

## **EFFECT OF GANDHARVAHASTHADI KWATHA IN THE MANAGEMENT OF GRUDHRASI - A PROSPECTIVE OPEN CONTROLLED CLINICAL TRIAL**

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Received: 15-05-2012; Revised: 28-09-2012; Accepted: 08-10-2012

### **Abstract:**

Grudhrasi is a painful condition chiefly affecting the lower back area which radiates downwards to one leg or both the legs. Gandarvahasthadi Kwatha is a potent orally administrable pharmaceutical drug combination of Gandarahastha, Chiruvilwa, Hutaswa, Vishwam, Pathya, Punamava, Yavashaka, Bhumithalam, commonly used in the treatment of various vata vyadhi's. The main objective of the study was to assess the efficacy of Gandharvahasthadi Kwatha as a trial drug in the management of Grudhrasi. The sample size of the study was 100. Results of 100 patients with Grudhrasi in study group were analyzed. The results were statistically analyzed before & after treatment and follow up with help of student 't' test. In all the symptoms the paired 't' test had denoted that the treatment is highly significant ( $p < 0.001$ ), which implies that Gandharvahasthadi kwatha is effective in the treatment of Grudhrasi.

**Key words:** Grudhrasi; Gandharvahasthadi kwatha; Sciatica.

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### *Cite This Article*

Christy J Thundiparambil, Sunitha Poly, Pramod V Kulkarni, Ilanchezhian R, Roshy Joseph C.  
Effect of Gandharvahasthadi Kwatha in the management of Grudhrasi - A prospective open  
controlled clinical trial. *Ayurpharm Int J Ayur Alli Sci.* 2012;1(5):124-131.

## INTRODUCTION

Every man derives the happiness and benefit of his life through locomotion. But if the power of locomotion is affected he not only feels himself a miserable creature but also becomes a burden to his family and society. A normal daily life without moving legs is almost impossible for any human being. The most common disorder which effects the movement of the leg particularly in the most productive period of life i.e. 30-50 yrs is backache problem. Back pain is a human condition with 60 - 80% of the world's population experiencing pain, one third of these patients turn into Grudhrasi (Sciatica).<sup>[1]</sup> It is a painful condition chiefly affecting the lower back area which radiates downwards to one leg or both legs.<sup>[2]</sup> It is a major cause for the loss of millions of workdays annually resulting in huge loss of nation's economy. For example in U.K, 7% of adult population consults doctor with back pain at a cost of £ 500 million and 80 million working days lost.<sup>[3]</sup>

According to Ayurveda Grudhrasi is of two types, i.e. Vatikam, Vatakaphajam.<sup>[4]</sup> Cardinal symptoms of this disease are Stambhana (stiffness), Ruk (pain), Spandanam, Gruhnam and Todam (pricking pain), which starts from Sphik (buttocks), Spreads towards Kati (waist), Prushta (back), Uru (thighs), Janu (knee), Jangha (ankle), Padam (foot) and patient is unable to lift his affected limb straight while lying in supine position.

Now-a-days, numbers of cases are increasing as the days progresses irrespective of age and sex, due to mithyavaravivaha (improper food and life style), affecting the rich to poorer classes. Being disease is marnnasandhigata (related to vital points and joints), very difficult to treat. But there are some medicinal combination explained in Ayurveda which can relieve this suffering. Gandarvahasthadi Kwatha is a purely herbal product used commonly for the management of vataja rogas

like grudhrasi (sciatica), Kati graha (back pain) etc.<sup>[5]</sup> The formula is standardized with qualitative, quantitative analysis along with HPTLC fingerprints.<sup>[6]</sup> The Trial drug Gandarvahasthadi Kwatha explained in Sahasrayoga is an orally administrable pharmaceutical drug combination of 8 ingredients namely Gandarahastha (Roots of *Ricinus communis* Linn), Chiruvilwa (Bark of *Holoptelea integrifolia* Planch.), Hutaswa (Roots of *Plumbago zeylanica* Linn.), Vishwam (Rhizomes of *Zingiber officinale* Roxb.), Pathya (Fruit rinds of *Terminalia chebula* Retz.), Punarnava (Whole plants of *Boerhavia diffusa* Linn.), Yavashaka (Whole plants of *Tragia involucrata* Linn.) and Bhumithalam (Tubers of *Asparagus adscendens* Roxb.). The main objective of the study was to assess the efficacy of Gandharvahasthadi Kwatha as trial drug in the management of Grudhrasi.

