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RESEARCH ARTICLE

“A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF DASHAMOOOLA NIRUHA BASTI WITH BHADRADARVADI GANA KASHAYA BASTI IN GRIDHRASI VIS-À-VIS SCIATICA”

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Abstract

Gridhrasi is defined as vata vyadhi characterised by radiating pain from lumbo-sacral region (spik-katipurva) through thigh, knee, calf and foot (uru, janu, jangha, pada). The disease Gridhrasi described in Ayurveda and Sciatica described in western medical textbooks have absolute similarity in their manifestation. Low back ache is one of the most common clinical symptoms experienced by substantial portion of the population. It can be conveniently concluded that these two represent the same disease. The estimated life time incidence of sciatica is around 13% -40% of total population. Annual incidence of an episode of sciatica ranges from 1%-5%. The high prevalence of sciatica varies considerably, ranging from 1.6% in general population to 40% in selected working population. Considering all these the present study was undertaken to evaluate the efficacy of dashamoola niruha basti with bhadradarvadi gana kashaya basti in gridhrasi.

Objectives: To compare the efficacy of dashamoola niruha basti followed by moolakadi thaila as anuvasana basti with bhadradarvadi gana kashaya basti followed by anuvasanabasti with prasarini thaila in the management of Gridhrasi.

Materials and Methods: Total 40 subjects with 20 in each group. The interventions were as follows, Group A Dashamoola niruha basti followed by moolakadithaila as anuvasana basti. Group B Niruha with bhadradarvadi gana kashaya basti followed by anuvasana basti with prasarini thaila (in yoga basti pattern) in the management of Gridhrasi. The data was collected on 0th day, after the intervention i.e. on 9th day and after the completion of follow-up period i.e. on 25th day.

Result: Group A and Group B showed equal statistical significance with assessment parameters like Ruk, Stambha, SLR test, Bragard's sign, Sciatica bothersome index scale value with the significance "P" value of 0.005. On comparison, between the groups there was non-significant results found. Hence, both the groups were effective in reducing the symptoms of Gridhrasi. The overall study revealed that the selected intervention has showed significant results in the management of Gridhrasi vis-à-vis Sciatica.

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Introduction:-

As per charaka samhitha, Gridhrasi is described as a shoola pradhana vatavyadhi and is mentioned under the umbrella of Vataja nanatmaja vyadhi^[1]. It is characterised by stiffness, pricking sensation and pain radiating from sphik pradesha to kati, prushtha, uru, janu Janga and pada in an order^[2]. The signs and symptoms of Sciatica closely resembles gridhrasi. Sciatica is defined as radiating pain along the course of sciatic nerve and is felt in the back, buttocks, posterior of the thighs, legs and foot. The sciatic pain is shooting type and radiates down to one or both legs usually below knee in dermatomal distribution, often associated with numbness, tingling sensation and possible local weakness. The nerve roots affected are L4, L5 and S1^[3].

In Ayurvedic classics, management of Gridhrasi includes basti karma, siravyadha and agni karma^[4]. Basti karma which is mentioned as ardhha chikitsa of vatajavyadhi^[5] is imperative in its management. Hence in the present study, niruha basti with dashamoola Kashaya^[6] followed by anuvasana basti with moolakadi thaila and niruha basti with bhadradarvadi gana kashaya^[7] followed by anuvasana basti with prasarini thaila was taken for comparative evaluation of the possible effect on Gridhrasi. The present study was comparative clinical study with pre and post-test design. The subjects fulfilling the diagnostic criteria of Gridhrasi was assigned into two groups viz., Group A (Dashamoola Niruha basti) and Group B (Bhadradarvadi gana Kashaya Basti).

Objective:-

To compare the efficacy of dashamoola niruha basti followed by moolakadi thaila as anuvasana basti with bhadradarvadi gana kashayabasti followed by anuvasanabasti with prasarini thaila (in yoga basti pattern) in the management of Gridhrasi vis-à-vis Sciatica.

Materials & Methods:-

Study design: A controlled clinical study with pre and post-test design. Total of 40 subjects, 20 individuals in each group. In the present study, assessment of overall effect of intervention was done based on reduction in the symptoms of Gridhrasi i.e., Ruk, Stambha and improvement in the SLR value and Bragard's sign, Sciatica bothersome index scale value.

