

Clinical Evaluation of *Nasya Karma* as a *Panchakarma*-Based Neurotherapeutic Intervention in Writer's Cramp: A Single-Case Study

**Renu Moond,<sup>1</sup> Karani Singh Shekhawat,<sup>2\*</sup> Anup Thakar,<sup>3</sup> Neha Tank<sup>4</sup>**

<sup>1</sup> PG Scholar, Dept of *Panchakarma*, <sup>2</sup> PG Scholar, Dept of *Rachana Sharir*, <sup>3</sup> Head of Department, Dept of *Panchakarma*, <sup>4</sup>Associate Professor, Dept of *Panchakarma*, Institute of Teaching and Research in Ayurveda (INI), Jamnagar, Gujarat, India.

### **ABSTRACT:**

Writer's cramp, a form of focal hand dystonia, presents as a task-specific movement disorder primarily affecting individuals involved in repetitive hand movements such as writing. It is characterized by involuntary muscle contractions, leading to abnormal postures and impaired motor control. While conventional treatment options offer limited symptomatic relief, Ayurveda provides a holistic approach rooted in balancing the *Doshas* and restoring neuromuscular coordination. The symptoms of *Kapha Aavruta Vyana Vayu* are very similar to those of Primary writer's cramp. Therefore, this study applies *Kapha Aavruta Vyana Vayu* treatment to writer's cramp. This case study outlines the effective Ayurvedic management of a 29-year-old male patient diagnosed with Primary writer's cramp, utilizing a *Panchakarma* treatment protocol. The therapeutic strategy primarily involved *Nasya* (the nasal administration of medicated oil), *Shiro Pichu* (Oil Retention on the Vertex of the Head), *Shamana Snehanpana* (oral administration of medicated ghee or oil), *Abhyanga* (a therapeutic massage), *Swedana* (a sudation therapy), and internal medication aimed at pacifying *Kapha Aavruta Vata dosha*, which is considered the predominant factor in neuromuscular conditions according to Ayurveda. This case highlights the potential of *Panchakarma* interventions as effective, non-invasive approaches for managing Primary writer's cramp and related movement disorders. The integrative Ayurvedic approach paves the way for additional clinical research and encourages collaboration across multiple disciplines.

**KEYWORDS:** *Kaphaaavrutayyanavayu*, *Nasyakarma*, *Siropichu*, Writer's cramp.

Received: 14.11.2025      Revised: 28.11.2025      Accepted: 02.12.2025      Published: 15.12.2025



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)  
© 2025 International Journal of AYUSH Case Reports | Published by Tanaya Publication, Jamnagar.

**QR Code**



DOI 10.70805/ija-care.v9i4.831

#### **\*Corresponding Author:**

**Dr. Karani Singh Shekhawat**  
PG Scholar, Dept. of *Rachana Sharir*,  
Institute of Teaching and Research in Ayurveda (ITRA),  
Jamnagar, Gujarat, India.  
Email: [karni.royal@gmail.com](mailto:karni.royal@gmail.com)

## INTRODUCTION:

Writer's cramp, also referred to as focal hand dystonia, is a movement disorder that occurs specifically during tasks requiring fine motor skills, such as writing, playing musical instruments, or typing for extended periods.<sup>[1]</sup> It presents with involuntary muscle contractions, unusual hand postures, and a progressive decline in motor control, resulting in considerable functional impairment and psychological distress. Despite advancements in neurorehabilitation, conventional treatment options i.e. Oral medications, botulinum toxin injections, and physical therapy often offer only limited and temporary relief, and their effectiveness can vary significantly. In Ayurveda, neuromuscular conditions are often linked to *Vata Vyadhi*, a disorder characterized by an aggravated *Vata Dosha*.<sup>[2]</sup> This imbalance negatively impacts neuromuscular coordination, affecting structures such as *Sira*, *Snayu*, and *Mamsa*, and resulting in symptoms like stiffness, tremors, and spasmodic movements. The Ayurvedic approach focuses not only on providing symptomatic relief but also on addressing the underlying causes of conditions through bio-cleansing therapies (*Panchakarma*) and rejuvenation treatments.