## MATERIAL AND METHODS

### Study design:

Prospective open controlled clinical trial on Grudhrasi with Gandharvahasthadi Kwatha

### Treatment Schedule

Grudhrasi patients were selected randomly as per exclusion and inclusion criteria. 100 patients diagnosed as Grudhrasi were treated with the trial drug Gandharvahasthadi Kwatha at a dose of 50 ml twice daily i.e. early morning 6 -7 AM before food and evening 7 - 8 PM before food. Common pathyapathya and ahara viharas (diet and activities) were strictly followed till the end of the study. Duration of the study was 45 days and follow up from 46<sup>th</sup> day after the treatment.

### Place of Study

The study was carried out in two places; they are Center for post graduate studies and research in Ayurveda, Tilak Ayurveda

Mahavidhyalaya, Rasthapet, Pune and Nangelil Ayurveda Medical College Hospital, Nellikuzhi, Kothamangalam, Ernakulam, Kerala.

### Collection of data

Detailed clinical examination and investigations were done at the time of admission, during treatment and follow up visits. Blood examinations like LFT, RFT, Haemogram were done only in willing patients and they were not compelled to do the same. Proforma was prepared and the data were collected comprehensively.

### Inclusion criteria

- Patients of both sex with the age group between 18-60 years
- Grudhrasi diagnosed on the basis of signs and symptoms described in Ayurveda
- Patients with a positive SLR test

### Exclusion criteria

- Congenital Deformities
- Grudhrasi due to Marmabhighatam
- Disease developed due to any post surgical complications.
- Grudhrasi due to Pelvic Inflammatory Disease like sacroileacitis, ankylosing spondylitis.
- Grudhrasi due to IVDP with bowel and bladder involvement.
- Patients suffering from other systemic diseases like Renal failure, Vertebral T.B, Diabetes, Neoplasm.
- Patients with RA test are positive.
- During pregnancy, lactation period and during breast feeding

## RESULTS AND DISCUSSION

Results of 100 patients with Grudhrasi in study group were analyzed. The results were

statistically analyzed before & after treatment and follow up with help of paired 't' test. In all the nine symptoms considered, the paired 't' test had denoted that the treatment was highly significant ( $p < 0.001$ ), which implies that Gandharvahasthadi kwatha was effective in the treatment of Grudhrasi

The maximum numbers of patients obtained were in the age group of 40-50 years i.e. 48%, in the age group of 30-40 years 37% of patients, in the age group of 18-30 years 13% of patients and minimum number of patients were in the age group of 50-60 years i.e. 12%. These findings clearly show that the age group of 40-50 years is mostly affected. The maximum numbers of patients were males nearly about 58% and female patients were 42%. This may be due to the demographic facts. 78% of the selected patients for the study were Hindus as the area of the study was a Hindu dominated area and followed by 10% Christians and 12% Muslims. 38% of the patients were in the labor category, 28% were housewives, 14% were Businessmen and 20% were in the unemployed category. Majority of the patients were from the middle class families i.e. 54.00%, while 38% were from the lower class and only 8% were from the upper class families. Middle class people were more affected, may be due to continuous strenuous work. 41% of the patients had the habit of Tea/Coffee and Tobacco chewing followed by Alcoholics 30%, followed by Cigarette/Beedi smokers, which was only 15%. All these habits decrease the Vyadhikshamata (immunity) and vitiate Vata. 68% of the patients were in mixed category (Non Vegetarian) while only 32% of the patients were Vegetarians. It is said to be seen more commonly among Non Vegetarian.

