

Role of Sapthanga masa Taila in the Management of Childhood Paralysis with Special Reference to Balaka Pakshaghata: A Review

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Abstract

Ayurveda is a holistic system of medical science and is the oldest healing science which is almost 5000 years old. Ayurveda contains two Sanskrit words: Ayu which means life or lifespan and Veda meaning knowledge. Thus, Ayurveda means "the science of life." *Pakshaghata* (Hemiplegia) is a neurological disorder where there is loss of sensation and motor deficit in one side of the body. There will be muscle wasting and inability to walk. *Snehana* and *Swedana* followed by *Virechana ans vasti* are advised in the management of *Pakshaghata*². *Snehana* have mentioned all *acharys* for treatment of *pakshaghata*. *Taila* (oil/snehana) preparations are supposed to be one among the finest snehana aushadha in the *Pakshaghata*.

Aim In the present study literature regarding Saptanga masa Taila quoted in Cakradatta for the management of *Pakshaghata* is expounded with all possible details.

Materials and Methods: A literature review was conducted with the help of many important *Ayurvedic* and Modern textbooks, and article published in various journals.

Result and Discussion: The present review reveals that the ingredients of *Saptanga masa Taila* affect the brain and nervous system. Further, as the formulation *saindava lavana* is mixed with *thila oil*, it can easily cross the blood-brain barrier and show its effect.

Conclusion: Sapthanga masa Taila and other suitable oral medicines offer a comprehensive strategy for improving motor function and enhancing the quality of life for individuals afflicted with Pakshaghata. However, additional panchakarma and physiotherapy may benefit children and adult patients.

Keywords: Saptanga Masa Taila, Pakshaghata, Antioxidant, Analgesic

Introduction

The terms Paksaghata, Paksavadha and Ekanga-roga are synonyms of the same disease and are used in classical treatises in various contexts. Charaka included it in the classification of Nanatmaja Vyadhi due to predominance of Vatha Dosha. The disease affects the Madhyama Roga Marga (Marma and Asthi Sandhi) and disrupts the functions of Sira (blood vessels), Snayu (ligaments) Kandara (tendon) etc.

The term Pakshagata is common but the suffixes, viz.—Aghata, Ghata, and Vadha vary. Here Paksha means side, the flank or side of a man and *Ghata, Aghata* means *Hanan* to kill, *Vadha* means to Kill, destruction, paralysis. Literally means paralysis of the body, here impairment of *Karmendriyas, Gnyanendriyas* and *Manas* seen. *Gnyanendriyas* are considered as part of the sensory system and *Karmendriys* are considered part of the motor system. *Pakshagata* is a *vatavyadhai* of Nanatmaja [3] *variyati* & Mahavatavyadhi [4]. *Pakshaghata* can be correlated with hemiplegia which results after stroke. Stroke is defined as

sudden onset of neurologic deficit from vascular mechanism 85% are ischemic and 15% are primary haemorrhages ^[5]. According to the World Health Organization, 15 million people suffer stroke worldwide each year, of these, 5 million die and another 5 million are permanently disabled ^[6].

Aushadhi has been given prime importance in Ayurveda as it is one among the Trisutra ^[7]. Dravya or aushadhi has potential to bring about the reversal in the process of pathogenesis (samprapti vighatana) and eradication of the sign and symptoms. Acharya Charaka said that there is no substance in the universe which can't be used as medicine, subject to rational use with definite object ^[8]. Saptanga masa Taila is mentioned in Cakradatta, Madhyam page 228 for the treatment of Pakshaghata (Hemiplegia) containing following ingredients ^[9] Masha, Bala, Kapikachchhu, Shatavari, Rasna, Satapuspa, Eranda, Sahindava, Til 0il.

Material and Methods

Material: This review is conducted using relevant available literatures Samhitas, Sangraha granthas and along with

published articles. The searches were performed using various databases, including PubMed, Scopus, Medline, Google Scholar and others.

Result

Methodology: Review Study

Literature related to the title is explored from all reliable *Ayurvedic* journals and internet. Conclusion has been drawn from systemic analysis, comparison and rationale.

