects that, these subjects do more physical strainful activities in comparison to others. Most of the female patients i.e. 61.11 % were having menopausal history while 33.33 % patients were having regular menstrual history. Only 01 patient reported for irregular menstruation. This reflects that after the menopause, chances of occurrence of the disease increases. In the present study maximum i.e. 80 % patients were found to have Madhyam Sharira and patients of Sthoola and Krisha Sharira were 10 % each. So, it is evident that, the prevalence of Gridhrasi Roga (Sciatica) is high in subjects having Madhyam Sharira. This feature may be, because subjects having Madhyam Sharira have capacity to do more physical work than others. All the patients of this study were having Dwandaja Prakriti. 80 % patients were having Vata-Kapha Prakriti, 13.33 % patients were having Vata-Pitta Prakriti and 6.66 % of patients were having Pitta-Kapha Prakriti. This study suggests that Vata Dosha plays a major role in the manifestation of the Gridhrasi Roga (Sciatica). In this study, 83.33 % patients were having Rajsik prakriti and 16.66 % patients were having Tamsik prakriti. This data support the Vataj and Vat-kaphaj types of the disease and predominance of Vat Dosha in the disease, also. In this trial, all the patients were having Madhyam Sara. It may be because, patients of Pravara Sara, mostly free of disease and patients of Hina Sara, mostly have so many diseases with severe complications and these type of subjects have been excluded from the study. In the present

study, maximum number of patients i.e. 76.66 % were of Madhyam Vaya followed by Vriddha Vaya i.e. 16.66 % and only 6.66 % patients were of Vivardhman Vaya. This feature may be, because Madhyam Vaya is the period of maximum physical activity and in Vriddha Vaya there is physiological vitiation of Vata Dosha and the rate of process of degeneration is very high. In the trial, maximum number of patients i.e. 86.66 % were of Vatik type followed by Vat-Kaphaj type i.e. 13.33 %. It may be, because the Gridhrasi Roga is Vaat Nanatmaj Vyadhi and sometimes Anubandh of Kapha Dosha may occur. Maximum number of the patients i.e. 53.33 % were having less than 1 year of chronicity, 16.66 % were having above 2 years of chronicity and 30 % were having 1-2 years of chronicity. This data reflects that, maximum number of subjects has chronicity less than 1 year followed by having 1-2 years, it may be because first the patient goes to allopathic side when they haven't satisfactory response, then comes to Ayurvedic treatment. Maximum number of patients i.e. 76.66 % were having sub-acute onset of disease followed by chronic onset i.e. 23.33 % and no patient was having acute onset. This type of feature may be, because the maximum patients take analgesics by self medication due to which the presentation of the disease becomes either sub-acute or chronic. In the trial, maximum number of patients i.e. 76.66 % were having slow progress of disease followed by rapid progress i.e. 23.33 % and no patient had shown stationary form of the disease. This type of feature may be due to degeneration of vertebrae and inter-vertebral discs occurs slowly and sometimes sudden trauma on the lumbo-sacral region or sudden heavy weight lifting cause rapid onset. Pain and gait disturbance were found positive in all the patients i.e. 100 %. Data regarding X-ray findings suggests involvement of lumbo-sacral spine in producing the symptoms of Sciatica syndrome. In this trial; all the patients were having –ve R.A. factor. This data reveals that no patient had history of Rheumatoid arthritis involvement. Although, we recommended C.T. Scan or M.R.I. to some of the patients of Gridhrasi Roga (Sciatica), but none of the patients got it done, no observations are reported on these parameters. In patients of Group A no patient had obtained marked improvement while in patients of Group B 70 % and in patients of Group C 90 % patients had obtained marked improvement. In Group A no patient had witnessed moderate improvement and in patients of Group B 30 % patients had witnessed moderate improvement while in patients of Group C 10 % patients had witnessed Moderate Improvement. In patients of Group A 100 % patients had reported mild improvement, while no patient was reported to get Mild improvement in patients of Groups B and C. None of the patients was found unchanged and fully cured in all the three groups.

Probable Mode of Action of Parijat

Parijat Patra possess, Guna-Laghu, Ruksha, Rasa –Tikt, Vipaka – Katu, Veerya – Ushna⁸. With the help of its Gunas, Rasa, Vipak and Veerya it pacifies Kapha dosha while with the help of its Veerya it pacifies Vata Dosha. So, on the basis of its pharmacological properties, it can

be concluded that, it possesses Kapha-Vatahar action. In Ayurvedic classics, also it is mentioned as Kapha-Vatahara dravya. Since, the Gridhrasi Roga is of two types viz. Vataj and Vata-kaphaj, means in all its forms either Vata or Vata and Kapha both Doshas will be vitiated. The selected drug has Kaph-Vatahar action; therefore it should be effective in the management of all forms of Gridhrasi Roga. Further, in Chakradatta, decoction of its leaves has been indicated to cure all forms of Gridhrasi Roga (Chakra. Vaatavyadhi 22/97). In the view of knowledge of modern science, the various chemicals like, tannins, glycosides, methyl salicylate and alkaloids etc. present in leaves of Parijat possess Anti-inflammatory and Analgesic action. Therefore, by the action of these constituents it breaks the basic pathology i.e. inflammation of disease Sciatica, consequently helps in relieving its clinical features.