Among the *Panchakarma* therapies, *Nasya Karma* (administering medicated oil through the noses) particularly significant for treating *Urdhva Jatrugata Vikaras*, or diseases occurring head and neck region. The treatment addresses nerve issues related to the head and arms. When combined with *Abhyanga*(oleation), *Swedana*(sudation), and specific internal medications, *Nasya*, *Shiro Pichu* and *Shamana Snehapanam* can

help restore balance to an imbalanced *Vata Dosha* and enhance neuromuscular function.<sup>[3]</sup>

This paper details a single case study of a patient with Primary writer's cramp who was successfully treated using Ayurvedic interventions, particularly emphasizing the role of *Nasya* therapies. The case illustrates the relevance of the Ayurvedic model in addressing focal hand dystonia's and highlights the scope of Ayurveda in modern neurological rehabilitation.

## CASE REPORT:

A 29-year-old left-handed male, working as a doctor, presented with complaints of progressive difficulty in writing over the past 5 years. The patient reported involuntary cramping of the index finger while holding a pen, leading to illegible handwriting and an inability to sustain writing for more than a few minutes. He also experienced stiffness, mild pain, and a sense of muscular fatigue localized to the left hand and forearm during writing tasks. These symptoms were task-specific and did not manifest during other daily activities. There was no history of trauma, diabetes, or exposure to neurotoxic agents. The patient had previously consulted a homeopathy doctor and was diagnosed with Primary Focal Hand Dystonia (Writer's Cramp). He was prescribed medication, but reported minimal relief after 2 years of treatment. Disheartened by the lack of improvement, he sought Ayurvedic intervention.

Upon Ayurvedic examination, the patient was of *Kapha-Pitta Prakriti*, and symptoms were interpreted as *Kaphaavritta Vyana Vayu* with localized

*Vata dushti* in the *Manibandha Sandhi* (wrist joint) and metacarpophalangeal joint of left hand and rigidity of lumbricals & interossei muscles.<sup>[4]</sup> Clinical findings included Tremulous and jerky movements during writing, tightness and stiffness in the left wrist and left index finger, Slight reduction in grip strength, No sensory loss or muscle wasting.

Based on the classical Ayurvedic understanding of *Vata Vyadhi*, and after assessing the patient's *Agni* (digestive strength) and *Roga Arastha* (disease stage), a *Panchakarma* based treatment plan was formulated. The primary goals were to pacify *Vata*, enhance neuromuscular coordination, and promote local nourishment (*Brimhana Karma*).

## TREATMENT PROTOCOL AND PROCEDURES

Based on the *Ayurvedic* assessment, a *Kapha-Aavruta Vata Dosha* pacifying *Panchakarma* regimen was planned, with emphasis on *Nasya Karma*, *Siro Pichu*, *Abhyanga*, *Swedana*, and *Shamana Snehapanam*.<sup>[5]</sup> The treatment duration was 90 days, divided into preparatory procedures (*Purvakarma*), main *Panchakarma* therapies (*Pradhanakarma*), *Paschatkarma* i.e.- supportive *Shamana* medications (*Shamana Chikitsa*).<sup>[6]</sup> The protocol aimed to improve neuromuscular coordination, relieve stiffness, and restore hand function.

### A. *Nasya Karma* (Nasal Therapy):

*Brahmi Ghrita* (classical medicated oil) was selected for its proven efficacy in neurological and *Kapha-aavruta Vata* disorders.<sup>[7]</sup>

*Marsha Nasya* was administered for 21 days.

Dose: **1<sup>st</sup> day**- 8-8 drops in each nostril  
**2<sup>nd</sup> day**- 10-10 drops in each nostril  
**3<sup>rd</sup> to 21<sup>th</sup> day**-12-12 drops in each nostril, administered in the morning on an empty stomach.