Table 1: Pharmacology of Ingredients of Sapthanga masa taila

Name	Rasa	Guna	Virya	Vipaka	Doshaghnata	Karma (Pharmacological Actions)
Masha Phaseolus mungo	Madura	Guru Snigdha,	Usna	Guru, Madhura	Vata Shamaka, Pitta Kaphavardhaka	Tarpana, Balya, Sukrala, Brinhana, Mutrala, Kapha vardhaka, Stanyajanana, Medovardhana, Jeewaniya, Arsohara, Svasahara, Paktisulahara. (C.S.Su27/24;S.S.Su 46/35;A.H.Su 6/19)
Kapkchchu Mucuna pruriens (Linn.) Willd.	Madura Tikta	Snigdha, Guru	Sheeta	Madhura	Vata Pitta Shamaka Vata Pitta Shamaka	Nadisthapana, Vrunhana, Krimigna, Muthrala, Shukrala,. (C.S.Ci.9/52;S.S.Ut29/7;A.H.Ut 6/34)
Bala Sida Cordifolia (Linn.) Willd.	Madura	Snigdha, Guru	Sheeta	Madhura	Vata Pitta Shamaka	Balya, Rasayana, Ojaskara, Vedanasthpan, Vrsya, Pramehaghna, Vidhagna, Sothahara, Vathashulahara, Hardaya, Muthrala, Snehana, Raktapittahara, Sangrahana, Grahi, Vrsya. (C.S.Su4/2; C.S.Sa 8/29)
Satawari Asparagus racemosus wild	Madura-	Guru, Snigdha	Sheeta	Madura	Vatha–Pitta shamaka	Balya, Raktadoshahara, Sothahara Nadi balya, Rasayana, Garbaposhaka, Medya, Chakshushya, Raktapittashamaka, Sukrala, Stanyajanaka. (Madanapala Nighantu, P-140, Dr.J.L.N.Sastry, Chaukhambha Orientalia, Varanasi, 2010)
Rasna Pluchia lanceolata (Linn.) Willd	Tikta,	Guru,	Ushna		Kapawathahara,	–Amapachana, Sothahara, Svasahara, Vathasulahara, Udaranasana, Anulomaa, Raktashodhka, Vishaga
Shatapushpa Anethum sowa	Katu, Guna– Virya– Vipaka-	Lagu- tiksna,	Usna,	katu Tiktha	Pittawardhana	Dipana, Javaragna, Varna, Sulaharaa. Vedanashapana, Rochana, Pachana, Anulomana, Krimiga, Shothahara, Hridayottejaka, Mutrala, Swedajanana, (C.S.Ci.14/4; B. P.Ci 29/118)
Eranda Ricinus communis	Madura	Guru, Snighda, Guru, Snighda,	Usna	-Madura	Kapha-Vatha shamaka	Sothahara, Vedanasthapana, Deepana, Krimigna, n Muthrashodana, Medya, Jaragna, Vishagna, Angamardaprashamana, Bedana, Snehana, Kriminissarak, Muthravishodana, Stanyajanana, Swedjanana. (C.S.Su 25;S.S.Ci 19;A.H.Ci1/139)
Sahindava Lavana skandha (Ch), Haritakyadi Varga (Bp)	Lavana	Snigdha, Ushna, Tikshna Snighdh, Laghu, Hima, Sukshma	Anushna Sheeta	Madura	Tridoshahara	Deepaniyatama, Deepana, Pachana, Ruchya, Vrishya, Netryam [15]
Thil oil Sessamum indicum	Madura, Kasaya, Tikta	Snigdha, Guru	Ushna	Madura	Vata shamaka, Pitta-Kapha vardhaka	Veedana Sthapana, Sandaniya, Medya, Deepan, Grahi, Vajikarana, Balya, Vrushya, Medya, Kesya, Varnaropana, Rasayana, Varnya, Vishagna, Snehana, Avasadaka

Effect of Sapthangamasha Oil on Pakshaghata

Google search revealed that this is the very first review article linked.

Pharmacological Action:

- 1. Masha-Phaseolus Mungo
- i). Antioxidant Activities: Pakistan has been analyzed for its chemical composition, antioxidant potential, and biological activities like inhibition of formation of advanced glycation end products (AGE) activity and tyrosinase inhibition activity [10].
- **ii). Immunostimulatory Effect:** The apparent immunostimulatory effect of the P. mungo seed extract might be attributed to an augmentation of humeral and cell-mediated responses, phagocytosis, and haematopoiesis in the treated rats [11].
- **iii). Immunomodulatory Activities:** Immunomodulatory activities on humeral and cellular immunity were studied by hem agglutination titre, delayed type hypersensitivity, cyclophosphamide induced myelosuppression and lymphoid organ tests [12].

iv). Anti-inflammatory, Analgesic and Ulcerogenic Activities: Anti-inflammatory, analgesic and ulcerogenic activities mediated through sequential inhibition of the enzymes responsible for prostaglandin synthesis from arachidonic acid. Uses this plant in the management of pain and treatment of inflammatory disorders and establish the possible mechanisms of pharmacological action [13].