Main symptoms such as Sthambha, Ruk, Toda, Gruhnam were seen in all cases which were selected for the study, where as the symptom Spandanam seen on only 98% of the patients. Associated symptoms were seen in all of the cases. Aruchi (anorexia) and

Gouravam (heaviness) were seen in about 50.00% and Tandra (tremor) in 55% of the cases. Maximum numbers of patients were found with a positive left leg SLR test, i.e. 43%, where as 40% came positive in the right leg. The numbers of patients suffering in both legs were only 17%.

Gandharvahasthadi Kwatha provided highly significant relief ( $P<0.001$ ) in symptoms like Sthambham by 50.00%, in Ruk and Gruhnam by 80.00% each, where as in Todam it was 78% and 75% relief was found in the symptom Spandanam. (Table 1). Effect of Gandharvahasthadi Kwatha on main symptoms after follow up, provided highly significant relief ( $P<0.001$ ) in Sthambham, Ruk, Todam, Spandanam, Gruhnam and 60.00%, 90.00%, 82.00%, 81.00% and 85.00% of relief respectively. In short it was found that after follow up, the percentage of relief was increased regarding all the symptoms. (Table 2)

Effect of Gandharvahasthadi Kwatha on associated symptoms after 45 days of treatment provided highly significant relief ( $P<0.001$ ) in Aruchi by 40.00%. In Gouravam and Tandra, relief was highly significant ( $P<0.001$ ) by 30% and 36.36% respectively. (Table 3). Effect of Gandharvahasthadi Kwatha on associated symptoms after follow up provided highly significant relief ( $P<0.001$ ) and the percentage of relief in symptoms like Aruchi, Gouravam, Tandra was 72.00%, 80% and 72.72.00% respectively. In short the trial drug increases the percentage of relief in relieving the associated symptoms. From this it is clear that the trial drug Gandharvahasthadi kwatha is providing long lasting result. (Table 4)

Effect of Gandharvahasthadi Kwatha on SLR test after 45 days of treatment provided highly significant improvement ( $P<0.001$ ) in positive Right and Left leg S.L.R. Test by 50 % and 51.16% respectively, where as moderately significant improvement ( $P<0.010$ ) was

achieved in those patients suffered from positive S.L.R test of both legs by 41.17%. (Table 5). Effect of Gandharvahasthadi Kwatha on SLR test after Follow up provided highly significant improvement ( $P<0.001$ ) in positive right and left leg S.L.R. Test by 75% & 76.74% respectively. It also provided highly significant improvement ( $P<0.001$ ) in those patients suffering from positive S.L.R test of both legs by 64.70%. (Table 6) Comparative effect of therapies on main symptoms of 100 patients of Grudhrasi after 45 days of treatment and after follow up based on % of relief showed significant improvement after the follow up. (Table 7)

The effect of therapies on main symptoms of 100 patients of Grudhrasi after 45 days of treatment and after follow up based on statistical datas shows the symptom Sthambham is moderately significant ( $p$ -value  $<0.010$ ), which means after follow up the result of the treatment is better than the result after the treatment period, while other symptoms showed insignificant result ( $P>0.100$ ). From the above data it is clear that the treatment did not show significant improvement after the follow up period. (Table 8)

Comparative effects of therapies on the associated symptoms of 100 patients of Grudhrasi after 45 days of treatment and follow up based on % of relief showed significant improvements after the follow up (Table 9). Comparative effects of therapies on the associated symptoms of 100 patients of Grudhrasi after 45 days of treatment and follow up shows statistically the symptom Aruchi is highly significant ( $p$ -value  $<0.001$ ), which means after follow up the result of the treatment is better than the result after the treatment period. The other symptoms showed insignificant result ( $P>0.100$ ), from the datas it is clear that the treatment did not showed significant improvement after the follow up period. (Table 10)

