WJPMR, 2026, 12(1), 26-30

Review Article

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Impact Factor: 6.842

ISSN (O): 2455-3301

ISSN (P): 3051-2557

Coden USA: WJPMBB

EFFECT OF NASAPANA, PRACHANDABAIRAVA RASA AND PARAVAT KALPA OVER PRATIMARSHA NASYA, ARDHANGAVATARI RASA REGIMEN IN ISCHEMIC STROKE (MARGAAVARANA JANYA PAKSHAGHATA): A COMPARATIVE CLINICAL STUDY

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DOI: https://doi.org/10.5281/zenodo.18084398

How to cite this Article: *Dr. Pampanagouda Beemanagouda Katti, Dr. Fareeda Begum Shaikh. (2026). Effect of Nasapana, Prachandabairava Rasa and Paravat Kalpa Over Pratimarsha Nasya, Ardhangavatari Rasa Regimen In Ischemic Stroke (Margaavarana Janya Pakshaghata): A Comparative Clinical Study. World Journal of Pharmaceutical and Medical Research, 12(1), 26–30.

Article Received on 16/11/2025 **Article Revised on 05/12/2025** **Article Published on 01/01/2026**

ABSTRACT

Introduction: Pakshaghata, one of the eighty Vata Nanatmaja Vyadhis, is characterized by unilateral paralysis and closely correlates with ischemic stroke in modern medicine. Sedentary habits, stress, hypertension, and diabetes have increased stroke incidence. In Margaavarana Janya Pakshaghata, the normal flow of Vata is obstructed by Kapha, resulting in stiffness, restricted mobility, and sensory loss. Ayurvedic management focuses on restoring Vata function through Snehana, Swedana, Nasapana, and Rasayana therapies. **Aim:** To evaluate the combined effect of *Nasapana* with *Mashabaladi Kwatha*, *Prachanda Bhairava Rasa*, and *Paravat Kalpa* over *Pratimarsha Nasya* with *Mashabaladi Taila*, *Ardhanga Vatahari Rasa*, and *Paravat Kalpa* in *Margaavarana Janya Pakshaghata*. **Methods:** An open-label randomized controlled clinical trial was conducted on 40 diagnosed cases of *Pakshaghata*, randomly allocated into two groups.

- Group A: Received *Deepana-Pachana* with *Madhoodaka Pana*, *Sadyo Virechana* with *Payasa Eranda Taila*, followed by *Nasapana* with *Mashabaladi Kwatha*, *Prachanda Bhairava Rasa*, and *Paravat Kalpa*.
- Group B: Received the same *Deepana-Pachana* and *Virechana*, followed by *Pratimarsha Nasya* with *Mashabaladi Taila*, *Ardhanga Vatahari Rasa*, and *Paravat Kalpa*.

Both subjective and objective parameters were assessed before and after treatment. **Results:** Both groups showed statistically significant improvement in *Pakshaghata* symptoms. However, Group A exhibited superior gains in motor recovery, muscle tone, coordination, and sensory function. **Conclusion:** Nasapana with Mashabaladi Kwatha combined with internal medications offers better therapeutic outcomes than Pratimarsha Nasya. Its enhanced Dosha Shodhana, Agni Deepana, Ama Pachana, and Rasayana actions contribute to faster and more comprehensive recovery, highlighting the pivotal role of Panchakarma in managing Pakshaghata.

KEYWORDS: Hemiplegia, Stroke, Pakshaghata, Nasapana, Sadyo Virechana, Paravat Kalpa.

INTRODUCTION

Pakshaghata, a clinical entity described in Ayurvedic literature, closely correlates with stroke in contemporary medical science. It is characterized by the sudden onset of focal neurological deficits resulting from an acute disturbance in cerebral circulation.[1] The interruption of cerebral blood flow leads to ischemic or hemorrhagic injury, causing neuronal ischemia, infarction, and subsequent neurological dysfunction. Clinically, the condition presents with hemiplegia, facial deviation, speech impairment (aphasia), and variable sensory or cognitive deficits, depending on the vascular territory involved.

