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An open label pilot study to evaluate efficacy of Ayurvedic intervention in the management of *Greevagatvata* W.S.R.T. cervical spondylosis

¹Vd. Pragati Katariya, ²Vd. Kanika Aggarwal, ³Vd. Vinod Barwal, ⁴Vd. Sumit Srivastava

¹Associate Professor, Department of Kaya Chikitsa, Shri Dhanwantry Ayurvedic College & Hospital, Chandigarh, India
 ²Associate Professor, Department of Panchkarma, Shri Dhanwantry Ayurvedic College & Hospital, Chandigarh, India
 ³Associate Professor, Department of Kaumarbhritya, Shri Dhanwantry Ayurvedic College & Hospital, Chandigarh, India
 ⁴Professor & HOD, Department of Rog Nidana & Vikriti Vigyan, Shri Dhanwantry Ayurvedic College & Hospital, Chandigarh, India

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Abstract

Cervical Spondylosis is one among the degenerative disc ailments. According to a recent study, the middle-aged population shows increased incidence of degenerative disc changes. This may be because of faulty regimen and lifestyle. The study conducted here is a combination of different *Ayurvedic* modalities to get maximum relief in a minimal period. More attentiveness is on the *Bahi Parimarjana chikitsa* (External purification therapy) on the affected part that being *Greeva* (neck) and *Manya pradesha* (cervical spine region). At the initial stage because of *Kapha avarana (Kapha* obstruction) there is stiffness and later when it becomes chronic due to improper usage of cervical spine, *Vata* alone leads to *Dhatukshaya* (tissue degeneration) because *Dhatukshaya* is an integral character of *Vatadosha* and *Asthi* is always its victim. Keeping this in mind, patients were categorized in 3 groups and accordingly treatment was chosen.

Keywords: Cervical spondylosis, Greevagatvata, Basti karma, Nasya, cervical spine

Introduction

Today is an era of sophisticated and fast life; everybody is busy and leading a stressful life. So, to meet every requirement of life there is a vigorous competition and consequently there is change in life style leading to several disharmonies in the biological system of humans. Advancement of busy professional and social life, improper sitting postures in work places, continuous work in only one posture and over exertion, jerky movements during travelling and sports; all these factors create undue pressure and stress injury to the spine (cervical) and play a major role in producing diseases like Cervical Spondylosis. Cervical Spondylosis is the most common disorder of the cervical spine. It is caused by degenerative changes in the vertebrae and intervertebral discs that occur as a result of constant improper stress on the cervical spine, injury, ageing, rheumatoid disease etc.

There is no exact clinical entity mentioned in *Ayurvedic* Classics as Cervical Spondylosis, however it can be considered as *Greevashoola* or *Greevagatavata* because of its pathogenesis:

- Shoshana (withering) of Asthi Dhatu (in Cervical Region).
- Dushana of Vata.
- Rooksha (drying) guna of Vata increases.
- Avarana of Shleshmaka Kapha and its Shoshana by Pravriddha Vata.

Thus, the clinical aspects of *Upstambhit Vata-vyadhi* can be implemented in the disease, Cervical Spondylosis. It leads to pain and stiffness in neck, radiating pain into arm, headache, vertigo, giddiness, paraesthesia, numbness, etc. It disturbs the daily routine and overall life of the patient. Though it is not immediately fatal, it causes severe complications in later stage. It cripples the patient to an extent that there is dependency on others. The individual cannot perform day to day work properly because of the severity of pain leading to a decreased quality of life ^[1].

Modern medical science provides both conservative and surgical treatment for Cervical Spondylosis but nothing has been satisfactory to date. Alternative medical sciences, like *Ayurveda* aims to present a better remedy for this condition, which is the purpose of this paper.

Materials and Methods

Study design: An open label pilot study.

Source of data: Patients were selected from O.P.D & I.P.D of S.D.A.C. & H, Chandigarh having classical signs & symptoms of Cervical spondylosis as well as fulfilling inclusion & exclusion criteria.