The data was collected on 0th day, after the intervention i.e. on 9th day and after the completion of follow-up period i.e. on 25th day. The results were analysed statistically by using Descriptive statistics, t test- independent and paired samples, measure and Friedman test analysis using Service product for statistical solution (SPSS) for windows software.

Research Design:

Double arm open labelled comparative clinical trial with pre and post-test design.

Sample Source:

Subjects visiting Government Ayurveda Medical College & Hospital, Mysuru and Government Hitech Panchakarma Ayurveda Hospital, Mysuru and special medical camps who were fulfilling the diagnostic criteria were selected as study samples.

Simple Random Sampling was used to categorize subjects into two different groups.

Grouping:

Each group consists of 30 subjects.

Intervention:

Group 1:

1. Dashamoola Niruha Basti in Yoga Basti pattern (5 Anuvasana basti +3 Niruha basti)

a) Ingredients of Dashamoola Niruha Basti -

Makshika	-	90ml
Saindava lavana	-	6gms
moolakadi taila	-	140ml

Shatapuspa kalka	-	45gms
Dashamoola kwatha	-	200ml
Gomutra arka	-	80ml
Total quantity	-	560ml

b) For Anuvasanabasti : Moolakaditaila -140ml

Group B:

1. Bhadradarvadi gana kashaya Basti in Yoga Basti pattern (5 Anuvasana +3 Niruha)

a) Ingredients of bhadradarvadi gana Niruha Basti –

Makshika	-	90ml
Saindava lavana	-	6gms
Prasarini taila	-	140ml
Shatapuspa kalka	-	45gms
Bhadradarvadi gana kwatha-	200ml	
Gomutra arka	-	80ml
Total quantity	-	560ml

b) For Anuvasana basti : Prasarini taila -140ml

Duration of the study :

24 days

Inclusion Criteria

1. Subjects of all gender between the age group of 20-60 years with the signs and symptoms of Gridhrasi vis-à-vis Sciatica will be selected for the study.
2. Both freshly detected and treated cases of Gridhrasi vis-à-vis Sciatica (with the flush out period of seven days) will be taken for the study.

Exclusion criteria

1. Neoplastic conditions of lumbar spine.
2. Subjects suffering from Diabetes mellitus, uncontrolled Hypertension (150/100mmHg) and other systemic disorders which interfere with the intervention will be excluded.
3. Subjects who are unfit for administration of Basti karma.
4. Pregnant and lactating women.

Diagnostic Criteria

1. Subjects with following symptoms of Gridhrasi will be taken for the study as pain radiating from sphik, kati, prushta, uru, janu, jangha and pada.
2. SLR test –Positive
<20 degree - Severe
20-40 degree - Moderate
40-60 degree – Mild
Positive Bragard's sign.

Assessment Criteria**1. Straight leg raising test**

- <20 degree - Severe
20-40 degree - Moderate
40-60 degree – Mild

2. Bragard's sign – Positive/Negative**3. Sciatica bothersome index and sciatica frequency index. (Annexure I)****4. Ruk (Pain):**

Visual analog scale. (annexure II)

5. Stambha (Stiffness):

- i. No stiffness - ST0
- ii. Mild stiffness - ST1
- iii. Moderate stiffness - ST2

- iv. Severe stiffness - ST3

Assessment Schedule:

Pre-test assessment - 0th day: before intervention

Post assessment – 9th day: after completion of Basti karma

Follow-up assessment – 25th day: after vishramakala

Statistical Methods:-

The results were analysed statistically by using descriptive statistics, paired t test, ANOVA test using service product for statistical solution (SPSS) for windows.

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Results:-

All Lakshanaof Gridhrasi are due to Vata prakopa. Basti is the best Chikitsa upakrama for vitiated Vata dosha. The Basti chikitsa was adopted in the present study with drugs possessing Katu, Tikta, Kashaya, Madhura rasa, Ushna virya and Snigdha guna, with properties like Tridosahara, Kapha-vata Shamaka, Dipana, Pachana, Balya, Brimhana, Shothahara, Rasayana. The pharmacological actions of the drugs used in the study were having anti-inflammatory, analgesic, anti-oxidant properties, therefore helps in relieving the pain and inflammation of the sciatic nerve. So by Basti chikitsa and the properties of drugs, helped in relieving the Samprapti of Gridhrasi.