Preceded by mild facial massage and **Nadi Swedana** (local steam to the face and neck region).

Post-procedure instructions included rest, avoidance of cold, loud speaking, remain awake at night, mental exertion and avoid *Vata* increasing food.

### B. *Shiro Pichu* (Oil Retention on the Vertex of the Head)

Oil Used: **Bala Taila** (*Guru* (Heavy), *Snigdha* (Unctuous), *Vata Dosha* pacifying)  
[8]

#### Procedure:

A sterile cotton pad was soaked in lukewarm *Bala Taila*.

Placed on the *Bregma* (*Adhipati Marma*) area.

Oil was replenished every 5–10 minutes to keep it moist.

**Duration:** 30-45 minutes daily, for 14 days.

### C. *Snehana* (Oleation Therapy):

*Sthanika Abhyanga* (local oil massage) using **Bala Taila** was given to the left hand, wrist, and forearm to relieve stiffness and enhance circulation daily for 14 days.<sup>[9]</sup>

### D. *Swedana* (Sudation Therapy):

Following *Abhyanga*, **Nadi Swedanam** (local steam therapy) was performed to promote sweat and relax the neuromuscular tissues.<sup>[10]</sup>

### E. *Shamana Snehapanam* (oral administration of medicated ghee or oil)<sup>[11]</sup>

**Sneha Used: *Gandharvahastadi Eranda***

**Tailam** with milk (Known for its Purgative (*Rechana*), *Vata*-pacifying (*Vatanulomana*), Anti-inflammatory (*Shothabara*), Analgesic (*Shoolabara*) *Karma*).<sup>[12]</sup>

**Dose-** 10 ml oil with 100 ml warm milk once daily, early morning on empty stomach

**Duration-** 14 days

**Observation-** Better sleep, reduced anxiety, improved hand control and writing coordination.

**Lifestyle and diet recommendations:**

A warm, easily digestible diet that pacifies *Vata Dosha*, such as soups, *Ghrita* (ghee), warm milk, and *Mudga* (moong) dal *Krusara* (Khichdi), is recommended. Avoid *Shita Vayu* (cold exposure), *Shushka Dravya* (dry foods), excessive screen time, and stress. It is recommended to engage in gentle hand exercises and *Mudras*, following guidance, after completing therapy.<sup>[13]</sup> Examination of Patient is shown in [Table1] [Table2] [Table3]

**Table -1 Ashthavidha Pariksha (Eight folds of examinations)**

Sr. No.	Name of Pariksha	Observation
1.	<i>Nadi</i> (Pulse rate)	72 times/min, <i>Kapha Pitta</i>
2.	<i>Mutra</i> (Frequency of micturition)	7-10 times/day, <i>Samyaka</i>
3.	<i>Mala</i> (Bowel)	Regular, <i>Prakruta</i>
4.	<i>Jihva</i> (Tongue)	<i>Niram</i>
5.	<i>Shabda</i> (Sound)	<i>Spasta</i>
6.	<i>Sparsha</i> (Touch)	<i>Anushnasheet</i>
7.	<i>Drik</i> (Vision)	<i>Prakruta</i>
8.	<i>Akriti</i> (Body built)	<i>Madhyam</i>

**Table -2 Dashavidha Ataur Pariksha (Ten folds of examination)**

Sr. No.	Name of Pariksha	Observation
1.	<i>Prakruti</i> (Constitution of the Patient)	<i>Kapha-Pitta</i>
2.	<i>Vikruti</i> (Pathological variations)	<i>Kaphaavritta Vyana Vayu, Sira, Kandra</i>
3.	<i>Sara</i> (Quality of tissues)	<i>Madhyam</i> (Average)
4.	<i>Samhanana</i> (Built of the body)	<i>Madhyam</i> (Average)
5.	<i>Pramana</i> (Anthropometric measurements)	Height- 178 cm, Weight- 86.5 kg
6.	<i>Satmya</i> (Adaptability)	<i>Madhyam</i> (Average)
7.	<i>Satva</i> (Mental strength)	<i>Madhyam</i> (Average)
8.	<i>Aahara Shakti</i> (Food intake & digestion capacity)	<i>Madhyam</i> (Average)
9.	<i>Vyayam Shakti</i> (Exercise capacity)	<i>Madhyam</i> (Average)
10.	<i>Vaya</i> (Stage of age)	<i>Yuva Arastha</i> (Young age)