Globally, stroke constitutes a major public health concern and ranks as the second leading cause of mortality and a predominant cause of long-term disability. According to the World Health Organization (WHO), approximately 15 million individuals suffer from stroke each year, among whom 5 million die and

another 5 million remain permanently disabled, imposing a substantial socioeconomic burden on healthcare systems.[2] The growing prevalence of stroke is associated with modifiable risk factors such as hypertension, diabetes mellitus, dyslipidemia, obesity, tobacco and alcohol use, and sedentary habits, in addition to non-modifiable factors including aging and psychosocial stress. In the Ayurvedic perspective, Pakshaghata is classified under Vata Nanatmaja Vyadhi, disorders arising from the vitiation of Vata Dosha, which governs the body's motor and sensory activities. The term "Pakshaghata" literally denotes paralysis of one half of the body, reflecting impairment of both sensory and motor functions. Pathogenetically, the aggravated Vata affects Snayu, Mamsa, and Indriyas —primarily disturbing Prana, Vyana, and Udana Vayu. The process of Margavarana by Kapha or Pitta, precipitated by Agnimandya and Ama formation, results in Srotorodha in Rasavaha and Raktavaha Srotas, leading to Majja Dhatu Kshaya and consequent neurological dysfunction.

Ayurvedic management of Pakshaghata emphasizes Vata-shamana, Srotoshodhana, and Majja Dhatu Poshana. Therapeutic procedures such as Nasapana with Mashabaladi Kwatha[3] and Pratimarsa Nasya with Mashabaladi Taila are beneficial in pacifying aggravated Vata and promoting neuroregeneration. Internal medications like Prachandabhairava Rasa[4], Ardhangavatari Rasa[5], and Paravata Kalpa[6] exhibit Vata-shamaka, Rasayana, and Srotoshodhaka properties, which enhance cerebral perfusion, reduce neuroinflammation, and facilitate neuromuscular recovery.

In summary, Pakshaghata represents a pathological condition resulting from the imbalance of Vata Dosha, Majja Dhatu, and Ojas, culminating in neuromuscular dysfunction. A holistic, integrative approach incorporating Vata-shamaka and Rasayana principles is therefore essential for effective management and functional restoration in Pakshaghata.

AIMS AND OBJECTIVES OF THE STUDY

1. To assess the combined effect of madhoodaka pana[7], Sadyo virechana with payasa eranda taila, abhyanga with lashuna taila[8] and mashabaladi kwatha nasapana, prachandabhairav rasa and Paravata kalpa in ischemic stroke.
2. To assess the combined effect of madhoodaka pana, Sadyo virechana with payasa eranda taila, abhyanga with lashuna taila and mashabaladi pratimarsha nasya and ardhangavatarirasa, paravat kalpa in ischemic stroke.
3. To compare the efficacy of madhoodaka pana, Sadyo virechana with payasa eranda taila, abhyanga with lashuna taila and mashabaladi kwatha nasapana, prachandabhairav rasa and Paravata kalpa over madhoodaka pana, Sadyo virechana with payasa eranda taila, abhyanga with lashuna taila and mashabaladi pratimarsha nasya and ardhangavatarirasa, paravat kalpa in ischemic stroke.

MATERIALS AND METHODS

Study Design

A total of 40 patients of Pakshaghata of either gender were selected and randomly divided into two groups, each comprising 20 patients. Patients in **Group A** were treated with Madhoodaka pana, sadyo virechana with payasa erand taila, nasa pana with masha baladi kwatha, prachanda bhairava rasa, paravat kalpa while those in **Group B** received Madhoodaka pana, sadyo virechana with payasa erand taila, nasya with masha baladi taila pratimarsha nasya, ardhanga vatari rasa, paravat kalpa.

Source of Patients

Forty patients presenting with classical signs and symptoms of Pakshaghata, were selected from the Outpatient and Inpatient Departments **TGAMC & Hospital, Ballari**.