Probable Modes of action of Dashmoola Taila

Among the 10 dravyas of Dashmoola 5 dravyas (50 %) have Vata-Kapha shamak property, 4 dravyas (40 %) have Tridosaghna property and 1 dravya (10 %) has Vata-Pitta shamak property. It means, in Dashmoola all dravyas (100 %) have Vata shamak property and 9 dravyas (90 %) have Vata-Kapha shamak property. Therefore, it will be a potent Vata shamak, Vata-Kaph shamak and Tridosaghna Compound. In Ayurvedic Texts; also mentioned; “Dashmoolam Tridoshaghnam Kaphmarut Nashnam”⁹. Since, the Gridhrasi Roga is of two type's viz. Vataj and Vat-kaphaj¹⁰ and Dashmoola has Kaph-Vatahar action, therefore it should be effective in all forms of Gridhrasi Roga. In the view of knowledge of modern science, the various chemicals present in ghatk dravyas of Dashmoola possess anti-inflammatory and Analgesic action. Therefore, by the action of these constituents it breaks the basic pathology i.e. inflammation of disease Sciatica, consequently helps in relieving its clinical features. Tila Taila possesses Rasa- Madhura Kashaya, Tikta, Guna- Guru, Snigdha, Veerya – Ushna Vipak- Madhura Doshaghnta-Vata Shamak¹¹. Therefore, it should be effective in Gridhrasi Roga.

Probable Modes of action of Kati Basti

Kati Basti is a procedure in which both the properties of snehana and swedana are incorporated. The reason behind selection of Kati Basti is that it comes under direct contact with painful region. In this disease, Samprapti is at Kati region and is mostly associated with structural changes of lumbar vertebral column. There is derangement in Lumbo-sacral joints and vertebrae, degeneration of inter-vertebral disc and lubrication function of Shleshaka Kapha is affected, which results in compression, irritation or inflammation of Gridhrasi Nadi i.e. Sciatic nerve, resulting in severe pain. Therefore, local Snehana and Swedana is very effective and gives quick results because they act at the site of Samprapti. As Vata Dosha is Sheeta, Ruksha in nature and Sweda being Ushna and with prior Snehana, Snigdha in nature, alleviates Vata, Swedana increases sweat and brings out Maladravyas along with sweat. Thus it decreases kleda in the body resulting in the

reduction of Gaurava (Heaviness) and Stambha (Stiffness) which are common symptoms of Vatavyadhies. After Swedana Romancha (Sizzling sensation), Toda (Pricking pain), Vedana (Pain), Shotha (Oedema), Angagraha (Stiffness in organs), Ayam (Feeling of expansion) vanishes and the organs become soft and elastic (Ch.chi.28/80). Acharya Charak has pointed that when even dry wood can be made to become soft and flexible with Snehana and Swedana then why not the living organs? (Ch.chi.28/79 Ch.su.14/5); Gridhrasi Roga is clearly mentioned in the list of Swedanarha vyadhies and also the cardinal and associated features of Gridhrasi Roga like shool (Pain), Stambha (Stiffness), Sankocha (Shrinking type of feeling), supti (Numbness) have also been mentioned. Gridhrasi Roga is a Vatavyadhi and sometimes Kaphanubandhi. Swedana is also indicated in Vatavyadhies as well as Vatakaphaja Vyadhies. (Ch.su. 14/3). Gridhrasi Roga is a Shoolapradhana Vatavyadhi and Shulavyuparama (destruction of pain) is the sign of proper Swedana. (Ch.su.14/3). In Kati Basti the warm oil is retained for a long time (Approx. 45 minutes) at the site of pathology the resultant effect of the procedure produced according to the physiology stated below.

Thermal effect of warm oil

These are effects arising from an increase in blood temperature stimulation of thermo detector in the skin and local temperature increase. Heat has been defined as increase in the velocity of particles. In general this has catalytic effect on all chemical process. Thus application of heat results in an increase in the local metabolism of the cell and increased transport through the cell membranes. For every increase of one degree Celsius within the physiological limits, the metabolic activity increases by about 10 %. The local metabolic increase leads to an increase in the oxygen partial pressure (po₂), the carbon di-oxide partial pressure (pco₂) and acidity pH. These three factor po₂, pco₂ and pH determine the local perfusion by their effect on pre-capillary Sphincter and meta arterioles. The pre-capillary sphincter and the meta-arterioles in the tissue control the local homeostasis by alternate contractions and relaxations. This alternate activity controls the perfusion of the capillary bed. At the same time, the contraction forces the blood in the capillaries forward. This process of auto-regulation is referred to as "vasomotion" which is principally determined by the oxygen concentration. An increase in

the temperature of connective tissue, in particular the collagenous tissue such as skin, muscle, tendon, ligament or articular capsule will be accompanied by an increase in the elasticity. Heat can improve the elasticity of fibrous tissue by a factor of 2 to 10. At the same time, the viscosity of matrix decreases. Consequently connective tissue such as tendon tissue and ligament will also become more elastic.

CONCLUSION

Therefore, it can be concluded that, combined therapy in the form of administration of Capsule Parijat Patra Ghana and Kati Basti with Dashmoola Taila is safe and effective Ayurvedic treatment modality in the management of pain and gait disturbance in Gridhrasi Roga (Sciatica) patients.

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