Traditional Medicinal Uses

Seeds are used as nervine tonic for the treatment of male sterility problems and act as a good aphrodisiac agent. Oil of seeds is used to treat neurological problem like hemiplegia, poliomyelitis and rheumatologic problems [14].

2. BALA-Sida Cordifolia (Linn.) Willd.

The effect of Action on the CNS evaluate by Franco CFL in 2005. An aqueous extract of S. cordifolia leaves was examined in animal models for their pharmacology properties

and found to possess ant-inflammatory effect and analgesic function in study conducted by Franzotti EM in 2000 [15].

The extract displayed protective effects against myocardial infarction by Yim MB in 1999²³.Hepatoprotective Effect was observed to stimulate hepatic regeneration, through hepatocyte proliferation. By Silva Ode in 2006 ^[16].

Sida Cordifolia in Neurodegenerative Disease: In the Ayurvedic system of medicine, the part which deals with prevention and treatment of neurodegenerative diseases, such as Parkinson's, Alzheimer's, and loss of memory, is termed rasayana and the plants having such properties are known as rejuvenators. Amongst the plants in rasayana is *S. cordifolia* which is used clinically in the treatment of neurodegenerative diseases. It has been found that these plants (Rasayanas) are generally characterized by possessing strong antioxidant activity¹⁷. Free radicals have been extensively reported to be implicated in neurodegenerative diseases¹⁸. Verification of the antioxidant capacity of *S. cordifolia* may justify its indication for treatment of neurodegenerative diseases in the traditional medicine. For Alleviation of Parkinson's disease Symptoms,

3. Kapikachchhu-Mucuna pruriens (Linn.) Willd.

Kapikachchhu showed better neuroprotective activity and used Parkinsonism. This Study conducted by Liu W in 2016. An n-propanol extract of M. pruriens seeds yields the highest response in neuroprotective testing involving the growth and survival of DA neurons in culture. Interestingly, n-propanol extracts, which contain a negligible amount of L-DOPA, have shown significant neuroprotective activity, suggesting that a whole extract of M. pruriens seeds could be superior to pure L-DOPA with regard to the treatment of Parkinsonism. The dopamine content in brain tissue is reduced when the conversion of tyrosine to L-DOPA is blocked. L-DOPA, the precursor of dopamine, can cross the blood-brain barrier and undergo conversion to dopamine, restoring neurotransmission [19]

Antioxidants provide protection to living organisms from damage caused by uncontrolled production of ROS and concomitant lipid peroxidation, protein damage and DNA strand breakage [20].

4. Satawari-Asparagus racemosus Willd

Asparagus racemosus is a well-known nervine tonic in the Ayurvedic system of medicine. Parihar and Hemnani (2004) [21] conducted a study to investigate the potential of methanolic extract of Asparagus racemosus roots against kainic acid (KA)-induced hippocampal and striatal neuronal damage in mice. Asparagus racemosus inhibited acetylcholinesterase enzyme in specific brain regions (prefrontal cortex, hippocampus and hypothalamus). Thus its show nootropic and anti-amnesic activities in the models tested and these effects may be mediated through augmentation of cholinergic system due to its anti-cholinesterase activity [22].

5. Rasns-Pluchea lanceolata(Linn.) Willd

Neurological Activity: The findings thus supported the comparatively greater role of Pluchea lanceolata triterpene than its in situ produced acetate derivative in neuro-inflammation associated disorders ^[23].

Antioxidant Activity: Primary findings showed that Pluchea lanceolata possesses higher levels of phenolic and ascorbic acid constituents that are responsible for antioxidant activity [24]

Immunosuppressive Effect: Cytometric studies also revealed the down regulation of pro-inflammatory cytokines and this is suggestive of its possible therapeutic usefulness in treatment of the inflammatory states of the body and autoimmune disorders like arthritis [25].

Immunostimulating Effect: The studied concentration of hydroalcoholic extract of whole plant powder of Pluchea lanceolata. An increase in the respiratory burst at all the studied concentrations was observed in all the assays indicating its immunostimulating effect [26].