Effect On Ruk, Toda, Stambha:

The results obtained regarding the reduction in the parameter of Ruk showed highly significance with the “P” value of 0.001. Mean difference between the group was found to be 0.2 (Group A – 4.5; Group B – 4.3). Thus Group A showed better results than group B. The change in mean value was assessed in between the subjects showed P value .001 & mean VAS score F value 258.473. There was statistically non-significant difference in between the groups of P value 0.515 Hence both the groups showed equal results. Ruk, toda, stambh parameters shown significant result.

Effect On Slr Test And Bragard’s Sign:

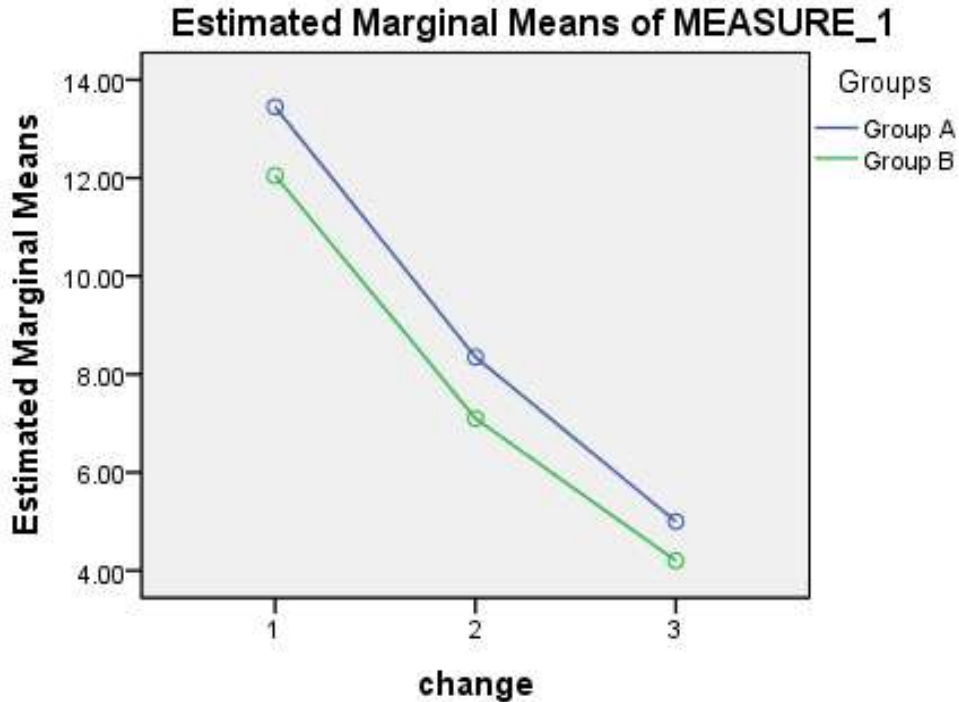
Restricted SLR test in most of the subjects is due to pain caused by sciatic nerve root compression. After intervention, pain was relieved and SLR test was improved. A significant increase was observed from pre-test to post test in mean value of SLR in both the Groups. All subjects presented with positive Bragard’s sign before intervention, negative after the completion of intervention in both the groups, 20 subjects showed Bragard’s sign negative negative Bragard’s sign.

Effect On Sciatica Bothersome Index Scale Value

There was significant increase in Sciatica bothersome index scale value in both the groups. There was statistically non-significant difference in between the groups.

SBI	Group A			Group B		
	BT	AT	FT	BT	AT	FT
Mean	13.4500	8.3500	5.0000	12.0500	7.1000	4.2000
Std. Deviation	3.36350	2.99605	2.90191	3.05175	3.35449	3.03662

Source	df	Mean Square	F	Sig.
Change	2	676.258	3111.741	.000
Change*Groups	2	.975	.449	.640
Error	76	2.169		



Results Based On Overall Assessment

Overall result in Group A revealed that 1(5.0%) subject got complete relief, 16(80.0%) subjects got marked improvement, 3(15.0%) individuals got moderate relief of symptoms of Gridhrasi. In Group B, 1(5.0%) subject got complete relief, 16(80.0%) individuals got marked improvement and 3(15.0%) individuals got moderate relief. Hence it can be inferred that statistically non-significant difference in between the groups of P value 1.00. Both the groups are having equal significance.

Discussion:-

Brihat Dashamoola Kwatha:

Dashamoola kashaya is having tridoshagna, vedanastapaka and shothagna properties. Moolakadi taila with atyugravanashana guna is indicated in vatavyadhi. It contains brihat panchamoola which is vata kaphahara in nature and laghu panchamoola which is vatapittahara. Hence it acts as tridoshahara. Most of the drugs present in the above yoga have katu, tikta rasa, ushna veerya, laghu guna and katu vipaka, dipaka, and pachaka, which are beneficial in reducing the kapha (causes vilayana) and vata dosha and does ama pachana.

