

## Clinical Evaluation of Avasthānusāra Pakshāghāta Treatment Protocol (APTP) in Post-Stroke Hemiplegia: A Case Series

Dr. Asharani Medidar<sup>1\*</sup>, Dr. Manu R.<sup>2</sup>

<sup>1</sup>Ph.D. Scholar, Department of Panchakarma, Parul institute of Ayurveda, Parul University, Vadodara, Gujarat, India (Assistant Professor, Department of Panchakarma, SGR AM, Solapur)

<sup>2</sup>Professor, Department of Kayachikitsa, Parul institute of Ayurveda, Parul University, Vadodara, Gujarat, India

**Corresponding Author:** Dr. Asharani Medidar, Email: [asharahu128@gmail.com](mailto:asharahu128@gmail.com)

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### ABSTRACT

This case series evaluates the effectiveness of Avasthanusara Pakshaghata Treatment Protocol (APTP), a personalized Ayurvedic approach, in managing post-stroke hemiplegia across multiple patients. The interventions are tailored to the disease stage (Ama-Avastha and Nirama-Avastha), incorporating external therapies. This series presents clinical observations, treatment protocols, and outcomes to highlight the potential benefits of APTP in neurological rehabilitation.

## INTRODUCTION

Pakshaghata is a notable Vatavyadhi, categorized as a Vataja nanatmaja vyadhi and a Mahavatavyadhi. Clinically, the manifestations of Pakshaghata align with the diagnosis of Hemiplegia, <sup>[1]</sup> (ICD Code 11: MB53). It originates from either dhatuksaya (tissue depletion) or margavarana (channel obstruction). Pakshaghata literally translates to "paralysis of one half of the body," with "Paksha" referring to half of the body and "Aghata". Consequently, Pakshaghata is classified as both an Indriya pradoshaja vikara and an Upadhatu pradoshaja vikara, falling under the category of Madhyama roga marga. Karmendriyas pertain to the motor system, whilst Gyanendriyas are associated with the sensory system, with Manas governing both. Acharya Charaka establishes a comparison between Arditā, which engages both Karmendriya and Jnanendriya, and Pakshaghata, which predominantly impacts Karmendriya.

The primary Ayurvedic approach for Pakshaghata focuses on balancing Vata dosha and restoring function through Snehana (Oleation), Swedana (Sudation), Virechana (Purgation), Basti (Enema). This multi-faceted approach aims to address the root cause of Pakshaghata, alleviate symptoms, and promote recovery.

Avasthanusara chikitsa is an Ayurvedic treatment approach that emphasizes tailoring the therapeutic interventions to the specific stage and condition of the disease. Central to this approach is understanding whether the patient is in a Sama (with Ama) or Nirama (without Ama) state. In the Sama avastha, Ama – the product of impaired digestion and metabolism – is present, obstructing channels and weakening tissues. The initial treatment focus is on Ama pachan (digesting Ama) with light, easily digestible foods, digestive herbs, and therapies like Langhana (fasting) to clear the obstruction. Once the patient transitions to Nirama avastha, indicating the absence of significant Ama, the focus shifts to strengthening tissues, balancing doshas, and restoring normal function. This involves nourishing diets, tissue-rejuvenating therapies (Rasayana), and treatments aimed at addressing specific imbalances. By continuously assessing and adapting the therapies, considering the presence or absence of Ama, The Avasthanusara Pakshaghata Treatment Protocol (APTP) has been designed in the present case series which seeks to optimize the body's healing response and promote a more effective and personalized path to recovery. This case series aims to assess the response of hemiplegia patients to APTP.

## METHODS

**Patient Selection:** The patients diagnosed with post-stroke hemiplegia and managed with APTP are included in the present case series.

• **Assessment Parameters:**

- Motor function: Brunnstrom Recovery Stages (BRS), Medical Research Council (MRC) muscle power scale
- Functional independence: Barthel Index (BI)
- Muscle tone: Modified Ashworth Scale (MAS)

• **Treatment Protocol:**

Initial Assessment: Assessment of the patient's Avastha (Ama or Nirama) based on clinical signs and symptoms like Gauravata, Shaityata, Sthabdata of body