Anti-Inflammatory and Anti-arthritic Activities: The methanolic extract of all plant parts exhibited notable anti-inflammatory activity and remarkable anti-arthritic action. The study supported the isolation and use of active constituents from *in vivo* and *in vitro* plant parts of Pluchea lanceolata in treating inflammations and rheumatism [27].

6. Shatapushpa-Anethum sowa

The hydro alcoholic extract of the Anethum graveolens seed caused significant decrease in the inflammation and pain in rats this study proved by Valady A in 2010 [28]. A single topical application of an ethanol extract of the fruits to the inner and outer surface of the ear of mice inhibited ear inflammation induced by 12-O-etradecanoylphorbol-13 acetate by 60% this study conducted by Okuyama T in 1995 [67]. A 10% aqueous extract of the fruits and 5% aqueous solution of the essential oil had analgesic effects in mice pain induced by hot plate and acetic acid writhing models. The calcium content of dill means that it is an important element in protecting you from bone loss and the loss of bone mineral density [29].

7. Eranda-Ricinus communis

In vitro Immunomodulatory Activity: The phagocytosis is the engulfment of microorganism by leucocytes. In last the phagocytosis is the intracellular killing of microorganisms by the neutrophils. The presence of tannins in the leaves of R. communis significantly increased the phagocytic function of human neutrophils and resulted produces a possible immunomodulatory effect [30].

The high antioxidant activity of the seed of communis at low concentration shows that it could be very useful for the treatment of disease resulting from oxidative stress [31].

The anti-inflammatory activity of R. communis methanolic extract was due to the presence of flavonoids because the flavonoids have the protective effect against carrageenan-induced paw edema in rats [32].

8. Saindhava Lavana Skandha (Ch), Haritakyadi Varga (Bp) Neuroprotective Effect

Sesame seed oil is highly stable to oxidation and has been demonstrated to have protective effect against ischemic-reperfusion injury in the rat brain.in this study foe the *in vitro* ischemic, oxygen–glucose deprivation follow by reoxygenation (OGD-4 4h OGD followed by 24h reoxygenation) in HT22 cells was used to investigation the protective effect on cell death and the inhibition effect on lipid peroxidation. (ahmad S tai 2011).

Discussion

Different drugs and pharmaceutical procedures consequence into a formulation and potency of which alters with change in qualities of drugs. Before fabricating any formulation, prime importance must be given to the calibration of its constituents. So, to ascertain the qualities of *Saptanga masa Taila*, detail of

its ingredients are narrated in this present study. Action of drug is based on 5 mechanisms of actions or attributes; namely rasa, guna, Virya and vipaka along with certain specific properties called *prabhava*. In the trial drug Saptanga Masa Taila, Tila taila cooked with the one part of kalka of masa, kapikachchu, shatavari, eranda, rasna, satapuspa saindhava lavana along with four part of kvatha prepared with masha and bala.

All Acharya have emphasized that Vata is the predominant Dosha in the manifestation of Pakshaghata. Even though the association of Pitta and Kapha may be found, but the main causative factor is Vata. And then only appropriate treatment should be initiated. Amid of Tri-Doshas Vata is chief Dosha because Pitta and Kapha Dosha, Rasaadi Dhaatu and Mootra, Purishaadi Mala are self-movement less With help of Vayu they reach desired site in body and able to perform function.

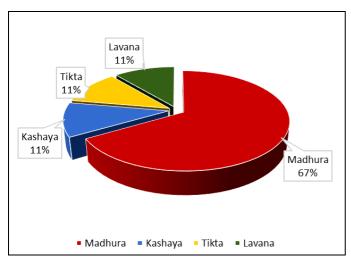


Fig 1: Ayurvedic Pharmacology of Ingredients Rasa

All most all the ingredients of *Sapthangamasha taila* possess *Madhura rasa* (67%) as the main *rasa* while as *anurasa Tikta* (11%), *lavana* (11%), and *Kashaya* rasa (11%), are present. Prominent *Guna* of the ingredients can be distinguished as *Snigdha*, and *Guru guna*, *Ushna* as *Virya*, *Madhura* as predominant *Vipaka* can be identified. *Vata-Pitta*, *vata-Kapha*, *dosha karma* are prominent with *Balya*, *Vrushya* and *vedanasthapana actions*. Further, *Saindawa lavana* and *Til oil* are equally effective for higher functions of brain such as *Medhya* [27], *Vrushya* [28], *Rasayana* [29, 30] etc.