Sample size: Total 7 patients were registered, and all completed the trial.

Inclusion criteria: Patients diagnosed as suffering from Cervical Spondylosis based on classical signs and symptoms were included in the study.

Exclusion criteria: Patients below age 20 or more than 60 years and patients who had history of fracture, surgical emergencies and systemic diseases were excluded from the study. Patients who are not fit for the *snehana, swedana, basti* or *nasya* were also excluded from the study.

Assessment criteria: A special questionnaire was prepared for the study incorporating all the relevant points from both Ayurvedic and Modern views along with neck disability index.²

Investigations (X-ray, MRI, routine blood investigations like CBC, LFT, RFT, Blood Sugar).

Categories for Treatment Purpose:

Patients were categorized under 3 categories for treatment purpose according to disability index as follows:

Categories	Disability Index Score	Disability Level
Category 1	0-4; 5-14	No or Mild
Category 2	15-24	Moderate
Category 3	25-34	Severe

NOTE	\rightarrow	Patients	having	disability	index	score	35-50	_
(Comple	ete	Disability	y) were	excluded				

Categories	Shodhana Chikitsa	Shamana Chikitsa	Other T/t
Category 1: Muscle spasm only, no bony involvement	 Snehana³ (with Mahvishgarbha Taila) Swedana⁴ (Churna Pinda Sweda Niruha Basti⁵ (with Erandmooladi Kwath) Matra Basti⁶ (with Mahanarayan Taila) Nasya⁷ (with Dhanwantram 101 Taila) 	 Vishtinduk Vati ^[8] (62.5-125 mg) Yograj Guggulu ^[9] (500 mg-1gm) Rasnasaptak Kshaya ^[10] (15-30 ml) Praval Pishti ^[11] (125-250 mg) 	 Nidana parivarjana Dincharya Regimen Pathya sevan (Aaharaj- Viharaj- Mansik)
Category 2: Muscle spasm, early degenerative changes	 Snehana (with Karpasthyadi Taila) Swedana (Patra Pinda Sweda Niruha Basti (with Erandmooladi Kwatha) Matra Basti (with Sahacharadi Taila) Nasya (with Dhanwantram 101 Taila) 	 Mahayograj Guggulu ^[12] (250- 500 mg) Rasraj rasa ^[13] (125-250 mg) Dashmoola Arishta ^[14] (15-20 ml) Shankh Bhasma ^[15] (125-250 mg) 	 Nidana parivarjana Dincharya Regimen Pathya sevan (Aaharaj- Vihara- Mansik)
Category 3: Progressive degenerative changes with nerve compression	 Snehana (with Mahanarayan Taila) Swedana (Nadi Swedana) Niruha Basti (with Dashmooladi Kwatha) Matra basti (with Ksheerbala Taila) Nasya (with Ksheerbala 101 Taila) 	 Mahavata Vidhwansan rasa ^[16] (62.5-125 mg) Ekangveer rasa ^[17] (125-375 mg) Maharasnadi Kshaya ^[18] (15-30 ml) Cap. Ksheerbala 101 (6-18 drops) Swarna Bhasma ^[19] (15-30 mg) 	 Nidanaj parivarjana Dincharya Regimen Pathya sevan (Aaharaj- Viharaj- Mansik)

Treatment Plan (as per categories)

Note \rightarrow

- 1. *Rasaushadhis* were grinded together and divided into 42 doses and given twice a day.
- 2. Anupana for shamana aushadhi was koshna jala
- 3. *Lepana, Avgahana, Agnikarma* and *Raktamokshana* done according to condition of the patients in all 3 categories.

Dincharya Regimen of *Greevagatvata* Patients at Sdach 5:30 AM \rightarrow Wake up time

6:00 AM \rightarrow Dant Dhawan, Jivha nirlekhan, Kaval, Gandush, Pratimarsha Nasya, Dhoompana.