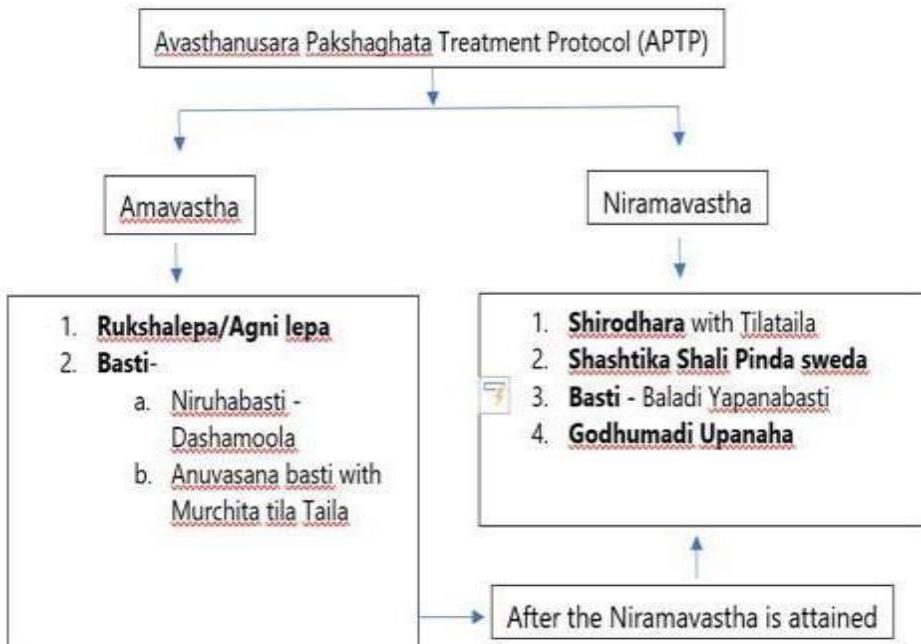
### AMA-AVASTHA CHIKITSA:

- Ruksha Lepa/Agni Lepa: Application of medicated paste (Nirgundi, Maricha, Lavanga, Lashuna, Tulasi, Agnimantha) once daily to the affected side
- Dashamula Niruha Basti: Decoction enema (420ml) with Saindhava, Madhu, Murchita Tila Taila, Shatapushpa Kalka, and Dashamula Kashaya.
- Anuvasana Basti: Enema with 60ml of Murchita Tila Taila.

### NIRAMA-AVASTHA CHIKITSA:

- Shirodhara: Pouring of Murchita Tila Taila over the forehead for 30 minutes.
- Sthanika Abhyanga and Shashtika Shali Pinda Sweda: Local massage and sudation to the affected limbs.
- Brimhana Basti (Baladi Yapanabasti): Enema with a mixture of Sauvarcalalavana, Madhu, Murchita Ghrita, Madhuka, Madanaphala, and Ksheera Paka of Atibala, Vidari, Shalaparni, Prushnaparni, Brihati, Kantakari, Darbhamoola, Parushaka, Kashmarya, Bilvapatra and Yava.
- Upanaha (Godhumadi Upanaha): Poultice with Godhuma, Rasna, Devadaru, Saindhava, Takra, and Tila Taila.

Fig No. 1 Showing Avasthanusara Chikitsa



## CASE PRESENTATIONS

### Case 1:

**Patient Details:** 55-year-old male farmer with post-stroke right-sided hemiplegia.

**Clinical Features:** Right-sided weakness, speech disturbance, imbalance.

**Diagnosis:** Pakshaghata due to acute infarction (left MCA).

**Treatment:** APTP (Ama-Avastha followed by Nirama-Avastha).

**Outcomes:** Improved motor function, Barthel Index increased from 40 to 75, Brunnstrom stage improved from 1 to 4.

### Case 2:

**Patient Details:** A 63 years male patient presented with Left sided hemiplegia along with Speech disturbances who is a known case of Hypertension

**Clinical Features:** Left side weakness of upper limb and lower limb, deviation of mouth to right side along with slow and slurred speech, difficulty in swallowing.

**Diagnosis:** Pakshaghata due to Non hemorrhagic infarction (right fronto-parietal Lobes and right insular cortex area).

**Treatment:** APTP (Ama-Avastha followed by Nirama-Avastha).

**Outcomes:** There was improvement in Subjective parameters like ghruhitvad ardha shareera, vaksthamb, hastapada sankocha and also improvement in objective parameters which were analyzed before and after treatment like Barthel Index, MRC grading, Brunnstrom recovery stage. And Modified Ashworth Scale ranking

### Case 3:

**Patient Details:** 62-year-old male presents with history of Sudden onset of weakness in the right upper and lower limbs with slurred speech; diagnosed with left MCA territory infarct on MRI.