According to the analysis of rasa present in individual drugs, the majority of drugs (67%) have Madhura rasa. The combination of Prithvi and Jala mahabhuta creates Madhura rasa. Mamsa dhatu's panchabhautika composition is similar to Madhura rasa. As a result of the Samanya Vridhikarna law. Madhura rasa is able to aid in the growth and proper nourishment of muscular tissue. Madhura rasa shows Balva, Jeevaniya, Sarvadhatu Vardhaka, Brimhana, Preenana and Sthairyakarana actions. As a result, Madhura rasa appears to be capable of providing proper nourishment to neurons in order to take up a load of already damaged neurons. Madhura rasa with combination of Tikta and Kashaya rasa may help in the proper development of neuron synapses, results a regeneration process in neuronal precursor cells due to its penetrating strength. Due to the agneya nature of katu rasa it involved in Indriyautojetaka (receiving information from the senses) action, Margana vivraunati (proper channelization and replacement of damaged neurons), and Agnidipana (secretion of hormones in synaptic vesicles). Hence, it is conceivable that it could provide stimulation in the areas of brain where cells can regenerate, particularly the hippocampal region.

Guna

When the *guna* of all the ingredients of the study drug is considered, 38% percent of the drugs have *Snigdha guna* an 29% percent have *Guru guna*, bringing the total to 38% percent. *Snigdha guna* improves the qualities of *Tarpaka kapha* and strengthen the functional brain). *Guru* guna's effect improves an individual's *Tarpana* (Nourishment) and *Brumana* (Increase bulk of body).

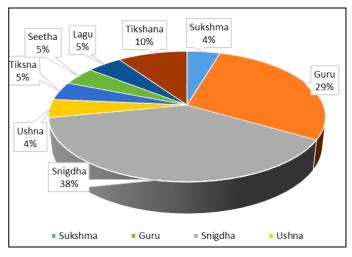


Fig 2: Ayurvedic Pharmacology of Ingredients Guna

Vipaka

When considering the *Vipaka* of all of the ingredients, 66.66 of the drugs have *Madhura vipaka* and 33.33% have *Katu vipaka*. *Madhura vipaka* increases all *sharira dhatus*, including brain and muscular tissues, nourishes *manas* and *indriya*, relieves vitiated *Pitta* and *Vata doshas*, improve vital strength, and gives firmness to the body. On the other hand, *Katu vipaka* stimulates all sense organs to perceive their respective objects by increasing overall metabolism in the body, proper enzymatic secretions, and thus minimizing nutrient deficiencies. The *Medhya* drugs (acting on CNS) are *Katu* and *Madhura vipaka* predominantly.

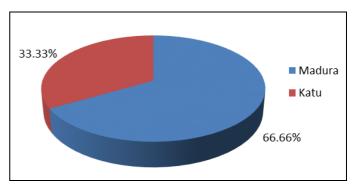


Fig 3: Ayurveda Pharmacology of ingredients

Virya

Sheeta virya shows stambhana (holding) and sthairikarana kriya (stability) may restrict the excessive neuronal discharge that is seen in case of convulsions.

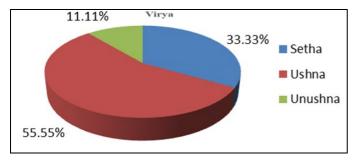


Fig 4: Ayurvedic Pharmacology of Ingredients

Dosha Shaman

Possesses *vata-pitta shamaka*, *kapha vata shamaka*, and *tridosha shamaka* have been balanced by this drug. As a result, the drug possesses excellent *Vatahara* properties that are supposed to vitiated in neurological disorders.

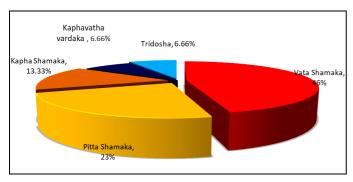


Fig 5: Ayurveda Pharmacology of ingredients Doshaghnata

Pharmacodynamics Properties Related to the Application of Saptanga Masa Taila Thil Oil

Sesame oil has an amino acid called tyrosine that has been directly connected to serotonin activity in the brain. Sesame oil consumption is linked to reducing stress and enhancing mood.