7:00AM \rightarrow Yogasana (as per category)

8:00AM \rightarrow Niruha Basti (as per category)

8:30 AM → Breakfast

9:30AM → Shaman Aushadhi (as per category)

- 11:00 AM to 2:00 PM \rightarrow Snehan Swedan (as per category) 2:00 PM \rightarrow Lunch
- 3:00 PM → Shaman Aushadhi (as per category)
- 3:00PM to 3:30 PM \rightarrow Vishram Kala

3:30 to 4:30 PM \rightarrow Physiotherapy and Exercises (as per category)

4:30PM to 5:30 PM \rightarrow Parisheka (on affected region)

- 5:30PM \rightarrow Evening Snacks
- 6:00PM to 6:30PM \rightarrow Walk in herbal garden
- 6:30PM to 7:30PM \rightarrow Meditation and music therapy
- 7:30 PM to 8:00PM \rightarrow Dinner
- 8:00 PM to 8:30 PM \rightarrow *Matra Basti* (as per category)

8:30 to 9:00PM \rightarrow Shaman aushadhi (as per category), Karnapuran and Padabhyanga 9:00PM \rightarrow Bed time.

Note \rightarrow

- 1. *Dincharya* was followed as per category 1/2/3, and flexibility in *dincharya* was adopted as per age group.
- 2. This daily regimen was followed for first seven days after that *Basti* was stopped.
- 3. For next seven days, rest of the regimen was continued as such.
- 4. After that, for next seven days *pratimarsha nasya* was replaced by *Marsh nasya*.
- 5. Shaman aushadhi was continued for 21 days

Pathya Sevana (Aaharaj – Viharaj-Mansik): Aharaj

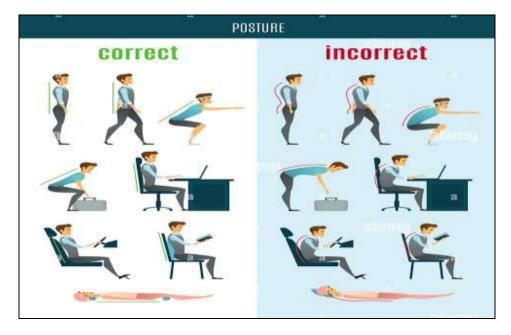
- Petitte Yellow Lentiles (*Dhuli moong*), Green gram (*Chhilka moong*), Wheat, *Raagi*, Red rice, Bottle gourd (*Ghiya*), Round gourd (*Tinda*), Bitter gourd (*Karela*), Sponge gourd (*Tori*), Pointed gourd (*Parval*), Spinach, Fenugreek (*Methi*), Turnip (*Shalgam*), Ginger, Garlic etc.
- Milk, Mamsa Rasa (Meat Soup), Coconut Water etc.
- Apple, Pomegranate, Papaya, Chikoo, Resins, Dates etc.

Viharaj

Correct Firmness of mattress

	CHOOSE THE RIGHT PILLOW	
*	*	2
8	*	
TOOLOW	TOO HGH	GOOD BACK PDSITION
	CHOOSE THE RIGHT MATTRESS	TOD HARD
		TOD SOFT
		RIGHT FIRMINESS

• Correct Posture (keeping the spine straight) while sitting, standing, and walking.



- Light walk (*Shatpawali*)
- Mild to moderate exercises (Sukshma Vyayama)
- Muscle strengthening exercises (*Vyayama*)
- Sleeping (9-10PM) and waking up (5-6AM) early (*Brahm muhurat ujagare*)

Mansik

• Sound Sleep of 8 to 10 hrs

- Meditation (like *shavasana*, *yognidra*, *dhyana* etc.)
- Pranayama (Anuloma -viloma, Bhramari etc.)
- Music therapy (listening to soothing music like *OM* chanting, *Gayatri mantra*)
- Being in company of wise and positive people (*Satsang*, spending time with people having positive attitude and mindset)