CRITERIA FOR SELECTION OF CASES

INCLUSION CRITERIA

- Patients presenting with classical signs and symptoms of Pakshaghata.
- Already diagnosed cases of Hemiparesis and Hemiplegia
- Patients age group 20 to 70 years irrespective of sex, religion, socioeconomic status and occupation
- GCS 13 And above

EXCLUSION CRITERIA

- Haemorrhage disorders. T1DM and systemic complication.
- Comatose and unconscious patients.
- Space occupying lesions of brain such as Malignant and Benign tumors.
- GCS below 13
- Patient Who doesn't give consent form

DIAGNOSTIC CRITERIA

- Diagnosed cases of Ischemic stroke based on CT or MRI.
- Subjects are diagnosed clinically based on the criteria under National Institute of Health Stroke Scale (NIHSS)

INVESTIGATIONS

- PTINR
- Sr lithium
- Homocysteine
- APTT

INTERVENTION

A total of 40 patients diagnosed with Pakshaghata will be randomly selected and divided into two groups:
GroupA:
Madhoodaka Pana → Sadyo Virechana with Payasa Eranda Taila → Masha Baladi Kwatha Nasapana → Rasayana: *Prachanda Bhairava Rasa* and *Paravat Kalpa*

GroupB:
Madhoodaka Pana → Sadyo Virechana with Payasa Eranda Taila → Masha Baladi Taila Pratimarsha Nasya → Rasayana: *Ardhanga Vatari Rasa* and *Paravat Kalpa*

All participants will receive a detailed explanation of the study procedure, and informed consent will be obtained. Patients will retain the right to withdraw from the study at any time, and all personal data will be kept confidential.

MATERIALS REQUIRED FOR STUDY

Table No. 01: Formulations used in both groups intervention and purpose.

Name of the drug	Referance	Purpose
Madhoodaka	Cha chi, 29	Deepana Pachana
Masha baladi kwatha	Chakradatta vatavyadhi chi	Nasa pana
Prachanda Bhairava rasa	Rasa yoga sagara	Rasayana
Paravat kalpa	Charaka Samhita , Rakta pitta chi	Rasayana
Masha baladi taila	Chakradatta , vata vyadhi chi	Pratimarsha nasya
Lashuna taila	Cha ,Chi, 10	Abhyanga
Ardhanga vatari rasa	Ayurveda sara sangraha	Rasayana

COMPARISON OF GROUP A AND GROUP B

Table No. 02: Showing comparison of group A and group B.

	Parameters	Group A P value	Group B P value	Better group
Subjective Parameter	KARMA HANI	0.001	0.001	A
	RUJA	0.0001	0.001	A
	STHAMBA	0.0078	0.031	A
	VAK KRUCCHRATA	0.005	0.031	A
	MUKHA VAKTRATA	0.046	0.031	A
	POWER	0.0001	0.0001	A
	TENDON REFLEXES	0.0001	0.007	A
	NIHSS	0.0001	0.0001	A
Objective Parameter	APTT	0.001	0.005	A
	PT INR	0.0003	0.0051	A
	HOMOCYSTEINE	0.001	0.0002	A
	SR. LITHIUM	0.0003	0.4015	A

On comparing both groups, both are shows significant results but by considering percentage of Improvement in assessment parameters, Subjects of group A showed highly significant result in the subjective and objective parameters as compared to group B.

DISCUSSION

Madhoodaka Pana was administered for 3 days, with a total dose of 250 ml, given as 50 ml every half hour in the morning. It is a therapeutic combination of Madhu and Ushnodaka used in Ayurveda for neurological rehabilitation. Madhu, being Madhura Rasa, Sheeta Virya, and Rasayana, acts as a Yogavahi, enhancing drug absorption and Dhatu nourishment. It pacifies Vata-Kapha and supports nerve strength, cognition, and tissue regeneration. Ushnodaka is Deepana, Amahara, and Kshutvardhaka, improving digestion, metabolism, and toxin elimination. Together, they enhance Agni, promote Dhatu Poshana, and restore Vata balance. Their combined Balya and Rasayana effects rejuvenate body and mind, aiding recovery in Pakshaghata.

Payasa Eranda Taila was used for Sadyo Virechana to alleviate Vata in Pakṣaghāta patients. It is a medicated oil prepared from Eranda Taila processed with Kṣīra (milk), combining Vata-pacifying and Rasayana properties. The Snigdha and Ushna qualities of castor oil promote purgation, while milk provides nourishment and prevents Dhātu Kṣaya. Administered as Sadyo Virechana, it rapidly expels aggravated Doṣas and Ama, clearing Nāḍī obstructions and enhancing neuromuscular conduction. This results in improved motor function and reduced Sthamba (stiffness) and Ruja (pain). The therapy strengthens Agni, supports Dhātu Poshana, and facilitates early neurological recovery. By balancing Vata-Pitta, it restores coordination and relieves functional deficits (Karma Hani). The Kṣīra base ensures gentle detoxification with simultaneous rejuvenation. Thus, Payasa Eranda Taila acts as a rapid Vata-shamana, Shodhana, and Rasayana therapy in Pakṣag*hāta* management.