Saindhava Lavana (Rock Salt)

The following are some of *Saindhava Lavana's* evidence-based research studies:

- i). Sodium is required for action potential generation and transmission in neurons and muscle fibers. "
- ii). BBB (Blood Brain Barrier) crossing is possible at the ionic stage. It makes it easier for *Ghrita*, a substance that dissolves in fat, to move from the bloodstream to the brain tissue.
- iii). Sodium (Na) is the most common ion in the extracellular fluid (ECF). It makes up almost half of the osmolarity of ECF.
- iv). High osmotic pressure can cause the endothelial cells in capillaries to shrink, which opens up the spaces between the tight junctions of endothelial cells and makes the BBB more porous. As a result, drugs can enter the tissues of the brain.

The effect of Saptanga Masha taila can be further classified on principle of modern perspective as follows.

 Masha (Phaseolus mungo) possesses antioxidant properties that combat oxidative stress and promote muscle recovery. Bala (Sida cordifolia) has shown neuroprotective effects through its active compounds, supporting nerve repair and functional recovery.

- Kapikachchhu (Mucuna pruriens) has been validated for its dopaminergic properties, offering therapeutic benefits in neurodegenerative conditions like Pakshaghata.
- Masha and Bala provide critical nourishment to muscles, enhancing strength and reducing atrophy, while Kapikachchhu, rich in L-DOPA, supports dopamine levels, improving motor coordination.
- Shatavari and Rasna offer anti-inflammatory benefits and enhance the regenerative capacity of nervous tissues.
- Eranda facilitates deeper absorption of the active ingredients, while Til oil increases the bioavailability of the beneficial compounds.
- According Ayurvedic karma has been shown most are Nadibalya, Balya, Rasyana, Ojaskara, jeewaniya, Bringhana, Tharpana Vrashya Snehana, Swedajanana. There are helpful improve mental and physical strength, increase viyadishamathva of patient. Medovardana will be helpful for muscle wasting of extremities. hardya, Medohara, Muthrala prameyahara actions Controlled of Hypertaion, Ischemic hard disease, Diabetic Melaites. Actions of Vedanasthapana, Sothahara decreased deformities of extremities.
- Most drugs have been shown to possess the properties of anti-inflammatory, antioxidant, anti-rheumatoid analgesic action. Its content s antioxidant and adapt genic properties which help in the recovery and healing of deformed tissue. While has anti-inflammatory, analgesic, antipyretic and antioxidant properties that help in reduction of local as well as systemic inflammatory effects.

These findings validate the integration of traditional knowledge with modern scientific understanding, reinforcing the efficacy of *Sapthanga masa Taila* as a holistic treatment for *Pakshaghata. Vasti Karma*: A Core Component in the *Ayurvedic* Management of *Pakshaghata*

Among the array of Ayurvedic therapies, Vasti Karma stands out as one of the most effective modalities for treating Pakshaghata. This procedure, which involves the administration of medicated enemas, directly targets the root cause of Vata derangement while promoting systemic healing. Mechanism of Action: Vasti works by delivering medicated oils directly to the colon, the primary site of Vata. This route allows for enhanced absorption and localized action, effectively pacifying Vata and mitigating associated symptoms.

Therapeutic Benefits: By nourishing the affected tissues and facilitating the elimination of Ama, *Vasti* enhances muscle relaxation, reduces pain, and promotes overall functional recovery. The integration of *Sapthanga masa Taila* within *Vasti Karma* further amplifies these effects, providing a targeted approach that harmonizes both the physical and energetic aspects of healing.

Scientific Validation: Current clinical research supports the efficacy of *Vasti Karma* in managing *Pakshaghata*. Studies have reported significant improvements in motor function and a reduction in spasticity among patients receiving this treatment, highlighting its relevance in contemporary therapeutic practices.

Conclusion

This literary review underscores the multifaceted approach to managing *Pakshaghata* through *Sapthanga masa Taila* and its integration with traditional *Ayurvedic* therapies like *Snehana*, Swedana, and Vasti Karma. By embracing a holistic view that combines ancient wisdom with modern scientific validation,

we can affirm the effectiveness of these therapeutic modalities in addressing complex neurological conditions.

Sapthanga masa Taila and other suitable oral medicine offering a comprehensive strategy for improving motor function and enhancing the quality of life for individuals afflicted with Pakshaghata. The findings presented in this review advocate for the continued exploration of Ayurvedic formulations in the realm of modern medicine, promoting a collaborative approach that honors the past while paving the way for future innovations in patient care.

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