**Table 1: Effect of Gandharvahasthadi Kwatha on main symptoms of 100 patients of Grudhrasi after 45 days of treatment**

Sl. No.	Main symptoms	Mean score			%	S.D (±)	S.E (±)	t value	p value
		BT	AT	BT-AT					
1.	Sthambham	1.90	1.15	0.75	50	0.829	0.0829	9.045	<0.001
2.	Ruk	1.90	0.40	1.50	80	1.024	0.1024	14.648	<0.001
3.	Todam	1.45	0.30	1.15	78	0.871	0.0871	13.771	<0.001
4.	Spandanam	1.48	0.30	1.18	75	0.887	0.0887	13.291	<0.001
5.	<b>Gruhnam</b>	<b>1.90</b>	<b>0.70</b>	<b>1.20</b>	<b>80</b>	<b>0.748</b>	<b>0.0748</b>	<b>16.035</b>	<b>&lt;0.001</b>

**Table 2: Effect of Gandharvahasthadi Kwatha on main symptoms of 100 patients of Grudhrasi after Follow up**

Sl. No.	Main symptoms	Mean score			%	S.D (±)	S.E (±)	t value	p value
		BT	AFU	BT-AFU					
1.	Sthambham	1.80	0.70	1.10	60	1.044	0.1044	10.536	<0.001
2.	Ruk	2.10	0.50	1.60	90	0.9165	0.0916	17.457	<0.001
3.	Todam	1.74	0.60	1.14	82	0.693	0.0693	16.447	<0.001
4.	Spandanam	1.90	0.59	1.31	81	0.863	0.0863	15.164	<0.001
5.	Gruhnam	1.75	0.65	1.10	85	1.053	0.1053	10.440	<0.001

**Table 3: Effect of Gandharvahasthadi Kwatha on associated symptoms of 100 patients of Grudhrasi after 45days of treatment**

Sl. No.	Associated symptoms	Mean score			%	S.D (±)	S.E (±)	t value	p value
		BT	AT	BT-AT					
1.	Aruchi	1.80	1.40	0.40	40	0.748	0.105	7.559	<0.001
2.	Gouravam	2.00	1.20	0.80	30	0.606	0.0857	9.333	<0.001
3.	Tandra	1.90	1.00	0.909	36.36	0.7998	0.1078	8.4284	<0.001

**Table 4: Effect of Gandharvahasthadi Kwatha on associated symptoms of 100 patients of Grudhrasi after Follow up**

Sl. No.	Associated symptoms	Mean score			%	S.D (±)	S.E (±)	t value	p value
		BT	AFU	BT- AFU					
1.	Aruchi	1.86	0.94	0.92	72	0.695	0.0983	9.357	<0.001
2.	Gouravam	1.80	0.80	1.00	80	0.638	0.0903	11.067	<0.001
3.	Tandra	1.909	0.819	1.09	72.72	0.674	0.090	11.99	<0.001

**Table 5: Effect of Gandharvahasthadi Kwatha on SLR test of 100 patients of Grudhrasi after 45days of treatment**

Sl. No.	SLR test Side	Mean value			%	S.D (±)	S.E (±)	t value	p value
		BT	AT	BT-AT					
1.	Right leg	1.50	0.75	0.75	50	0.839	0.132	5.648	<0.001
2.	Left leg	1.255	0.721	0.534	51.16	0.549	0.0838	6.368	<0.001
3.	Both legs	1.58	1.169	0.411	41.17	0.507	0.123	3.340	<0.010

BT – Before Treatment; AT – After Treatment; AFU – After Follow up



**Table 6: Effect of Gandharvahasthadi Kwatha on SLR test of 100 patients of Grudhrasi after Follow up**

Sl. No.	SLR test Side	Mean value			%	S.D (±)	S.E (±)	t value	p value
		BT	AFU	BT-AFU					
1.	Right leg	1.50	0.50	1.00	75	0.716	0.113	8.831	<0.001
2.	Left leg	1.255	0.232	1.023	76.74	0.706	0.1077	9.492	<0.001
3.	Both legs	1.58	0.947	0.647	64.70	0.492	0.119	5.415	<0.001