**Table -3: Locomotory examination**

Inspection	Palpitation	Range Of Movement
<ul style="list-style-type: none"> <li>Tremors in left hand</li> <li>No scar &amp; swelling observed</li> </ul>	<ul style="list-style-type: none"> <li>No tenderness</li> <li>Normal temperature</li> </ul>	<ul style="list-style-type: none"> <li>No restricted movement</li> </ul>

**Table -4 Grading of tremors** <sup>[14]</sup>

Grading	Tremors
0	Normal
1	Tremor present but does not interfere with writing
2	Difficulty writing due to the tremor
3	Cannot write without using strategies such as holding pen differently or using large pen.

**Table-5: Therapeutic intervention**

Day	Karma	Drug & dose
1 <sup>th</sup> to 21 <sup>th</sup>	<i>Sthanika Abhyanga &amp; Nadi Swedana (Mukha, Griva and Ubhaya Skandha)</i>	<b>Bala Taila</b>
	<i>Nasya</i>	<b>Brahmi Ghrita</b> 12 drops in each nostril
22 <sup>th</sup> to 28 <sup>th</sup>	Gap	-
29 <sup>th</sup> to 42 <sup>th</sup>	<i>Shiro Pichu</i>	<b>Bala Taila</b>
	<i>Sthanika Abhyanga &amp; Nadi Swedana on left hand, wrist, and forearm</i>	<b>Bala Taila</b>
43 <sup>th</sup> to 49 <sup>th</sup>	Gap	-
50 <sup>th</sup> to 63 <sup>th</sup>	<i>Shamana Snehapana</i>	<b>Gandharvahastadi Eranda Tailam</b> with milk (10 ml oil with 100 ml warm milk once daily)
1 <sup>th</sup> to 90 <sup>th</sup>	<i>Shamana Chikitsa</i>	<p><b>Rasayana Churna</b> -2gm (<i>Bhaisajya Ratnarali Rasayana Adhikara</i>)</p> <p><b>Ashwagandha Churna</b> -1gm (<i>Bhavaprakasa-Misra prakaranaa Guducyadi varga</i> 161-62)</p> <p><b>Arogyavardhini Rasa</b> - 250mg (<i>Rasaratna Samuchchaya, Visharpa Chikitsa</i>-20/106-112)</p> <hr/> <p style="text-align: right;">BD after food</p> <p><b>Brahmi Vati</b> -1Tab.BD after food (<i>Rasatarangini</i>)</p>

Table -6 Before & after results for the assessment parameters [15][16]

Table 3: Before & after results for the assessment parameters		
Assessment Parameters	Before Treatment	After Treatment
Pain assessment (VAS SCALE)	Grade 3	Grade 0
Tremors (TETRAS SCALE)	Grade 2	Grade 0
Stiffness (VAS SCALE)	Grade 3	Grade 0

Figure-7: Writing results documented by the patient before and after

A person having 35 शुद्ध श्वास is a sign of happiness but his body should not be highly built, unprepared and naturally poor.

**a) Before treatment**

Abdomen dis.

- i) Ante ab. wall.
- ii) Peritoneum
- iii) Abdo. visc. / organs
- iv) Thorax.
- v) Thoracic cavity → Dis. of Thoracic visc.
- vi) Post. abdo. wall → Dis. of Joints.
- vii) Deep dis. of Back (Trunk reg.)
- viii)

Head & Neck

- ix) Head - Scalp reg.  
Cranial Brain & Spinal Cord  
Cranial cavity  
Face  
Sensory organ except Skin.

