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A CONTROLLED CLINICAL STUDY TO EVALUATE THE EFFICACY OF KARPASASTHYADI TAILA NASYAKARMA IN THE MANAGEMENT OF GREEVA ASTHIGATAVATA VIS- A-VIS CERVICAL SPONDYLOSIS

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ABSTRACT

Asthigatavata is one among *Shoola* and *Shosha Pradhana Vatavyadhi* characterized by *Asthishosha* (Osteoporosis), *Asthibheda* (Cutting pain in bony joints), *Asthishoola, Sandhishoola* (Joint pain), *Bedhaasthiparvanam* (Splitting pain in bones and joints), *Mamsabalakshaya* (Loss of muscle strength), *Aswapna* (Insomnia) *and Satata Ruk* (Continuous pain). When *Kupitha Vata Dosha* enters in to the *Asthi* present in *Greevapradesha* causes series of changes producing symptoms and this clinical entity is named as *Greeva Asthigatavata*. Cervical Spondylosis is seen in the general population with the incidence rate of 83 per 100,000 and occurs mostly in fourth and fifth decades of life. More disability is seen over the age of 50years. Its prevalence is similar for both the sex, although the degree of severity is greater for males. **Aim:** To evaluate the therapeutic efficacy of *Karpasasthyadi Taila Nasyakarma* in the management of *Greeva Asthigatavata* vis-à-vis Cervical Spondylosis. **Materials and Methods:** It was a controlled clinical study with pre and posttest design. Total 100 subjects were incidentally selected and assigned into two groups viz., Group A (Control group) and Group B (Test group), with 50 subjects in each group. Subjects of Control Group were subjected with *Greevabasti* with *Mahamasha Taila* for 7 consecutive days and *Astavarga Kashaya* internally for 14 consecutive days from the first

day of *Greevabasti*. Subjects of Test Group were subjected to *Nasyakarma* with *Karpasasthyadi Taila* for 7 consecutive days along with *Greevabasti* with *Mahamasha Taila* for 7 consecutive days and *Astavarga Kashaya* internally for 14 consecutive days from the first day of *Nasyakarma*. The study consisted of 3 assessments i.e on 0th day, 7th day and on 14th day. **Result:** In the study it was observed that Group B (CC=0.529) showed clinically and statistically highly significant results with respect to reduction of symptoms than Group A (CC=0.389) with high contingency coefficient value. Also, the overall assessment showed clinically and statistically highly significant result in both groups with p value 0.000. **Conclusion:** On comparing the overall effect of the study, trial group (Group B) showed better results than control group (Group A). Hence, *Karpasasthyadi Taila* has a better role in the management of *Greeva Asthigatavata*.

Keywords: *Greeva Asthigatavata,* Cervical Spondylosis*, Karpasasthyadi Taila, Nasyakarma, Mahamasha Taila, Greevabasti, Astavarga Kashaya.*

INTRODUCTION

Degenerative joint disorders are the major concern in the mankind causing pain in old age. Cervical Spondylosis is one such degenerative condition that is commonly encountered in old age. But because of the changed lifestyle, advancement in professional and social life, improper sitting posture, continuous work in one posture and over exertion in work place, jerking movements during travelling and sports, even most of the young and middle age people are victims of Cervical Spondylosis.

