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Research Article

A CLINICAL STUDY TO EVALUATE THE EFFECT OF KARPASASTHYADI TAILA NASYA, PHYSIOTHERAPY AND A COMBINATION OF BOTH IN CERVICAL SPONDYLOSIS

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ABSTRACT

Present era is a period of modernization and fast life. Due to the advancement in life style people undergo many unwanted practices like faulty dietetic habits, improper sitting posture, continuous work in one posture and overexertion, load bearing movements during travelling and sports – all these factors create undue pressure and compressive injury to the spine and also responsible for early degenerative changes in bodily tissue which play an important role in producing disease like cervical spondylosis. In this way, this disease is now becoming a significant threat to the working population due to its progressive nature.

The *Nasya Karma* is considered as the best procedure for diseases of head and neck. Physiotherapy provides several benefits in relieving pain and spasm. It can help to maintain the strength of the neck muscles and improve the flexibility of the neck through therapeutic neck exercises and other form of treatment such as manipulation, US, SWD, IFT etc. These two different modes of treatment having its own importance in the management of cervical spondylosis so the present study has been conducted to evaluate the combined effects of these therapies.

Results & Conclusion: All the three groups have given a highly significant improvement in reducing the signs and symptoms of cervical spondylosis. While comparing, it was also statistically proved that *Nasya* along with Physiotherapy is more effective than either *Nasya* or Physiotherapy alone in reducing the signs and symptoms of cervical spondylosis.

KEYWORDS: *Nasya*; Physiotherapy; Cervical Spondylosis, *Karpasasthyadi Taila.*

INTRODUCTION

In this period of modernization and fast life, people undergo many unwanted practices like improper sitting posture for long time in offices, continuous work in one posture and overexertion, load bearing movements during travelling and sports – all these factors create undue pressure and compressive injury to the spine and play an important role in producing disease like cervical spondylosis. Faulty dietetic habits and irregular life style is responsible for early degenerative changes and play a vital role in the manifestation of such degenerative disorder. In this way, this disease is now becoming a significant threat to the working population due to its progressive nature.

The description or reference regarding *Greevastambha* is not available as a separate disease entity in any of the major *Ayurvedic* texts. It is mentioned as one of the 80 *Vataja Nanatmaja Vikaras*[1].

The *Nasya Karma* is considered as the best and the most specific procedure for diseases of the head and neck- "*Urdhwa Jatru-Vikaresu Visesannasyamisyate"*[2]. Because as stated by *Vagbhatta* the nasal passage is considered as the portals of the head "*Nasa hi Siraso Dwaram"*[3] and accordingly all drugs measures introduced through the nose spread throughout the head and its constituent parts and may accordingly

influence all the *Dosas* and diseases situated in these parts.[4]

Due to its anatomical structure, the neck is highly vulnerable to injury and some other pathological conditions that produce pain, spasm, weakness of muscles and restriction of movement etc.[5] Physiotherapy provides several benefits in relieving pain, spasm. It can help to maintain the strength of the neck muscles and improve the flexibility of the neck through therapeutic neck exercises and other form of treatment such as manipulation, US, SWD, IFT etc. which helps to improve the circulation and range of movement of the neck, which are vital in Cervical spondylosis treatment.[6,7]

Earlier works carried out

A clinical study on the development of subtype of Abhyanga with reference to its role in the management of Griva-hundana (cervical spondylosis). By-Dr. Kalapi Patel Department of Panchkarma I.P.G.T. & R.A.Gujarat Ayurved University, Jamnagar.

Effect of *Tikta Kshira Basti* and *Patrapinda Sweda* In The Management Of Cervical Spondylosis (*Asthigata Vata*). By- Dr. Jayadipkumar P. Shah Department Of Panchkarma, I.P.G.T. & R.A. Gujarat Ayurved University, Jamnagar.