**Table 7: Comparative effect of therapies on main symptoms of 100 patients of Grudhrasi after 45 days of treatment and after follow up Based on % of relief**

Treatment period	Main symptoms				
	Sthambham	Ruk	Todam	Spandanam	Gruhnam
After treatment	50%	80%	78%	75%	80%
After follow up	60%	90%	82%	81%	85%

**Table 8: Comparative effect of therapies on main symptoms of 100 patients of Grudhrasi after 45 days of treatment and after follow up based on statistical data**

Main Symptoms	t – value	p – value	Remarks
Sthambham	2.6254	<0.010	AFU> AT
Ruk	1.1642	>0.100	AFU=AT
Todam	0.0890	>0.100	AFU=AT
Spandanam	1.0500	>0.100	AFU=AT
Gruhnam	0.7742	>0.100	AFU=AT

**Table 9: Comparative effects of therapies on the associated symptoms of 100 patients of Grudhrasi after 45 days of treatment and follow up based on % of relief:**

Treatment period	Associated symptoms		
	Aruchi	Gouravam	Tandra
After treatment	40%	30%	36.36%
After follow up	72%	80%	72.72%

**Table 10: Comparative effects of therapies on the associated symptoms of 100 patients of Grudhrasi after 45 days of treatment and follow up based on statistical data**

Associated symptoms	t – value	p – value	Remarks
Aruchi	3.608	<0.001	AFU>AT
Gouravam	1.607	>0.100	AFU=AT
Tandra	1.283	>0.100	AFU=AT

BT – Before Treatment; AT – After Treatment; AFU – After Follow up

**Table 11: Comparative effect of therapies on the S.L.R. Test of 100 patients of Grudhrasi after 45 days of treatment and follow up based on % of relief**

Treatment period	S L R test		
	Rt. leg	Lt. leg	Both leg
After treatment	50%	51.16%	41.17%
After follow up	75%	76.74%	64.70%

**Table 12: Comparative effect of therapies on the S.L.R. Test of 100 patients of Grudhrasi after 45 days of treatment and follow up based on statistical data**

SLR test	t – value	p – value	Remarks
Right leg	1.433	>0.100	AFU=AT
Left leg	3.585	<0.001	AFU>AT
Both legs	1.377	>0.100	AFU=AT

**Comparative effect of therapies on the S.L.R. test of 100 patients of Grudhrasi after 45 days of treatment and follow up based on % of relief:**

Comparing the result based on % of relief of SLR Test Positive, showed significant improvement after the follow up. (Table 11)

**Comparative effect of therapies on the S.L.R. Test of 100 patients of Grudhrasi after 45 days of treatment and follow up based on statistical data:**

While comparing the results of SLR Test Positive, between after Therapy and after follow up statistically it is clear that on Left leg , SLR Test Positive showed highly significant (p-value <0.001) results which means after follow up the result of the treatment is better than the result after the treatment period. While right leg and both legs SLR Test Positive showed insignificant result (P>0.100) and from the data it is clear that the treatment showed insignificant improvement after the follow up period. (Table 12)

In the trial drug Gandharvahasthadi kashaya the ingredients are Gandharvahastha, Chirabilwa, Hutaswa, Viswa, Pathya, Punarnava, Yavasaka, and Bhumithala.

The ingredient Gandharvahastha (*Ricinus communis* Linn.) of this formulation has the main therapeutic action. It possesses actions like Vedana sthapana(analgesic), shoohalaha(decreases pain), Angamarda prashamana(decreases body pain), katishoolaghna(decreases back pain).<sup>[7]</sup>Chirabilwa (*Holoptelea integrifolia* Planch.) is mainly useful in inflammations, dyspepsia, flatulence, rheumatism and it purifies the blood.<sup>[8]</sup>