Asthigatavata is one among *Shoola* and *Shosha Pradhana Vatavyadhi* which is mentioned in the context of "*Gatavata*" in classical text[1]. It is characterized by *Asthishosha, Asthibheda, Asthishoola*[2]*, Sandhishoola, Bedhaasthiparvanam, Mamsabalakshaya, Aswapna, Satata Ruk*[3]. When *Kupitha* (Aggravated) *Vata Dosha* enters into the *Asthi* (Vertebrae) present in *Greeva Pradesha* (Neck region) causes a series of changes producing symptoms and this clinical entity is named as *Greeva Asthigatavata*. All features mentioned earlier will be exhibited in the region of *Greeva*. Cervical Spondylosis is an age-related degenerative disorder. Pathology generally starts at C5-6 & C6-7 (More susceptible at C5-6) Vertebrae and gradually degenerates the annulus fibrosus and reduces inter-vertebral disc space and formation of osteophyte presenting with Neck pain, Neck stiffness, Radiculopathy, Headache, Restricted movement of Neck, Paraesthesia, Weakness, Sensory loss in upper limb and Vertigo[4]. Cervical Spondylosis is seen in the general population with the incidence rate of 83 per 100,000. Population and prevalence of 3.3 cases per 1000 people and occurs mostly in fourth and fifth decades of life[5]. More disabilities are seen over the age of 50years. The prevalence of Cervical Spondylosis is similar for both the sex, although the degree of severity is greater for males[6]. There is no classical disease which can be equated precisely with Cervical Spondylosis but on the basis of core pathogenesis, this condition can be correlated to *Greeva Asthigatavata*. Western medical science provides both conservative and surgical treatment for Cervical Spondylosis. Subjects will be on medication/ treatment for a longer period of time because of its chronicity[7]. It targets only pain relief, using NSAID's, analgesics and muscle relaxants, which may have many side effects like gastric irritation. Even after such medical treatment, there is progressive cord dysfunction and persistent pain. Surgery is indicated when there is failure of conservative treatment for 10-12 weeks and when there is a progressive neurological deficit due to root or cord compressions[8]. In the above situation, *Ayurveda* mentions a reliable therapy for *Greeva Asthigatavata* / Cervical Spondylosis which is an important area for research. The treatment modalities described in *Ayurveda* for *Greeva Asthigatavata* includes the *Upakramas* (Treatment modalities) mentioned in *Vatavaydhi* and specific modalities mentioned for *Asthigatavata*. Among which *Nasyakarma* as indicated in *Vatajanya Urdhwajatrugta Vyadhis*[9]*,* with

Karpasasthyadi Taila[10] and *Greevabasti*, a *Sthanika Snigdha Sweda* with *Mahamasha Taila*[11] does *Dhatu Poshana* (Tissue nourishment), *Vedana Sthapana* (Analgesic) *and Asthi Poshana* (Nourishment to bony joints). *Astavarga Kashaya* is a *Vatahara Kashaya*[12] which reduces *Asthi Sandhishoola* (Pain in bony joints). From this perspective the current study was undertaken to evaluate the efficacy of *Karpasasthyadi Taila Nasyakarma* in *Greeva Asthigatavata* viz-a-viz Cervical Spondylosis.

Aim and Objective: To evaluate the therapeutic efficacy of *Karpasasthyadi Taila Nasyakarma* in the management of *Greeva Asthigatavata* vis-à-vis Cervical Spondylosis.

Materials and Methods

Materials

The Materials used in the study were:

1. *Karpasasthyadi Taila*
2. *Astavarga Kashaya*
3. *Mahamasha Taila*

Karpasasthyadi Taila, Mahamasha Taila, Astavarga Kashaya were specifically prepared as per the classics from NKCA Pharmacy Pvt Ltd., Krishna Raja Mohalla, Mysuru, a GMP certified unit, were procured for the purpose of study.

Methods: Source of data: Subjects were selected from the O.P.D. and I.P.D. of Government Ayurveda Medical College Hospital, Mysuru.

Sample size and Sampling method

A total of 110 subjects irrespective of gender, socio-economic status and religion, having the signs and symptoms of *Greeva Asthigatavata* vis-a-vis Cervical Spondylosis fulfilling the inclusion criteria were registered for the study. The selected subject's detailed profile was prepared as per the detailed proforma designed for the same purpose, which incorporates relevant data like symptomatology, physical signs, laboratory investigation reports as well as assessment criteria after taking informed Consent of the subject. Incidental selection and Purposive sampling technique was employed. Subjects were assigned into two groups viz., Group A (Control group) and Group B (Trial group). Out of 110 subjects registered, Group A consisted of 56 subjects and Group B with 54 subjects. There were 10 dropouts, 6 in Group A and 4 in Group B and the study was completed in 100 subjects with 50 subjects in each group.

Inclusion Criteria

- The subjects with the symptoms of *Greeva Asthigatavata* vis-à-vis Cervical Spondylosis including features of radiculopathy were included.
- Subjects irrespective of gender between the age group of 25 to 70 years were included.
- Subjects who were fit for *Nasyakarma* were included.
- Both the fresh and treated cases were included.