**Diagnosis:** Right-sided hemiplegia (ischemic stroke)

**Treatment:** APTP (Ama-Avastha followed by Nirama-Avastha).

**Outcome:** Gradual improvement in motor strength (from 1/5 to 4/5 over 2 months), improved speech clarity

#### Case 4

**Patient Details:** Age/Sex: 65-year-old male

**Clinical Features:** Right-sided hemiplegia post stroke (3 months old), unable to walk

**Diagnosis:** Left parietal infarct Ayurvedic Diagnosis: Chronic Dakshina Pakshaghata

**Treatment:** APTP (Ama-Avastha followed by Nirama-Avastha).

**Outcome:** Improvement in MRC grade: 1+/5 to 3/5; Barthel Index: 25 → 60 and Improved hand grip and Cognitive Alertness

## RESULTS

Improvements in motor strength, functional independence, and muscle tone across cases (pre- and post-treatment scores) are summarized in Table No.

No adverse events or complications were noted during the treatment.

**Table No. 1 Showing the results**

Patient	Age	BI (Pre)	BI (Post)	BRS (Pre)	BRS (Post)	MAS (Pre)	MAS (Post)
Case 1	55	40	75	1	4	2	0
Case 2	63	45	85	2	4	3	0
Case 3	62	40	75	1	4	2	0
Case 4	65	25	60	2	4	2	0

## DISCUSSION

This case series examines the implementation of the Avasthanusara Pakshaghata Treatment Protocol (APTP), a customized Ayurvedic methodology, in the management of post-stroke hemiplegia. The fundamental tenet of APTP is to customize therapies according to the particular phase of the disease, with a primary emphasis on the presence or absence of Ama (metabolic toxins).

### PRINCIPLES OF AYURVEDA AND APTP:

The results of this case series are directly associated with core Ayurvedic concepts. **Addressing Vata:** APTP directly targets the pivotal role of Vata dosha imbalance in Pakshaghata. Utilizing Snehana, Swedana, Basti, and other Vata-pacifying therapies facilitates the restoration of Vata equilibrium.

**Addressing Ama:** A fundamental component of APTP is identifying and regulating Ama, a byproduct of compromised digestion and metabolism within the body. The case study acknowledges that Ama plays a crucial part in the pathology of Pakshaghata, as in the Sama Avastha, Ama obstructs bodily channels, weakens tissues, and then leads to more difficulties.

### JUSTIFICATION FOR TREATMENT ELEMENTS IN APTP

The various therapeutic components possess distinct rationales grounded in Ayurvedic principles. Ruksha Lepa/Agni Lepa is primarily conducted during the Ama Avastha. It primarily aids in the reduction of extra

bodily fluids and enhances metabolic function. Dashamoola Niruha Basti facilitates the expulsion of bodily toxins and purges the channels. Anuvasana Basti aids in sustaining Vata equilibrium and alleviating bodily dryness. Shirodhara is used in the Nirama Avastha, wherein the application of various therapeutic liquids onto the forehead aids in alleviating stress, enhancing mental equilibrium, and promoting sleep. Sthanika Abhyanga and Shashtika Shali Pinda Sweda modalities enhance muscular and neural fortitude while facilitating blood circulation. Brumhana Basti supplies essential sustenance to the body and aids in achieving bodily equilibrium. Upanaha is a poultice that alleviates inflammation and diminishes pain.

**Possible processes of Action:** The case series indicates plausible processes underlying the efficacy of APTP, which are:

- Enhanced Circulation: It augments blood flow and facilitates nutrition transfer.
- Neuroplasticity: The interventions can promote nerve regeneration and enhance the restoration of motor and sensory capabilities.
- Anti-inflammatory: The technique aids in diminishing bodily inflammation.

It primarily emphasizes the enhancement of motor functions, such as those delineated in the Brunnstrom stages. APTP demonstrates enhancements in the Barthel Index and Brunnstrom stage. A more extensive research investigation is necessary to unequivocally delineate the advantages.

## CONCLUSION

APTP shows promise in managing post-stroke hemiplegia by personalizing treatments. Larger controlled trials are needed to validate these findings. Further research should explore the specific mechanisms of action and long-term benefits.

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