**b. After 30 days of treatment**

\* Definition's of Research →

- 1) Acc. to WHO → "Research is a quest for knowledge through diligent search or investigation or experimentation aimed at discovery and inter-relationship of new knowledge."
- 2) Acc. to P. V. Young → "Research may also be defined as the scientific undertaking which by means of logical & systematized methods, aims to discover new facts or re-establish and verify old facts and to analyze their sequences, inter-relationships, causal explanations and the natural terms which govern them."

c) After 60 days of treatment

→ Types of ossification

- 1) Membranous bones: Bones are laid down first as thick connective tissue (mesodermal) condensations.  
→ These mesodermal models are converted directly into bone. It is called intramembranous ossification.  
eg - Bones of vault of skull (parietal bone), face, mandible, and clavicle.
- 2) Cartilaginous bones: In some bones the mesodermal condensation into bone takes place.  
→ It is known as intracartilaginous or endochondral ossification.  
eg. - Vertebrae, bones of limbs & thoracic cage.
- 3) Membranocartilaginous: Some bones develop partly in membrane & partly in cartilage.  
eg. - Occipital, mandible, temporal & sphenoid bones.

d) After 90 days of treatment

- Short lateral ligament → Cord-like thickening of capsule deep to fibular collateral ligament.
  - Openings: Capsule has 2 constant gaps
    - A, One leading into suprapatellar bursa.
    - B, Another for coat of tendon of popliteus.
- ② Ligamentum patellae → Central portion of common tendon of insertion of quadriceps femoris, remaining portions of tendon form medial & lateral patellar retinacula.
  - It is about 7.5 cm long & 2.5 cm broad.
  - It attached above to margins of rough post. surface

e) After 1 month follow-up

## RESULT:

In the pre-treatment assessment, the patient exhibited Grade 3 pain and Grade 3 stiffness as per the VAS scale, along with Grade 2 tremors evaluated using the TETRAS scale. Following the therapeutic intervention, a significant clinical improvement was documented, wherein all three parameters - pain, tremors, and stiffness demonstrated complete resolution, each attaining Grade 0 post-treatment. This marked reduction in symptom severity clearly indicates the efficacy of the administered treatment protocol in ameliorating motor disturbances associated with the condition.

## DISCUSSION:

In *Samprapti* (pathogenesis), *Vata* is triggered by *Avarana* (the obstruction of *Dosha* and *Dhatu*) and *Dhatukshaya* (the depletion of *Dhatu*). Writing tremors illustrate this phenomenon, appearing as heightened tremors or movements while writing.

According to *Acharya Sushrut*, when *Doshas* become vitiated, they spread throughout the body, causing illness by obstructing *Srotasas* (channels) and resulting in widespread pathogenesis. To correct imbalances in the three *Doshas*, Ayurveda uses *Shamana chikitsa* (curative treatment) and *Shodhana Chikitsa* (bio purification treatment), which uses purification procedures to eliminate *Doshas* at their source.<sup>[17]</sup> *Brahmi Ghrita Nasya* works by pacifying vitiated *Vata* in the nervous system, which is the main cause of tremors (*Kampa*). Being administered through the nasal route, it nourishes and strengthens the brain tissues, as the nose is considered the gateway to the head (*Nasa hi Shiraso Dwaram*). The lipid-soluble *Ghrita* serves as a carrier, enabling the delivery of active compounds through the blood-brain barrier. *Shiro Pichu* with *Bala Taila* pacifies the aggravated *Vata* in the *Shirah* and helps to normalize the neuromuscular functions involved in fine motor control. The *Balya* (strength-promoting) and *Vatasamaka*