Exclusion criteria

- Subjects with major Systemic disorders that may interfere with the course of treatment were excluded.
- Subjects with congenital deformity, traumatic injuries, cervical stenosis & myelopathy, ankylosing spondylosis, infections of bone and gross bony deformity and neoplastic conditions of spine were excluded.
- Pregnant and lactating women were excluded.

Diagnostic criteria

The Diagnosis was based on the following *Lakshanas of Greeva Asthigatavata* and clinical manifestation of Cervical Spondylosis viz., *Greeva Asthi Sandhishoola* (Neck pain and Radiation of pain), *Mamsa Bala Kshaya* (Weakness in upper extremities), Neck Stiffness, Restricted range of Neck movement, Paraesthesia, Vertigo, L hermit's sign, Spurling's sign, Shoulder abduction test, Plain X-Ray of Cervical Spine – AP and Lateral views and Kellgren- Lawrence Radiographic Grading Scale of Cervical Spondylosis.

Study Design: The present study was a controlled clinical study with pre and post test design.

Intervention: The interventions were as follows.

Group A – Control Group

1. *Greevabasti* with *Mahamasha Taila* (approximately 250ml-300ml) was carried out for 45 minutes per day, for 7 consecutive days.
2. *Astavarga Kashaya* in the dosage of 45ml in three equal divided doses, thrice daily after food was administered for 14 consecutive days from the first day of *Greevabasti*.

Period of intervention- 14 days

Group B – Test Group

1. *Nasyakarma* with *Karpasasthyadi Taila* was carried out in early morning in empty stomach in a dosage of 6 drops to each nostril for 7 consecutive days along with *Greevabasti* with *Mahamasha Taila* (approximately 250ml-300ml) for 45 minutes per day, for 7 consecutive days.

The subjects were instructed to follow the regimens during and after *Nasyakarma*.

2. *Astavarga Kashaya* in the dosage of 45ml in three equal divided doses, thrice daily after food was administered for 14 consecutive days from the first day of *Nasyakarma*.

Duration: Duration of the intervention 14 days

Assessment

Assessment parameters included the clinical grading of signs and symptoms of the disease *Greeva Asthigatavata* vis-a-vis Cervical Spondylosis viz neck pain, stiffness, radiation of pain, weakness in upper extremities, paraesthesia in upper extremities, vertigo, headache, sleep, tenderness over cervical region, movements of neck, sensory loss. In this Study, total three assessments of the subjects were done. The data were collected on 0 day (Pre-test/ before), on 7^{th} day (During) at evening hours and on 14^{th} day (Post-test/after) of completion of intervention.

Overall Assessment

The Overall assessment was graded with following manner:

Complete relief - Complete reduction in all the symptoms in subjects - Grade 0

Marked improvement- Reduction in all the signs and symptoms except any one symptom in subjects – Grade 1

Moderate improvement- Reduction in all the signs and symptoms except any two symptoms in subjects – Grade 2

Mild improvement- Reduction in all the signs and symptoms except any three symptoms in subjects – Grade 3

Insignificant improvement - No Reduction in any signs and symptoms in subjects – Grade 4

Statistical methods: The results were analyzed statistically by using Descriptive-independent statistics, Chi-square test, Student t test, ANOVA and Contingency co-efficient test analysis using Service product for statistical solution (SPSS) for windows software.

Investigations

X-ray Cervical Spine AP & Lateral view was done for diagnosis as well as to exclude cervical fracture and indications for surgery. Blood routine - Hb%, TC, DC, ESR, RA, FBS, PPBS; Urine routine – Sugar, Albumin, Micro and other relevant investigations in appropriate cases were done to rule out systemic disorders.