Supportive Therapy

A. Yogasana

Category 1	Category 2	Category 3
Yogic Breathing	Yogic Breathing	
• Sukshma vyayama	• Sukshma vyayama	• Yogic breathing
- Shoulder movement	- Shoulder movement	• Sukshma vyayama
- Neck forward and backward	- Neck forward and backward	- Shoulder movement
- Arms rotation -Arms flexion and extension	- Arms rotation (light)	- Neck backward
- Waist rotation	- Arms stretch upward and forward	- Wall climbing (with fingers)
- Feet extension and flexion	- Feet extension and flexion	- Feet extension and flexion
- Feet rotation and stretch	- Feet rotation and stretch	- Feet rotation and stretch
• Pawanmuktasana (without neck elevation)	• Titaliasana	• Tadasana (on chair)
• Tadasana	• Tadasana	• Shavasana
• Ardhachakrasana	• Joewalk	• Makrasana
Cat and cow pose	• Markatasana	• Markatasana
• Makarasna	• Full shalbhasana	• Half bhujanga asana
• Setubhandhasana(Full)	• Setubandhasana(half)	• Half shalbhasana
Veerbhadrasana	• Pawanmuktasana (without neck elevation)	
• Survanamaskar	• Full bhuianga	

B. Physiotherapy & exercises

Categories	Region	Electrotherapy/Other Rx	Exercise therapy
Category 1	Neck	 Short wave diathermy (SWD) Hot pack Ultrasonic Massage (USM) TENS/IFT 	 Trapezius stretches SCM Stretch Shoulder shrugs Neck isometrics Pectoral stretch
Category 2	Neck	 Short wave diathermy (SWD) Hot pack Ultrasonic Massage (USM) TENS/IFT 	 Trapezius stretches SCM Stretch Shoulder shrugs Neck isometrics Pectoral stretch
Category 3	Neck	 Cryotherapy/Hot pack MFR (Manual fascia Release) TENS/IFT Ultrasonic massage Cupping therapy ICT 	 Trapezius stretches SCM Stretch Shoulder shrugs Neck isometrics Nerve glides Nerve stretch Scapular stabilization Exercises Pectoral stretch

Observations

• There were 2 males and 5 females.

Gender	Percentage
Male	28.571%
Female	71.428%

 The age group between 25-35yrs was 4, 36-45yrs was 2 & 46 - 55yrs was 1.

Age group	Percentage
25-35yrs	57.142%
36-45yrs	28.571%
46-55yrs	14.285%

• Vegetarians were 2 & non-vegetarians were 5.

Diet	Percentage
Vegetarians	28.571%
non-vegetarians	71.428%

• Hindus were 3, Muslims were 2, Christian was 1 & Jain was 1.

Caste	Percentage
Hindu	42.851%
Muslim	28.571%
Christian	14.285%
Jain	14.285%

• Based on occupation working people were 4, sedentary was 1& heavy labour worker were 2 in number.

Occupation	Percentage
Working population	57.142%
Sedentary	14.285%
Labour worker	28.571%

• Most symptoms were present in all patients i.e., manya shoola, manya sthambha, bahu shoola, greeva shoola and amsa (shoulder) shoola were present in all patients (100%). Nidra nasha (insomnia), anga marda (body pain), klama (fatigue) were second major clinical symptoms present in 85.714% of patients. Aruchi (loss of appetite), gourava (heaviness in body) and suptata (numbness) was observed in 5 patients (71.428%), and adhmana (bloating) was observed in 4 patients (57.142%).

Presenting Symptoms	
Manya shoola, manya sthambha, bahu shoola, greeva shoola and amsa (shoulder) shola	100%
Nidra nasha (insomnia), anga marda (body pain), klama (fatigue)	85.714%
Gourava (heaviness in body) and suptata (numbness)	71.428%
Adhmana (bloating)	57.142%

• Among 7 patients 5 patients were of *vata kapha prakriti* & 2 were of *vata pitta prakriti*.