Objectives

1. To evaluate the efficacy of *Karpasasthyadi taila Nasya* in cervical spondylosis.
2. To evaluate the efficacy of physiotherapy in cervical spondylosis.
3. To find out the combined effect of *Karpasasthyadi taila Nasya* and Physiotherapy in the management of Cervical Spondylosis.

MATERIALS AND METHODS

Study population

The patients were selected from the outpatient unit of Govt. Ayurveda College Hospital, Tripunithura according to inclusion and exclusion criteria. They were divided into three equal groups by Lottery method.

Sample frame

a. **Study Design:** Comparative Clinical Trail
b. **Sample size:** 45 participants (15 in each group)
c. **Period of study:** 18 months
d. **Selection of patients:** As per inclusion and exclusion criteria.
e. **Study setting:** Govt. Ayurveda College Hospital, Tripunithura.

Criteria for Diagnosis

The criteria of the diagnosis were mainly based on the signs and symptoms of cervical spondylosis (*Griva Hundanaum*). The detailed locomoter examination of the affected part i.e. neck was carried out. In addition, radiological examination was carried out in all the patients to conform the diagnosis as well as to exclude any other pathology. Routine haematological, urine, stool and biochemical investigations were carried out to exclude any other pathology.

Inclusion criteria

- Diagnosed cases of cervical spondylosis.
- X-ray of cervical spine showing relevant changes of cervical spondylosis.
- Age group: 20-60 yrs.
- Patients with written consent.

Exclusion criteria

- Nasya anarha.[8]
- Cases where Physiotherapy is contraindicated.
- Patients with serious Cardiac disorders like M.I, Cardiac Failure etc.
- Severe hepatic disorders.
- Patients having associated conditions like fibrositis, rheumatoid spondylitis, ankylosing spondylosis, RA.
- Pregnant females.

Drug preparation

Karpasasthyadi taila[9] was prepared in pharmacy of Govt. Ayurveda College & Hospital Tripunithura, as per Snehapaka vidhi mentioned by Sharangdhara in Sh. Sam. Madh. Kh. – ch.9.

Drug intervention:

Group A - Nasya group

Patients were subjected to *Uttama matra of Marsha Nasya[10]:*

a) *Poorva Karma*

Local *Snehana* with *Karpasasthyadi Taila* and local *Nadi Sveda*.

b) *Pradhana Karma*

Marsha Nasya with *Karpasasthyadi Taila (Mradu paka)* with the dose of 10 *Bindu* i.e. 5 ml in each nostril at 8:30 am for consecutive 7 days.

c) *Paschat karma*

Dhoomapaana with *Haridra Varti* and *Kavala* with *Ushnambu*.

Group B – Physiotherapy Group

The whole physiotherapy procedure of 20 days was divided in to 4 Steps, each for 5 days.

Step 1. (For first 5 days): Pain management with the help of Short Wave Diathermy, Ultra sound, Interferential therapy, TENS.

Step 2. (For next 5 days): Traction, Trigger point release and Myofascial release.

Step 3. (For next 5 days): Manual mobilization techniques.

Step 4. (For next 5 days): Isometric Strengthening exercise of Cervical, Shoulder and Chest muscles.

Group C – *Nasya* with Physiotherapy

Nasya was administrated as mentioned above in Group A. Then after patients were advised to follow *Parihara vithi* for 14 days. Next day physiotherapy schedule was started as same as mentioned above in Group B.

Assessment Criteria: Both pre and post assessments of the patients were done on the basis of clinical symptoms-

- Pain
- Stiffness
- Tenderness
- Headache
- Vertigo
- Tingling sensation
- Range of movement
- Muscle power

Assessment parameters Gradation with score:

Pain:

0=No Pain

1=Pain in the neck,

2=Pain in neck, mild aggravates with movement

3=Pain in neck, severe aggravates with movement

4=Pain in neck, radiation and disturbed the sleep.