OBSERVATIONS

The observations made in the present study were based on the clinical trial on 50 subjects in each Group. In the present study, maximum subjects belonged to the age group 41-60 years denoting that the highest number of data was between the fourth, fifth and sixth decade of age. This confirms the relation of advanced age with disease etiology. Prevalence of Cervical Spondylosis is more common in the fourth and fifth decade of life (is more prevalent in age groups 31 to 40 and 41 to 50 years. Maximum subjects belonged to heavy physical activity (49 subjects) and moderate physical activity (48 subjects). In the study, Occupation of Heavy physical activity involved coolly workers, mansion workers, farmers, Gymnastic people, Carpenters. Occupation of moderate physical activity involved Tailors, Housewives, Dancers, Bus & Lorry drivers, two wheelers drivers. Occupation of sedentary occupation involved Teachers, Engineers, Bank employees and Housewives. This signifies that the disease *Greeva Asthigatavata* vis-a-vis Cervical Spondylosis is more prevalent in the occupation which involves improper ergonomics with continuous working in one place, writing bills, driving for long distances, who have excessive physical strain and activities that puts undue stress on the neck for prolonged periods, faulty sitting and working postures, which all corresponds to the etiology of Cervical Spondylosis. This may lead to the abuse of cervical spine and causes sustained heavy load on Cervical inter vertebral disc leading to tear in annulus fibrosis,

manifesting as Cervical disc herniation. Although all 100 subjects had degenerative changes in the cervical spine radiographically, but the level of degeneration varied from one subject to another subject. In the present study, presence of 5 grades of Cervical Spondylosis denotes that patient may present with radio graphically insignificant Cervical Spondylosis or may present with osteophytes with or out significant joint space narrowing.

RESULTS

Pre-test

In Control Group among 50 subjects pain was severe in 22 (44.0%), moderate pain in 17(34.0%), mild pain in 10 (20.0%) and 1 subject had no pain. Stiffness was severe in 1 subject (2.0%), moderate stiffness in 7 (14.0%), mild stiffness in 2 (4.0%) and 40 had no stiffness. Regarding radiation of pain 18 (36.0%) belonged to grade R2, 17 (34.0%) in grade R1, 7 (14.0%) in grade R4, 5 (10.0%) in grade R3 and 3 (6.0%) in Grade R0. Regarding Weakness 3 (6.0%) had weakness in both upper extremities, 7(14.0%) had weakness in anyone upper extremity, 40 (80.0%) had no weakness. Paraesthesia was present in 30 subjects (60.0%) and absent in 20(40.0%). 7 subjects (14.0%) had Vertigo on neck movements / occasionally and absent in 43(86.0%). Regarding Headache 6 subjects (12.0%) belonged to grade H3, 3 (6.0%) in grade H2, 1 (2.0%) in grade H1 and 40 (80.0%) in grade H0. 13 (26.0%) had moderately disturbed sleep (2-3 hours sleepless), 12 (24.0%) had mildly disturbed sleep (1-2 hours sleepless), 12 (24.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 13 (26.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 7 (14.0%) belonged to 3rd grade, 27 (54.0%) in 2nd grade, 9 (18.0%) in 1st grade and 7 (14.0%) in 0 grade. Regarding painful/ restricted movements of neck 14 (28.0%) belonged to 6th grade, 6 (12.0%) in 5th grade, 7 (14.0%) in 4th grade, 12 (24.0%) in 3rd grade, 8 (16.0%) in 2nd grade, 2 (4.0%) in 1st grade and 1 (2.0%) in 0 grade . 2 (4.0%) had reduced sensation and 48 (96.0%) had normal sensation.