properties enhance coordination and steadiness of hand movements. *Bala Taila Sthanika Abhyanga* (local oil massage) acts by pacifying aggravated *Vata Dosha*, which is the primary cause of tremors. The *Snigdha* (unctuous), *Guru* (heavy), and *Vata-Shamaka* properties of *Bala Taila* help in stabilizing neuromuscular functions. *Nadi Swedana*, a type of steam therapy, helps manage tremors by calming the imbalanced *Vata Dosha*, which is mainly responsible for causing tremors.<sup>[18]</sup> The localized application of medicated steam aids in relaxing stiff muscles and ligaments by enhancing peripheral circulation and helping to eliminate *Ama* and obstruction (*Avarana*) within the channels. The primary functions of *Gandharvahastadi Eranda Tailam* are its mild *Shodhana* (purgation) effects and its ability to balance *Vata* and *Kapha*. The properties of castor oil (*Eranda*) which include *Vatahara*, *Snigdha* (unctuous), and *Bhedana* (purgative) help eliminate *Avarana* (obstruction) of *Vata*, which occurs due to an excess of *Kapha* and *Mala*. The text enhances nerve transmission and reduces stiffness and dryness associated with *Vata* vitiation by lubricating and nourishing the neurological system. *Rasayana Churna* acts by rejuvenating the nervous system and restoring the balance of *Vata Dosha*, which is primarily responsible for tremors. *Ashwagandha Churna* works by pacifying *Vata Dosha*, which is primarily responsible for neuromuscular disorders like writer's cramp. *Arogyavardhini Rasa* acts as a *Deepana-Pachana* agent, improving *Agni* (digestive fire) and correcting metabolic imbalances that can contribute to *Vata* aggravation in writer's cramp.<sup>[19]</sup> *Brahmi Vati* acts as a *Medhya Rasayana* that enhances cognitive functions and pacifies aggravated *Vata Dosha*, the primary cause of writer's cramp. It improves *Manovaha Srotas* functioning, calms the

nervous system, and reduces stress and anxiety that worsen dystonic symptoms.<sup>[20]</sup>

## CONCLUSION:

This case study demonstrates the potential efficacy of an Ayurvedic treatment approach—particularly *Abhyanga*, *Swedana*, *Nasya Karma*, *Shiro Pichu*, *Shamana Snehapana*—in the management of Primary Writer's Cramp, a form of focal hand dystonia. The combination of *Abhyanga*, *Swedana*, *Nasya*, *Shiro Pichu*, *Shamana Snehapana* and *Vata-Dosha*-pacifying internal medications contributed significantly to improving motor coordination, reducing muscle spasms, and restoring functional hand movement.

Writer's cramp, which often has a limited response to conventional therapies, may benefit from a holistic, neuro-Ayurvedic approach that considers both systemic imbalances and local neuromuscular dysfunction. In this case, the integration of Ayurvedic principles and personalized therapy led to a marked improvement in handwriting, grip strength, and overall quality of life—without adverse effects.

## Acknowledgement:

The authors would like to acknowledge the support and facilities provided by ITRA Hospital, where this study was conducted.

**Conflict of interest:** The author declares that there is no conflict of interest.

**Guarantor:** The corresponding author is the guarantor of this article and its contents.

**Source of support:** None

**How to cite this article:**

Renu Moond, Karani Singh Shekhawat, Anup Thakar, Neha Tank. Clinical Evaluation of *Nasya Karma* as a *Panchakarma*-Based Neurotherapeutic Intervention in Writer's Cramp: A Single-Case Study. *Int. J. AYUSH CaRe.* 2025;9(3): 869-879.