Stiffness:

0=No Stiffness,

1=Stiffness up to 1 hour

2=Stiffness up to 2-3 hours

3=Stiffness up to 4-6 hours

4=Stiffness more than 6 hours

Tenderness

0=No tenderness

1=Mild pain on pressure

2=Pain & Wincing of the face on pressure

3=Pain & Withdrawal of the affected part on pressure

4=Does not allow to touch

Headache

0=No headache

1=Mild pain occasionally

2=Headache once in a week

3=Headache more than 5 times in a week

4=Daily severe headache

Vertigo

0=No vertigo

1=vertigo Up to 1hr

2=vertigo Up to 2hr

3=vertigo Up to 3hr

4=vertigo More than 3hr

Tingling sensation

1=Absent

2=Occasionally

3=Up to 1hr

4=Up to 2hr

5=More than 3hr

Muscle power

0= No movement is observed.

1= Only a trace or flicker of movement

2= Muscle can move only if the resistance of gravity is removed.

3= joint can be moved only against gravity

4= Muscle strength is reduced but muscle contraction can still move joint against resistance.

5 = Muscle contracts normally against full resistance.

Restricted neck movements

0= Normal range of movement

1= ROM reduced up to 25%

2= ROM reduced to 26% -50%

3= ROM reduced 51% - 75%

4= ROM reduced 76% - 100%

Follow up study:

In *Nasya* group, after finishing *Nasya* schedule the patients were advised to report O.P.D. on 15th day and 30th day. In physiotherapy group the patients were advised to report after

the physiotherapy schedule finished i.e. on 20th day and thereafter on 30th day and 45th day. In *Nasya* with physiotherapy group the patients were advised to report after the full course of treatment i.e. on 41st day and thereafter on 56th day and 71st day.

STATISTICAL ANALYSIS AND INTERPRETATION

Criteria for the Assessment of the total effect of the therapy

The subjective criteria were assessed before treatment, after treatment, after fist follow up and after second follow up. The data obtained in clinical study is subjected to statistical test and analyzed in two parts as;

1. The Wilcoxon signed Rank test

2. Percentage of improvement in each parameter of each scale is calculated

Table 1: Showing Statistical analysis of effect of treatments on pain

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	3.13				
	AT	2.27	BT-AT	27.47%	-2.93	<.01
	AF1	1.87	BT-AF1	40.02%	-3.18	<.001
	AF2	1.47	BT-AF2	53.03%	-3.41	<.001
Group B	BT	3.13				
	AT	2.40	BT-AT	23.32%	-2.93	<.01
	AFU1	2.27	BT-AF1	27.47%	-3.18	<.001
	AFU2	1.80	BT-AF2	42.49%	-3.41	<.001
Group C	BT	3.20				
	AT	1.87	BT-AT	41.56%	-2.02	<.001
	AFU1	1.40	BT-AF1	56.25%	-3.14	<.001
	AFU2	.87	BT-AF2	72.81%	-3.14	<.001

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was 72.81% while in Group A it was 53.03% and in Group B it was 42.49% which suggest that combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone.

Table 2: Showing Statistical analysis of effect of treatments on Stiffness

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	2.20				
	AT	1.33	BT-AT	39.54%	-3.18	<.001
	AF1	1.07	BT-AF1	51.36%	-3.30	<.001
	AF2	.80	BT-AF2	63.63%	-3.41	<.001
Group B	BT	3.07				
	AT	2.53	BT-AT	17.58%	-2.52	<.01
	AFU1	2.00	BT-AF1	34.85%	-3.06	<.01
	AFU2	1.40	BT-AF2	54.39%	-3.41	<.001
Group C	BT	2.80				
	AT	1.00	BT-AT	64.28%	-3.30	<.001
	AFU1	.87	BT-AF1	68.92%	-3.41	<.001
	AFU2	.87	BT-AF2	68.92%	-3.41	<.001

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was **68.92%** while in Group A it was **63.63%** and in Group B it was **54.39%** which suggest that combination of Nasya and physiotherapy is more effective than either Nasya or Physiotherapy alone in relieving stiffness in case of cervical spondylosis.