In Trial group 18 (90.0%) reported with severe pain and 2 (10.0%) with moderate pain. 5 (10.0%) reported moderate stiffness, 6 (12.0%) had mild stiffness and 39(78.0%) had no stiffness. Regarding radiation of pain 17 (34.0%) belonged R2, 15 (30.0%) in R1, 7 (14.0%) in R4, 8 (16.0%) in R3 and 3 (6.0%) in R0. 2 (4.0%) had weakness in both upper extremities, 16(32.0%) had weakness in anyone upper extremity, 32 (64.0%) had no weakness. Paraesthesia was present in 34 subjects (68.0%) and absent in 16(32.0%). 10 subjects (20.0%) had Vertigo on neck movements / occasionally and absent in 40 subjects (80.0%). Regarding Headache 11(22.0%) belonged to grade H3, 7 (14.0%) in grade H2 and 32 (64.0%) in grade H0. 1 (2.0%) had greatly disturbed sleep (3-5 hours sleepless), 13 (26.0%) moderately disturbed sleep (2-3 hours sleepless), 17 (34.0%) had mildly disturbed sleep (1-2 hours sleepless), 9 (18.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 10 (20.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 1 belonged to 4th grade, 12 (24.0%) in 3rd grade, 27 (54.0%) in 2nd grade, 4 (8.0%) in 1st grade and 6 (14.0%) in 0 grade. Regarding painful/ restricted movements of neck 19 (38.0%) belonged to 6th grade, 5 (10.0%) in 5th grade of, 8 (16.0%) in to 4th grade, 9 (18.0%) in 3rd grade, 4 (8.0%) in 2nd grade, 4 (8.0%) in 1st grade and 1 (2.0%) in 0 grade. 1 (2.0%) had reduced sensation and 49 (98.0%) had normal sensation.

Mid test

In Control Group among 50 subjects 31 subjects (62.0%) had mild pain, 10 (20.0%) had moderate pain and 9 (18.0%) had no pain. 9 (18.0%) had mild stiffness, and 41(82.0%) had no stiffness. Regarding radiation of pain 4 subjects (8.0%) belonged to grade R2, 32(64.0%) in grade R1, 1(2.0%) in grade R4 and 13(26.0%) in grade R0. 1 subject (2.0%) had weakness in both upper extremities, 5 (10.0%) had weakness in anyone upper extremity and 44 (88.0%) had no weakness. Paraesthesia was present in 21 subjects (42.0%) and absent in 29 (58.0%). Vertigo was present on neck movements / occasionally in 6 (12.0%) and absent in 44 subjects (88.0%). 1 subject (2.0%) belonged to grade H2, 8 (16.0%) in grade H1 and 41

(82.0%) in grade H0. 2 subjects (4.0%) had mildly disturbed sleep (1-2 hours sleepless), 26 (52.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 22 (44.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 3 subjects (6.0%) belonged to 2nd grade, 31 (62.0%) in 1st grade and 16 (32.0%) in 0 grade. Regarding painful/ restricted movements of neck 1 subject (2.0%) belonged to 4th grade, 9 (18.0%) in 3rd grade, 19 (38.0%) in 2nd grade, 19 (38.0%) in 1st grade and 2 (4.0%) in 0 grade. 2 (4.0%) had reduced sensation and 48 (96.0%) had normal sensation.

In Trial Group among 50 subjects 13 (65.00%) reported with mild pain and 7(35.0%) with no pain. 10 (20.0%) reported with mild stiffness and 40 (80.0%) had no stiffness. Regarding radiation of pain 5 subjects (10.0%) belonged to grade R2, 33(66.0%) in grade R1, 1(2.0%) in grade R3 and 11(22.0%) in grade 0. 10 subjects (20.0%) had weakness in anyone upper extremity and 40 (80.0%) had no weakness. Paraesthesia was present in 29 subjects (58.0%) and absent in 21 (42.0%). Vertigo was present on neck movements / occasionally in 6 subjects (12.0%) and absent in 44 subjects (88.0%). 1 subject (2.0%) belonged to grade H2, 17 (34.0%) in grade H1 and 32 (64.0%) in grade H0. 4 subjects (8.0%) had mildly disturbed sleep (1-2 hours sleepless), 32 (64.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 14 (28.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 6 (12.0%) belonged to 2nd grade, 36(72.0%) in 1st grade and 8 (16.0%) in 0 grade. Regarding painful/ restricted movements of neck 2 subjects (4.0%) belonged to 4th grade, 11 (22.0%) in 3rd grade, 21 (42.0%) in 2nd grade, 14 (28.0%) in 1st grade and 2 subjects (4.0%) in 0 grade. 1 (2.0%) had reduced sensation and 49 (98.0%) had normal sensation.