Prakriti	Percentage
Vata Kapha Prakriti	71.428%
Vata Pitta Prakriti	28.571%

• Among 7 patients 6 patients were non-traumatic and 1 had previous history of injury.

Traumatic History	Percentage
Present	14.285%
Absent	85.714%

Results

Results were analysed based on Neck disability index before and after the treatment.

Effect of therapy in Neck Disability Index: Radiological study does not reveal any significant changes in post treatment images. This conclusion was drawn after evaluating the results by Neck disability index.

Overall effect: Overall results show that among 7 patients, 4 patients showed marked improvement, 2 showed moderate improvement and 1 showed mild improvement.

Sr. No.	Neck Disability Index Before Treatment	Neck Disability Score After Treatment	Overall Improvement	Improvement Scale
Patient 1	25	4	84%	Marked
Patient 2	32	16	50%	Moderate
Patient 3	30	5	83.34%	Marked
Patient 4	26	7	73.08%	Moderate
Patient 5	31	5	83.88%	Marked
Patient 6	30	16	46.67%	Mild
Patient 7	28	6	78.58%	Marked

Improvement Scale	Percentage
No Improvement	Below 24.9%
Mild Improvement	25-49.9%
Moderate Improvement	50-74.9%
Marked Improvement	Above 75%

Discussion

Cervical Spondylosis is one of the degenerative disorders of the spine and is an affliction in the middle aged due to provocation factors such as improper stress on spine, irregular postures in working places, and bad food habits. Degeneration of the cervical disc demands *shodhana*, *shamana* and supportive therapy. Inter vertebral disc is a cushion like structure that provides protection to vertebral bodies from friction. Degeneration in the disc leads to undue pressure over the nerve roots. Cervical Spondylosis is characterized by degeneration, disc protrusion, and consequent pressure on the nerve roots of the cervical and brachial plexus.

Shoshana is an integral character of Vata dosha with associated contribution of Kapha and Pitta dosha. Shoola is Vata pradhana whereas sthambha, gourava are character of Kapha dosha. In cervical spondylosis, Upasthambita vata dosha vikriti lakshanas are seen more however Kaphanubandhi is associated some times. General line of the treatment of Vata vyadhi was adopted in the present study. Acharya Charaka mentioned Snehana, Swedana, Basti karma (Shodhana therapy) for the basic line of treatment of any Vatavyadhi. In the present study, Nasya was also adopted as Sthana vishesha chikitsa as indicated in Urdhwa jatrugata vyadhi vighatan²⁰.

Bahya snehana-swedana provide nourishment and lubrication to the structures of spine i.e., Snayu (ligaments), Sandhi (joints), Sira (blood vessels) and Marma points, relieve the heaviness, stiffness, spasm, and pain locally. It also increases joint mobility, reduces stress and fatigue.

Basti is said to be one of the highly effective treatment modalities for *Vataja* diseases. The drugs administered through *Basti* remain in the rectum and colon (*Pakwashaya*) and later absorbed into the body, thereby pacifying the *vata* dosha at its place of origin and nourishing the bones, muscles, and nerves of the whole body.

Nasya with oil helps in providing nourishment to brain, all sense organs and tissues of neck region thereby nourishing all the nerves and pacifying the *vata* dosha.

Shamana aushadhi (oral medication) revitalizes the body by treating imbalances and maintaining *Dhatusatmya*. It is a healing treatment. As per *Ayurveda*, a disease is caused when the central humours (chemical systems that govern our bodily functions) malfunction, and *Shamana* acts as the balm that rejuvenates and restores the balance.