Table 3: Statistical analysis of effect of treatments on Tenderness

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	1.60				
	AT	1.07	BT-AT	33.12%	-2.52	<.01
	AF1	.93	BT-AF1	41.87%	-2.80	<.01
	AF2	.67	BT-AF2	58.13%	-3.06	<.01
Group B	BT	1.60				
	AT	1.00	BT-AT	37.5%	-2.67	<.01
	AFU1	.73	BT-AF1	54.37%	-2.93	<.01
	AFU2	.73	BT-AF2	54.37%	-2.93	<.01
Group C	BT	1.40				
	AT	.53	BT-AT	62.14%	-3.06	<.01
	AFU1	.53	BT-AF1	62.14%	-3.06	<.01
	AFU2	.40	BT-AF2	71.42%	-3.80	<.01

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was **71.42%** while in Group A it was **58.13%** and in Group B it was **54.37%** which suggest that combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone in relieving tenderness in case of cervical spondylosis.

Table 4: Showing statistical analysis of effect of treatments on Tingling Sensation

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	1.60				
	AT	1.33	BT-AT	16.87%	-1.83	<.05
	AF1	1.33	BT-AF1	16.87%	-1.83	<.05
	AF2	0.93	BT-AF2	41.87%	-2.80	<.01
Group B	BT	1.73				
	AT	1.27	BT-AT	26.58%	-2.37	<.01
	AFU1	1.13	BT-AF1	34.68%	-2.67	<.01
	AFU2	.93	BT-AF2	46.24%	-3.06	<.01
Group C	BT	1.07				
	AT	0.67	BT-AT	39.84%	-2.20	<.05
	AFU1	0.60	BT-AF1	43.92%	-2.37	<.01
	AFU2	0.40	BT-AF2	62.61%	-2.80	<.01

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was 62.61% while in Group A it was 41.87% and in Group B it was 46.24% which suggest that combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone in relieving tingling sensation in case of cervical spondylosis.

Table 5: Showing Statistical analysis of effect of treatments on Headache

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	2.33				
	AT	1.80	BT-AT	22.74%	-2.52	<.01
	AF1	1.53	BT-AF1	34.33%	-3.06	<.01
	AF2	1.07	BT-AF2	54.07%	-3.41	<.001
Group B	BT	2.53				
	AT	1.87	BT-AT	26.08%	-2.80	<.01
	AFU1	1.87	BT-AF1	26.08%	-2.80	<.01
	AFU2	1.60	BT-AF2	36.75%	-3.30	<.001
Group C	BT	2.00				
	AT	1.33	BT-AT	33.50%	-2.80	<.01
	AFU1	1.00	BT-AF1	50.00%	-3.18	<.001
	AFU2	.80	BT-AF2	60.00%	-3.30	<.001

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was **60.00%** while in Group A it was **54.07%** and in Group B it was **36.75%** which suggest that

combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone in relieving headache in case of cervical spondylosis.

Table 6: Showing statistical analysis of effect of treatments on Muscle Power

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	1.40				
	AT	1.20	BT-AT	14.28%	-1.60	<.05
	AF1	1.00	BT-AF1	28.57%	-2.20	<.05
	AF2	.73	BT-AF2	47.85%	-2.80	<.01
Group B	BT	1.33				
	AT	1.13	BT-AT	15.03%	-1.60	<.05
	AFU1	.87	BT-AF1	34.58%	-2.37	<.01
	AFU2	.60	BT-AF2	54.88%	-2.93	<.01
Group C	BT	1.40				
	AT	1.07	BT-AT	23.57%	-2.02	<.05
	AFU1	.80	BT-AF1	42.85%	-2.67	<.01
	AFU2	.53	BT-AF2	62.14%	-3.06	<.01

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analysed that the % efficacy of treatment in Group C was **62.14%** while in Group A it was **47.85%** and in Group B it was **54.88%** which suggest that combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone in relieving muscle power in case of cervical spondylosis.