Bhadradarvadi gana Kwatha:

Bhadradarvadi gana is having vatahara property. Ingredients present in this Kashaya have both vata kapha and vatapittahara properties, hence acts as tridoshahara. It also has predominantly katu, kashaya, tikta rasa, laghu, tikshna guna, ushna virya, katu, Madhura vipaka, which have ama pachana, kapha vilayana and vata kapha prashamana karma.

Moolakadi taila

Taila due to its Snigdha quality destroys the Rukshata of Vata dosha and because of Guru and Ushna quality destroys Laghu and Shita guna of Vata dosha respectively. Moolakadi taila mainly possess Katu rasa, Tikshna guna and Ushna virya, it does Vata-kaphahara with actions such as Shulahara, Shothahara, Dipana and Pachana properties.

Prasarini taila

This formulation possess the quality of katu, tikta rasa, Snigdha guna and ushna veerya and acts as Vatahara and Brimhana, Vedanastapaka properties.

Probable Mode Of Action Of Basti Karma.

The probable mode of action of Nasya karma can be understood with its procedural effect.

Procedural effect:

Pakwashaya is the Mula sthana of Vata dosha, Basti acts on Pakwashaya alleviates the Vatadosha which is the main causative factor of Gridhrasi. Basti dravya enters Pakwashaya by its Virya spreads all over the body and removes the morbid Dosh. It has the properties like Sroto shodhana and Brimhana due to its combinations.

The procedure includes local massage and fomentation, which increases the blood circulation by vasodilation, which enhances the drug absorption. The function of large intestine is absorption, manufacture of certain vitamins, formation and expulsion of faeces. The nervous control of the gastro-intestinal system is mediated by enteric nervous system (ENS) and central nervous system (CNS). Rectum due to its vascularity and venous plexus provides a good absorption surface. Osmolarity of the secreted fluid will be increased by dissolving the drug and adjuvant. The increased osmolarity of the rectal fluids influences the absorption and promotes the effect of the drug, hence rectal route is more preferable. The amount of drugs get absorbed through the haemorrhoidal veins and bypass the portal circulation. In rectum the drugs cross cell membranes by passive diffusion, active transport. Vitamins needed for normal metabolism, vitamin B and K are synthesized by bacterial action and absorbed into the circulation. Basti chikitsa influence normal bacterial flora of colon and thereby synthesis of vitamin B 1, which has a role in regeneration of nerves. The Probable mode of action of Basti can be understood under following theories.

Gut Brain Theory:-

“The brain of the Gut”,. Enteric nervous system is connected to the central nervous system by more afferent fibers than efferent fibers. Gut brain (ENS) integrates sensor information from mucosal receptor and organizes an appropriate motor response.

Touch And Go Theory :

Basti act over the receptors of the ENS to stimulate the CNS causing the secretion of required hormones or other chemicals. Hence the effect of Basti may associated with “Touch and Go Theory” causing activation of ENS receptors

Conclusion:-

On the basis of concepts, analysis and clinical observations made in the study, the following conclusions were drawn. The intervention was found to be effective in both the groups. Disc bulge is due to degenerative changes which is indicative of Vata prakopa hence Basti is considered as best treatment. All the drugs chosen for the study were having Ushna virya and Kapha-vata Shamaka properties, helped in the management of Gridhrasi also the drugs were having anti-inflammatory and analgesic properties was useful in relieving the pain and inflammation of the nerve. In the present study, assessment of overall effect of intervention was done based on reduction in the symptoms of Gridhrasi and improvement in the SLR value and Bragard’s sign, also there was improvement in the Sciatica bothersome index scale. Group A and Group B showed equal statistical significance with assessment parameters like Ruk, Stambha, SLR test, Bragard’s sign, Sciatica bothersome index scale value with the significance “P” value of 0.005. On comparison, between the groups there was equal statistical significant results hence, both the groups were effective in reducing the symptoms of Gridhrasi. It can be concluded that, the combination of Dashamula Niruha basti and Bhadradarvadi gana kashaya basti both were equally effective in reducing the symptoms of Gridhrasi. The overall study revealed that the selected intervention has showed significant results in the management of Gridhrasi vis-à-vis Sciatica.

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