Hutasha (Chitraka) (*Plumbago zeylanica* Linn.) with the actions like Soolaprashamana (decreases pain) and by its deepana, pachana properties may rectify the Amatva, thereby giving relief in symptoms like Aruchi(distaste), Tandra(stupor) and Gourava (heaviness). Thus it counters the progression of the disease effectively.<sup>[9]</sup>Viswa (Sunthi) (*Zingiber officinale* Roxb.) possesses actions like shothahara(anti-inflammatory) and Vedanasthapana (analgesic)<sup>[10]</sup> which reduces the pain and decreases the severity of the condition grudhrasi

Haritaki (*Terminalia chebula* Retz.) comes under Triphala, is considered as Potentiator as it does the action of Anti inflammatory. It is a mild laxative.<sup>[11]</sup>Punarnava (*Boerhavia diffusa* Linn.) may be effectively useful in the management of oedema, dysuria, fever,

anaemia, colic, cough, poisons, abdominal and heart troubles. <sup>[12]</sup>Yavasaka (*Tragia involucrata* Linn.) may be useful as Medohara, Shothahara, Jwaraghna, Vedanasthapana. Bhumithala (Musali) (*Asparagus adscendens* Roxb.) has a special effect over the Mutra marga (urinary system).<sup>[13]</sup>

Gandharvahasthadi Kwatha mentioned in Sahasrayoga has the properties like shoolahara, vedanasthapana (analgesic), deepana (appetizer), pachana (digestive), ruchya, malasodhana as well as vathashamana property and also a combined action of vatha dosha anulomanam.<sup>[5]</sup> The above mentioned combined or synergic action of all the ingredients helps the trial drug Gandharvahasthadi Kwatha to be effective in the management of both the types of Grudhrasi i.e. Vathika and Vathkaphaja.

After the overall assessment, the Gandharvahasthadi Kwatha was found to be superior in the treatment of Grudhrasi of both types and helps to prevent the recurrence and complication.

## CONCLUSION

Grudhrasi affects persons of any age group, even though the incidences were more in the age group of 40-50 years. The trial drug of Gandharvahasthadi kwatha has a prime role in the management of Grudhrasi by Srotovisodhana (clearing channels), Pachana (digestive), deepana (appetizer), malasodhana (clears the waste), vatanulomana and Dhatuposhana (nourishment). The medication with the trial drug of Gandharvahasthadi kwatha showed significant improvement in the

SLR test and did not have any untoward effect on the patients. The trial drug of Gandharvahasthadi Kwatha provided long lasting result on almost all the complaints which was well appreciated during the follow up period. The study revealed that results are statistically significant in the management of both vatika and vatakaphaja types of Grudhrasi.

## REFERENCES

1. Vroomen PC, De Krom MC, Knottnerus JA. Predicting the outcome of sciatica at short-term follow-up. Br J Gen Pract. 2002; 52:119-123.
2. Michael Devereaux. Low Back Pain. Med Clin N Am 2009; 93: 477-501.
3. Nikolaos Maniadakis, Alastair Gray. The economic burden of back pain in the UK. Pain 84 (2000) 95-103
4. Caraka. Caraka Samhita (Chakrapanidutta Commentary), Yadavji Trikamji, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2007. Chikitsasthana, Vatavyadhi. p. 619.
5. Krishnan Vaidyan KV, Gopala Pillai S, editors. Sahasrayogam (Sujanpriya Commentary). 27<sup>th</sup> ed. Alappuzha: Vidyarambham Publishers; 2007.p.78.
6. Christy J Thundiparambil, Sunitha Poly, Pramod V Kulkarni, Roshy Joseph C, Ilanchezhian R. Preliminary analytical study of Gandharvahasthadi Kwatha – An Ayurvedic polyherbal formulation. Ayurpharm Int J Ayur Alli Sci. 2012;1(2):41 - 45
7. Sharma PV. Dravyaguna Vijnana, Vol.2. 1<sup>st</sup> ed. Varanasi:Chaukhambha Bharati Academy; 2005.p.58-62.
8. Ibid. p.816-818.
9. Ibid. 359-361.
10. Ibid. p.331-335.
11. Ibid. p.753-758.
12. Ibid. p.630-632.
13. Ibid. p.559-560.

Source of Support: Nil

Conflict of Interest: None Declared