- *Vishtinduka vati* acts as nervine tonic, its main indication is *jeerna vata-roga*. Its main ingredient is *kuchala* which has *balya* action on spine.
- *Yograj guggulu* acts on musculo-skeletal disorders. With its ingredients like *amalaki* and *ghrita* it has some amount of cell and tissue regeneration property. Also, it contains anti-inflammatory and analgesic herbs liker *rasna* and *guggulu*.
- *Rasnasaptak kashaya* is also useful in spine disorders as it promotes strength of bones and joints. It acts as excellent anti-inflammatory and analgesic medicine.
- *Praval pishti* as imbued with pure calcium is ultimate remedy for bone rejuvenation, it strengthens the bones and skeletal system and thus helps is degenerative disorders of bone.
- *Mahayograj guggulu* is very versatile medicine, useful in multiple disorders. It has anti-inflammatory,

analgesic, anti- arthritic properties so useful in its musculo-skeletal and nervous system disorders.

- *Rasraj rasa* is used to treat neuro-muscular conditions. With its key ingredient like *swarna bhasma*, it acts as *vata-shamak*, and nervine tonic.
- *Dashmoolarishta* also helps to restore bone health, acts as *vata-shamak*, helps to reduce inflammation, improves digestion, and acts as analgesic.
- *Shankha bhasma* is also good source of natural calcium, so strengthens the bones and acts as *vatanulomak*, anti-oxidant, anti-spasmodic, and digestive stimulant.
- *Maha vata vidhwansan rasa* acts on nervous system. It contains *kajjali* which is *rasayani* and *yogvahi, tamra bhasm* reduces radiating pain, *vatsanabh* reduces inflammation of nerves and acts as potent *shoolaghna* (analgesic). *Abhrak* and *tankan bhasma* are *balya* for nerves and *vatashamak*.
- Ekangveer rasa contains Kant loh- naga loh- vanga loh- tamra loh- abhrak loh- tikshana loh bhasma which act as bhrimhaniya, jeevaniya and rasayana, in vataj roga, bhrimhana is only shaman so all these ingredients help to do Vata Shaman and act well in radiating pain, tingling or numbness (nadi balya).
- *Maharasnadi Kwath* helps to suppress the inflammation, pain, and stiffness in joint. Its main ingredient is *Rasna* which is excellent *Vataghna*. It is also *deepana, pachana* and *shoolaghna* and is very useful in *jeerna* (chronic) *vatavikara*.
- Cap. *Ksheerbala* 101 provides *snehana* and *balya* effect and has all properties opposite to *vata dosha* thus helps in *vata shamana*. It has prime action on healing and nourishing degenerative bone tissue.
- *Swarna Bhasma* is used as anti-inflammatory and analgesic. Also, it is *rasayana* for chronic *vata* diseases, strengthens the musculoskeletal system and helps in tissue regeneration.

Pathya sevana- Aaharaj-Viharaj-Mansik and *Dincharya* provide a clear master plan for a holistic way of living. That helps the subject to live a disease-free long life and slow down the disease progression.

Supportive Treatment focuses on physical and mental rehabilitation of the patient which helps in increasing endurance and strength, and avoiding complications and recurrence of the disease. *Yogasana*, meditation, physiotherapy and proper exercises are beneficial for creating a healthy body as well as mind.

This concept of giving as much importance to 'maintenance' of health than treatment has earned a place even in WHO (World Health Organization) as the 'only' appropriate definition of health amongst all medical sciences.

Conclusion

Cervical Spondylosis is emerging as one of the most common diseases especially in urban population. The prevalence of this disease has been expected to increase due to improper lifestyle, poor working, sleeping, and sitting postures. Conclusive results from the present study show a combined effect of various *Ayurvedic Panchkarma* procedures along with *Shaman aushadhi*, and Supportive therapies like *yoga* and physiotherapy can offer benefits to reducing symptoms of Cervical Spondylosis. Along with the above therapies, postural corrections during work, sleep, travel and avoiding elevated cushions below the neck, coupled with regular exercises go a long way in preventing Cervical Spondylosis. So, a complete *Ayurvedic* treatment plan is very much effective in the management of *Greevagatavata* w.s.r.t. Cervical Spondylosis.

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