Post test

In Control Group among 50 subjects 7 subjects (14.00%) had mild pain and 43 (86.0%) had no pain. 3 (6.0%) had mild stiffness and 47(94.0%) had no stiffness. Regarding radiation of pain 11 subjects (22.0%) belonged to grade R1, 1(2.0%) in grade R3 and 38(76.0%) in grade R0. 3 subjects (6.0%) had weakness in anyone upper extremity and 47 (94.0%) had no weakness. paraesthesia was present in 6 subjects (12.0%) and absent in 44 (88.0%). all 50 subjects (100.0%) vertigo was absent. 1 subject (2.0%) belonged to grade H1 and 49 (98.0%) in grade H0. 7 subjects (14.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 43 (86.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 5 (10.0%) belonged to 1st grade and 45(90.0%) in 0 grade. Regarding painful/ restricted movements of the neck 3 (6.0%) belonged to 2nd grade, 28 (56.0%) in 1st grade and 19 (38.0%) in 0 grade. 1 (2.0%) had reduced sensation and 49 (98.0%) had normal sensation. In Trial Group among 50 subjects, 1 subject (2.0%) reported with mild pain and 49 (98.0%) had no pain. all 50 subjects (100.0%) had no stiffness. Regarding radiation of pain 7 subjects (14.0%) belonged to grade R1 and 43 (86.0%) in grade 0. All 50 subjects (100.0%) had no weakness. Paraesthesia was present in 4 subjects (8.0%) and absent in 46 (92.0%). 2 subjects (2.0%) had Vertigo on neck movements / occasionally and absent in 48 subjects (96.0%). 1 subject (2.0%) in grade H1 and 49 (98.0%) in grade H0. 9 subjects (18.0%) had slightly disturbed sleep (less than 1 hour sleepless) and 41(82.0%) had no sleeplessness. Regarding Tenderness over cervical spine region 1 (16.0%) belonged to 1st grade and 49 (84.0%) in 0 grade. Regarding painful/ restricted movements of neck 5 (10.0%) belonged to 2nd grade, 19 (38.0%) in 1st grade and 26 (52.0%) in 0 grade. 1 (2.0%) had reduced sensation and 49 (98.0%) had normal sensation. Group A depicted highly significant (p< o.oo1)) results in neck pain, neck stiffness, radiation of pain, paraesthesia in upper extremities, headache, sleeplessness, tenderness over cervical spine region, movements of neck and insignificant results in weakness in upper extremities, vertigo and sensory loss.

Group B depicted highly significant (p< o.oo1)) results in neck pain, neck stiffness, radiation of pain, weakness in upper extremities, paraesthesia in upper extremities, vertigo, headache, sleeplessness, tenderness over cervical spine region, movements of neck and insignificant results in sensory loss. After the completion of the study, the result obtained regarding

the overall assessment showed better results in Group B (CC=0.529) than Group A (CC=0.389) with high contingency coefficient value. In Group A (Control group), the result obtained regarding the overall assessment showed complete relief in 11 subjects (22.0%), marked improvement in 16 (32.0%), Moderate improvement in 9 (18.0%) and mild improvement in 14 (28.0%). In Group B (Trial group), the result obtained regarding the overall assessment showed complete relief in 14 subjects (28.0%), marked improvement in 22 (44.0%) and Moderate improvement in 14 (28.0%). The result obtained regarding the overall assessment also showed highly significant results in both groups with p value 0.000.

DISCUSSION

The treatment modalities described in *Ayurveda* for *Greeva Asthigatavata* includes the *Upakramas* mentioned in *Vatavaydhi* and specific modalities mentioned for *Asthigatavata. Nasyakarma* as indicated in *Vatajanya Urdhwajatrugta Vyadhis*. *Greevabasti* acts as *Sthanika Snigdha Sweda*. Ingredients of *Karpasasthyadi Taila* have *Madhura, Tikta, Kashaya Rasa (Kulattha, Tila Taila, Punarnava, Shigru, Kusta), Katu Rasa (Chavya, Pippalimoola, Satahwa, Nagara, Sarsapa), Snigdha Guru Guna (Karpasasthi, Balamoola, Masha, Tila Taila, Aja Ksheera), Ushna Veerya (Devadaru, Rasna, Kustha, Sarsapa, Nagara, Satahwa, Pippalimoola, Shigru), Madhura Vipaka* and *Vata Kapha hara* property. All the ingredients are predominantly *Vatahara*. It has *Asthi Poshaka, Vedana Sthapaka* and *Vata Kapha Pradhana Tridoshahara* property which have essentially helped in *Poshana of Greevasthi* and in reduction of signs and symptoms. This might be the reason to get better results in Group B. Ingredients of *Mahamasha Taila* does *Dhatu Poshana, Vedana Sthapana and Asthi Poshana*. *Astavarga Kashaya* is a *Vatahara Kashaya* which reduces *Asthi Sandhishoola*.