Table 7: Showing Statistical analysis of effect of treatments on Restricted Neck Movements

	Stage	Mean	Pair	% of efficacy	Z value	P value
Group A	BT	1.60				
	AT	1.07	BT-AT	33.12%	-2.52	<.01
	AF1	.93	BT-AF1	41.87%	-2.80	<.01
	AF2	.67	BT-AF2	58.13%	-3.06	<.01
Group B	BT	1.60				
	AT	1.00	BT-AT	37.5%	-2.67	<.01
	AFU1	.73	BT-AF1	54.37%	-2.93	<.01
	AFU2	.73	BT-AF2	54.37%	-2.93	<.01
Group C	BT	1.40				
	AT	.53	BT-AT	62.14%	-3.06	<.01
	AFU1	.53	BT-AF1	62.14%	-3.06	<.01
	AFU2	.40	BT-AF2	71.42%	-3.80	<.01

While comparing the Group C with Group A and Group B separately on the bases of % efficacy of treatment after the whole course of treatment it was analyse that the % efficacy of treatment in Group C was **71.42%** while in Group A it was **58.13%** and in Group B it was **54.37%** which suggest that combination of *Nasya* and physiotherapy is more effective than either *Nasya* or Physiotherapy alone in relieving restricted movements of neck in case of cervical spondylosis.

RESULTS AND DISCUSSION

As per the assessment criteria Pain, Tenderness, Stiffness, Tingling sensation, Muscle Power, Headache and Range of movement, *Nasya*, Physiotherapy and a combination of both were found to be statistically and clinically effective in all the parameters taken for assessment.

Table 8: Overall effect of therapy

GROUPS	IMPROVEMENT				
	No. of patients with Complete remission	No. of Markedly improved patients (%)	No. of Moderately Improved patients (%)	No. of Mildly Improved patients (%)	No. of Unchanged patients (%)
Group A	0	7 (46.67%)	7 (46.67%)	1 (6.66%)	0
Group B	0	7 (46.67%)	6 (40.00%)	2 (13.33%)	0
Group C	0	10 (66.67%)	5 (33.33%)	0	0

However considering overall results, as presented in table no.8 we can see that combination of *Nasya* and Physiotherapy was found to be more effective in relieving signs and

symptoms of Cervical Spondylosis as compare to *Nasya* or Physiotherapy alone.

The probable reason why the combine therapy became more beneficial was, after doing *Nasya*, when the manual therapies and traction were performed it easily resolved the structural deformities like reduced intervertebral disc spaces, disc prolepses, nerve root compressions etc. The action of *Nasya* is mainly systemic while all the physiotherapy modalities had a localized effect.

So when the combine therapy was given it had a gradual improvement in patients even up to 2nd follow up. This may be due to synergistic action of the two different therapies.

CONCLUSIONS

Cervical spondylosis is a degenerative disease producing various signs and symptoms which are badly affecting the day to day activities. The disease cervical Spondylosis and *Greevasthambha* are similar in their etiology, signs and symptoms. The *Dosha* involved in *Greevasthambha* are *Vyanavata* and *Sleshaka Kapha*. It is a *Vatavyadhi* affecting *Asthi* and *Sandhi* of *Greeva*. Treatment responses of all parameters were highly significant in all the three groups which show the efficacy of *Nasya, physiotherapy* and a combination of both in treating Cervical Spondylosis. Statistical analysis showed that the combination of *Nasya* and physiotherapy is more effective in reducing signs and symptoms of cervical spondylosis as compared to either *Nasya* or Physiotherapy alone.

This study proves that addition of *Nasya* with physiotherapy gives additional benefits than *Nasya* or physiotherapy procedure alone.

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Study Photograph


Fig. (A) & (B) Showing T.E.N.S. Therapy


Fig. (C) & (D) Showing Interferential Therapy


Fig. (E) & (F) Showing Short wave diathermy therapy