Masha Baladi Kwatha, mentioned in Chakradatta (23/24), is indicated in Vatavyadhi Chikitsa and was administered as Nasa Pana for Pakshaghata. It contains Masha, Bala, Rasna, Eranda, Truna, Ashwagandha, and Kapikacchu. Masha is Param Vatahara, Balya, and Brimhaniya, beneficial in Ardita and other degenerative nervine disorders. Bala acts as Tridoshaghna, Ojovardhaka, and Vatanulomana, restoring strength and

reducing inflammation. Rasna is Vatashamak and Shothahara, helping relieve Sthamba and Ruja through Amapachana and Margavishodhana. Ashwagandha serves as a Balya Rasayana, rejuvenating the nervous system and preventing Dhatukshaya. Kapikacchu enhances neuromuscular strength and coordination, supporting recovery in paralysis. Collectively, the Deepana, Pachana, and Vatahara properties of these herbs improve Agni, restore Vata balance, and enhance nerve function. Thus, Masha Baladi Kwatha Nasa Pana acts as a Rasayana and Vatahara therapy promoting neurological and functional recovery in Pakshaghata.

Prachanda Bhairava Rasa primarily contains *Kajjali* and *Tamra Bhasma*, acting through *Vata-shamana*, *Srotoshodhana*, and *Rasayana* mechanisms. The *Ushna*, *Tikshna*, and *Lekhna* qualities of *Kajjali* counter *Vata's Shita* and *Ruksha* attributes, reducing stiffness and enhancing motor activity. Its *Yogavahi* property facilitates targeted delivery and *Margavarana Shodhana*, clearing *Kapha-Ama* obstructions in neural and vascular channels. *Tamra Bhasma*, with its *Lekhna* and *Rasayana* actions, removes morbid *Doṣas*, improves microcirculation, and restores *Rasa-Rakta* flow. The formulation strengthens *Majja Dhatu* and *Snayu*, promoting neuronal repair, remyelination, and neuromuscular recovery. Its antioxidant and anti-inflammatory effects reduce ischemic congestion and oxidative stress in neural tissue. By enhancing *Srotoshodhana* and nutrient delivery, it alleviates spasticity and improves coordination. *Tamra's* deep-penetrating action enhances tissue detoxification and nerve conduction. Thus, *Prachanda Bhairava Rasa* offers multi-dimensional benefits in *Pakshaghata*, improving tone, mobility, and functional restoration.

Ardhanga Vatari Rasa (Uma Pharmacy) and **self-prepared Prachandabhairava Rasa** were evaluated in Pakshaghata. The market formulation showed only moderate improvement in motor recovery and spasticity reduction. In contrast, the self-prepared formulation produced faster and more consistent results, enhancing neuromuscular coordination and strength. This superior effect is due to classical Rasashastra processing, including proper Shodhana and Marana, yielding fine Kajjali with potent Yogavahi and Rasayana properties. It ensured deeper tissue penetration and better Srotoshodhana. Market preparations may lack uniformity and potency due to variable processing and storage. Hence, classical preparation methods enhance therapeutic efficacy and bioavailability. The study underscores the value of traditional Rasashastra standards for effective management of Pakshaghata.

Paravat Kalpa (Paravat Shakrut), mentioned in Raktapitta Chikitsa of Charaka Samhita, is Vishaghna, Rakta-gata Granthi Prabhavi, and Ushna Virya in nature. It acts on Vata-vitiated and obstructed Srotas, improving circulation and nerve conduction in Pakshaghata. Its Katu-Tikta Rasa and Laghu-Ruksha Guna clear Ama and Kapha, reducing stiffness and restoring neuromuscular function. The Ushna Virya aids Srotoshodhana and enhances microcirculation. Pharmacologically, its nitrogenous, steroidal, and polyphenolic components show neuroprotective, anti-inflammatory, and antioxidant actions. These improve oxygenation and prevent ischemic neural damage. Acting directly on the brain and Majja Dhatu, it supports voluntary motor recovery and spasticity reduction. Thus, Paravat Kalpa promotes vascular clearance, neural nourishment, and functional restoration in Pakshaghata.