CONCLUSION

On the basis of concepts, analysis and clinical observations made in this study, the following conclusions were drawn. Cervical disc disease is emerging as one of the most common diseases especially of the general population. It is commonly seen in society as a prominent problem. The prevalence of this disease has been expected to be increasing due to improper lifestyle, poor working, sleeping and sitting postures. It is an age-related degenerative disorder. Pathology generally starts at C5-6 & C6-7 (More susceptible at C5-6) Vertebrae and gradually degenerates the annulus fibrous and reduces inter vertebral disc space and formation of osteophyte presenting with Neck pain, Neck stiffness, Radiation of pain, Headache, Restricted movements of Neck, Paraesthesia, Weakness, Sensory loss in upper limb and Vertigo . There is no classical disease which can be equated precisely with Cervical Spondylosis but on the basis of core pathogenesis, this condition can be correlated to *Greeva Asthigatavata*. *Greeva Asthigatavata* is a variety of *Gatavata,* a type of *Vatavyadhi*, characterized by cracking type of pain in the bones and joints, piercing pain in the joints, diminution of muscle-tissue and strength, insomnia and constant pain. Being a type of *Vatavyadhi*, general *Vata* provocating factors are accepted as *Nidana*. *Vyana Vayu* and *Shleshaka Kapha* are essential components to produce *Greeva Asthigatavata*. The *Dushyas* such as *Asthi, Mamsa, Majja*; *Srotas* such as *Astivaha, Mamsavaha* and *Majjavaha* plays an important role in the pathology of the disease *Greeva Asthigatavata*. Disintegration of *Samprapti* is *Chikitsa* but in disorder like Cervical Spondylosis age related changes are present, complete reversal is not possible. Aim of the management is to check neurological deterioration, symptomatic relief, prevent further progression and to develop a feeling of well-being. *Karpasasthyadi Taila* explained in *Taila Prakarana* of *Sahasrayoga*, is a formulation indicated in *Sarva Vatarogas* was used in the study for the management of *Greeva Asthigatavata* as it is a *Vatavyadhi*. Also the *Rasa, Guna, Veerya, Vipaka*, and *Doshaghnata* of individual ingredients and the formulation as a whole was analyzed and hypothesized that it is having *Vedana Sthapaka*, *Asthi Poshaka*, *Vata Doshahara* property which is mainly

required in the *Samprapti Vighatana* of the disease *Greeva Asthigatavata*. So, this formulation was selected as a trial in the present study, *Greevabasti* and *Astavarga Kashaya* (oral administration) was taken as a control. This is a controlled clinical study, conducted on 100 subjects with 50 subjects in each group. In the study it was observed that trial Group (Group B) showed clinically and statistically highly significant results; reduction of the Neck pain, Radiation of pain, Paraesthesia in upper extremities, Vertigo, Headache, Sleeplessness, Tenderness over Cervical region, Weakness in upper extremities, Headache and improvement in neck movements showed highly significant result with p value 0.000; showed highly significant result in reduction of Neck stiffness with p value 0.002; showed highly significant result in reduction of Vertigo with p value 0.048 and showed no significant result in reduction of sensory loss with p value 0.813. Control group (Group A) showed clinically and statistically highly significant result in reduction of the Neck pain, Radiation of pain, Paraesthesia, Headache, Sleeplessness, Tenderness over Cervical region, improvement in neck movements with p value 0.000; showed significant result in reduction of Neck stiffness (p value 0.002), Weakness (p value 0.226); showed no significant result in reduction of Vertigo (p value 0.087) and Sensory loss (p value 0.141). On comparing the overall effect of the study, trial group (Group B) showed better results than control group (Group A). Hence, *Karpasasthyadi Taila* has a better role in the management of *Greeva Asthigatavata*.