**REFERENCES:**

1. Hallett M. Pathophysiology of writer's cramp. *Hum Mov Sci.* 2006; 25:454–463. doi: 10.1016/j.humov.2006.05.004.
2. Vd. Harish Chandra Singh Kushawaha, editor. *Charaka Samhita of Agnivesha with 'Ayurveda-Dipika'* Hindi commentary. *Chikitsa Sthana*, Chapter 28, Verse —. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2018. p.856.
3. Sushruta. *Sushruta Samhita*, *Nibandhasamgraha* commentary of Dalhanacharya and Nyayachandrika Panchika commentary of Gayadasa. Edited by Yadavji Trikamji Acharya. *Sutrasthana*, 24/82. 9th ed. Varanasi: Chaukhamba Orientalia; 2014. p.190.
4. Kushwaha HCS, editor. *Agnivesha. Charaka Samhita with Ayurveda Dipika* Hindi commentary by Chakrapani Datta. *Chikitsa Sthana*, Chapter 28, Verse —. Reprint edition. Varanasi: Chaukhamba Orientalia; 2018. p.856.
5. Kushwaha HCS, editor. *Agnivesha. Charaka Samhita with Ayurveda-Dipika* Hindi commentary. *Chikitsa Sthana*. Chapter 28. Reprint ed. Varanasi: Chaukhamba Orientalia; 2018. p.856.
6. Vagbhata. *Ashtanga Hridaya* with commentaries of Arunadatta and Hemadri. Edited by Paradkar HS. *Sutra Sthana*, Chapter 18, Verses 27–28. Varanasi: Chaukhamba Krishnadas Academy; 2009. p.264.
7. Charaka. *Charaka Samhita* with commentary by Tripathi B. *Chikitsa Sthana*, Chapter 28, Verse 37. Varanasi: Chaukhamba Orientalia; p.694.
8. Vagbhata. *Ashtanga Hridaya. Sutra Sthana*. 1st ed. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p.273.
9. Vagbhata. *Ashtanga Hridayam, Vidyotini Hindi Commentary. Sutrasthana 22/25.* Reprint Ed. Varanasi: Chaukhamba Prakashana; 2009. p.182.
10. Pt. Shastri Hari Sadashiv, Vagbhata, with *Sarvangsundara* commentary by Arundatta and the *Ayurvedarasayana* commentary by Hemadri, *Ashtang Hridaya*, Varanasi, Chaukhamba Surbharati Prakashan, Reprint ed 2017, 247.
11. Chakrapani Datta. *Charaka Samhita. Chikitsa Sthana 16 Trimarmiya Adhyaya 27–31.* Edited by Jadavaji Trikamji Acharya. Varanasi: Chaukhamba Orientalia; 2002. p.599.
12. Bennett M. The LANSS pain scale: the Leeds assessment of neuropathic symptoms and signs. *Pain.* 2001; 92.
13. Agnivesha. *Charaka Samhita with Ayurveda-Dipika* Hindi commentary. Edited by Kushwaha HCS. *Chikitsa Sthana*, Chapter 28. Reprint ed. Varanasi: Chaukhamba Orientalia; 2018. p.856.
14. Stacy MA, Elble RJ, Ondo WG, Wu SC, Hulihan J. Assessment of interrater and intrarater reliability of the Fahn-Tolosa-Marin Tremor Rating Scale in essential tremor. *Mov Disord.* 2007;22(6):833-8.
15. Bennett M. The LANSS pain scale: the Leeds assessment of neuropathic symptoms and signs. *Pain.* 2001; 92.
16. Stacy MA, Elble RJ, Ondo WG, Wu SC, Hulihan J. Assessment of interrater and intrarater reliability of the Fahn-Tolosa-

Marin Tremor Rating Scale in essential tremor. *Mov Disord.* 2007;22(6):833-8.

17. Sushruta. *Sushruta Samhita* with *Nibandhasangraha* commentary. *Chikitsa Sthana.* 40th chapter, verses 21–22. Reprint ed. Varanasi: Chaukhamba Krishnadas Academy; 2004.

18. Hallett M. Pathophysiology of writer's cramp. *Hum Mov Sci.* 2006; 25:454–463. doi: 10.1016/j.humov.2006.05.004.

19. Mishra LC, Singh BB, Dagenais S. Scientific basis for the therapeutic use of *Withania somnifera* (Ashwagandha): A review. *Altern Med Rev.* 2000; 5:334–346.

20. Shinomol GK, Muralidhara, Bharath MM. Exploring the role of Brahmi (*Bacopa monnieri* and *Centella asiatica*) in brain function and therapy. *Recent Pat Endocr Metab Immune Drug Discov.* 2011;5(1):33–49.