Lashuna Taila[7] Abhyanga was done in Pakshaghata patients for its Vata-Kapha hara, Amapachaka, Srotoshodhaka, and Rasayana properties. Lashuna possesses Katu-Tikta Rasa, Ushna Virya, and Snigdha-Tikshna Guna, effectively pacifying Vata and clearing Kapha-Ama obstructions. The oil's unctuous, penetrating nature nourishes Dhatus and restores Vata gati. Regular massage improved circulation, muscle tone, and neuromuscular coordination while reducing Stambha and Ruja. Clinically, patients showed enhanced flexibility, voluntary movement, and faster functional recovery. Allium sativum's sulfur compounds—allicin and ajoene—exhibit antioxidant, anti-inflammatory, and vasodilatory actions. These complement Srotoshodhana and Vata Anulomana, improving oxygenation of ischemic tissues. Thus, Lashuna Taila Abhyanga offers an integrative, restorative therapy for Pakshaghata.

Masha Baladi Taila Pratimarsha Nasya was administered (2 drops per nostril twice daily) to deliver medicine directly to the brain via olfactory and trigeminal pathways, bypassing the blood-brain barrier. The lipid-based formulation ensures deeper neural penetration and nourishment of *Shiras* and *Snayu Srotas*. Its *Yogavahi* and *Sneha* properties enhance absorption, lubricate channels, and reduce stiffness. The *Vata-shamana* action normalizes aggravated *Vata*, improving tone, flexibility, and coordination. The therapy supports *Majja Dhatu* by relieving spasticity and promoting neuromuscular repair. Regular administration improved reflexes, limb control, and synaptic transmission. It also exerts mild anti-inflammatory and *Rasayana* effects on neural tissue. Thus, *Masha Baladi Taila Nasya* offers a targeted, gentle, and effective therapy for *Pakshaghata* recovery.

CONCLUSION

Pakshaghata, a Vata-dominant disorder comparable to hemiplegia, is a major cause of long-term disability. Early, targeted Ayurvedic intervention helps restore motor function and improve quality of life. The integrated regimen of Madhoodaka Pāna, Sadyovirechana, Masha Bālādi Kwatha Nāsa Pāna, Lashuna Taila Abhyanga, Prachanda Bhairava Rasa, and Parāvata Kalpa showed encouraging results in Mārgāvarana Janya Pakṣāghāta.

Madhoodaka Pāna improved Agni, aided Āma Pachana, and promoted Srotoshodhana. Lashuna Taila Abhyanga reduced spasticity and enhanced muscular tone. Masha Bālādi Kwatha Nāsa Pāna facilitated sensory clarity and efficient drug absorption. Prachanda Bhairava Rasa exhibited Vṛṣya, Lekhna, and Rasayana actions, aiding neuromuscular recovery, while Parāvata Kalpa improved hematological parameters like APTT, PT-INR, and homocysteine.

Patients showed weight reduction, better coordination, and improved motor strength. Continuation of Madhoodaka Pāna maintained therapeutic stability. Comparative analysis revealed superior efficacy of self-prepared Prachanda Bhairava Rasa over market-available Ardhanga Vātari Rasa, emphasizing the value of classical Rasashastra methods.

In this study, Group A (with Masha Bālādi Kwatha Nāsa Pāna) showed greater improvement in Karmahāni, Ruja, muscle power, and reflexes than Group B (with Masha Bālādi Taila Nasya). Both groups demonstrated enhanced hematological balance and functional outcomes, but Kwatha Nāsa Pāna proved more effective.

Overall, this combined Ayurvedic regimen was safe, effective, and holistic, addressing both Doṣic and Srotorodha aspects. It improved neuromuscular coordination, circulation, and hematological stability. Thus, Pakṣāghāta due to Mārgāvarana can be successfully managed through classical Ayurvedic principles integrating Shodhana, Nasapana, and Rasayana therapies.

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