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Table 1: Showing result on overall assessment

			Groups		Total
			Control group	**Trial Group**	
Overall Assessment	Complete relief	Count	11	14	25
		% of group	22.0%	28.0%	2.50%
	Marked improvement	% of group	16	22	38
			32.0%	44.0%	38.0%
	Moderate improvement	count	9	14	23
		% of group	18.0%	28.0%	23.0%
	Mild improvement	count	14	0	14
		% of group	28.0%	0.0%	14.0%
	Insignificant improvement	count	0	0	0
		% of group	0.0%	0.0%	0.0%
Total		count	50	50	100
		% of group	100.0%	100.0%	100.0%

Table 2: Contingency coefficient value of Group A and Group B

SYMPTOMS	**GROUP A Contingency coefficient value**	**GROUP B Contingency coefficient value**
Neck Pain	0.651	0.705
Neck Stiffness	0.264	0.234
Radiation of pain to upper limb	0.540	0.567
Weakness of upper limb	0.137	0.277
Paraesthesia of upper limb	0.389	0.489
Vertigo	0.180	0.201
Headache	0.297	0.464
Sleeplessness	0.492	0.530
Tenderness	0.638	0.694
Neck movements (painful/ restricted)	0.649	0.653
Sensory loss of upper limb	0.053	0.000

Symptoms Scorings:

Neck Pain:

N0 – No Pain

N1 – Mild Pain occasional/ intermittent Relieved on its own/rest

N2 – Moderate Pain, frequent pain, Relieved after taking analgesics

N3 – Severe Pain, not tolerable, not relieved fully Even after taking analgesics

Stiffness:

S0 – No Stiffness

S1 – Mild Stiffness

S2 – Moderate Stiffness

S3 – Severe Stiffness

Radiation of Pain:

R0 – No radiation

R1 – Radiation of pain from neck to one arm, occasionaly

R2 - Radiation of pain from neck to arm, continuously

R3 - Radiation of pain from neck to both arm, occasionaly

R4 - Radiation of pain from neck to both arm, continuously

Weakness:

W0- No weakness

W1 – Weakness in anyone upper extremity

W2 - Weakness in both upper extremities

Parasthesia:

PA0 – Absent

PA1 – Present

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Vertigo:
V0 – Absent
V1 – Present on neck movements / occasionally present
V2 – Present constantly
Headache:
H0 – I have no headaches at all
H1 – I have slight headaches which come infrequently
H2 – I have moderate headaches which come infrequently
H3 – I have moderate headaches which come frequently
H4 – I have severe headaches which come frequently
H5 – I have headaches almost all the time
Sleeping:
SL0 – I have no trouble sleeping
SL1 – My sleep is slightly disturbed (less than 1 hour sleepless)
SL2 - My sleep is mildly disturbed (1-2 hours sleepless)
SL3 - My sleep is moderately disturbed (2-3 hours sleepless)
SL4 - My sleep is greatly disturbed (3-5 hours sleepless)
SL5 - My sleep is completely disturbed (5-7 hours sleepless)
Tenderness over Cervical region:
T0 – No tenderness
T1 – Patient complains of tenderness
T2 - Patient complains of tenderness and winces
T3 – Patient winces and withdraws the affected part
T4 – Patient will not allow palpation of affected part
Movements of Neck- Painful or Restricted: (Flexion, Extension, Right Lateral Flexion, Left Lateral Flexion, Right Lateral Rotation, Left Lateral Rotation)
M0- All the 6 movements are painless or not restricted
M1 – Any 1 movement is painful or restricted
M2 - Any 2 movements are painful or restricted
M3 - Any 3 movements are painful or restricted
M4 - Any 4 movements are painful or restricted
M5 - Any 5 movements are painful or restricted
M6 - Any 6 movements are painful or restricted
Sensory Loss:
SL0 – Normal Sensation
SL1 – Reduced Sensation
SL2 – No Sensation

Source of Support: Nil
Conflict of Interest: None Declared

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