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PAKSHAGHATA – SAMPRAPTI AND CHIKITSA VIVECHANA

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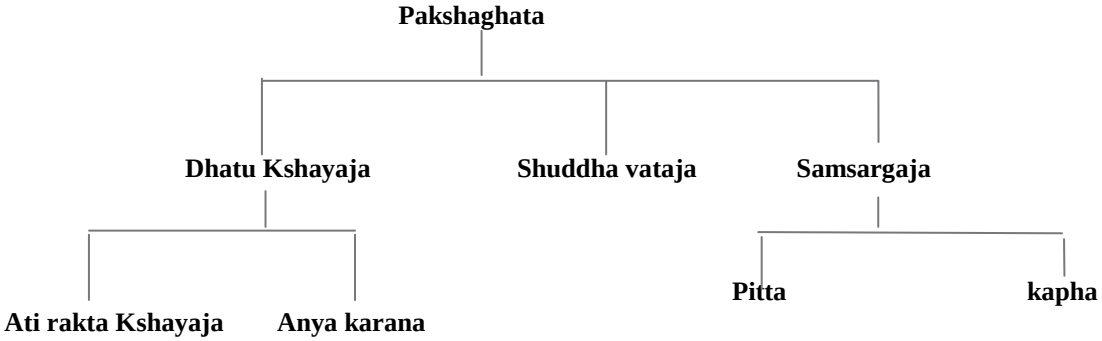
ABSTRACT
Pakshaghata means paralysis of one half of the body, here impairment of *Karmendriyas*, *Gnyanendriyas* and *Manas* seen. *Pakshaghata* can be correlated with hemiplegia which results from cerebrovascular accident - stroke. Stroke is heterogeneous group of disorder. Lifestyle disorders are increasing day-by-day, and stroke is the one among them. It is the 3rd most cause of death and disability world-wide. In developing country like India ratio is increasing due to increase in the ratio. The treatment of Pakshaghata is time consuming and expensive too. With advent of modern drugs, the treatment pattern of disease has grossly changed, where the drugs employed counteracts only symptoms temporarily and the underlying pathology goes on progressively to worsen the condition decreasing the quality of life of the patient. In *Ayurveda Pakshaghata* treatment schedule adopted according to the *avastha*. Hence there is need for *Ayurvedic* approach to manage the condition by re-establish the circulation and improves quality of life of Patient.

KEY WORDS: Pakshaghata, Hemiplegia. Samprapti, Chikitsa.

INTRODUCTION
Pakshaghata is one among the *Nanatmaja Vata Vyadhis*. *Acharya Susruta* considered as *Mahavatavyadhi* can manifest either due to *Dhatu kshaya* or *margavarana.*[1] The cardinal features of *pakshaghata* include *chesta hani* (impaired motor activity), *Ruja*(pain), *Vak sthambha*(slurred speech) and *Hasta pada sankocha.*[2] In some cases *Sandhi Bandha vimoksha*(weakness of joints), *Vaktra vakrata (*mouth deviation), *sphoorana* of *Jihva*(fasciculation of the tongue) also be presented. *Pakshaghata* can be correlated with hemiplegia, is a disease With a paralysis of one side of the body. It can be caused by Ischemic stroke (interruption of blood supply to the brain tissue) or Hemorrhagic Stroke(Rupture of blood vessels). The prevalence of stroke in India is approximately 200 per 100 000 persons.[3] The treatment of Pakshaghata is time consuming and expensive too. Stroke is responsible for a great burden of disability in the community, Though ample research is being carried out for overcoming the disease.

CLASSIFICATION OF PAKSHAGHATA



Nidana[4]
With the review of Ayurvedic literature, it is evident that no specific etiological factor described separately for Pakshaghata. So all factors vitiating Vata Dosha in body are root cause of Pakshaghata. Nidana described for Vata disorders in various Ayurvedic texts are classified systematically as below:

1. ***Margavarodha Nidana****: arbuda, Vidradi, Vega sandharana, Aama* formation.
2. ***Dhatu kshya Nidana****: Ati Vyavaya, Ratrijagarana,*

Ruksha, Alpa Ahara, Rakta mokshana, Ati vyayama, Langhana.

3. ***Manasika Nidanas*****:** *Chinta, Shoka, Krodha* and *Bhaya*

4. *Abhighataj Nidana*: *Abhighata, Marmaghata**,** Balvad Vigraha, Prapatana, Prapidana*

5. Anya Factors: It includes all other factors like

- **Seasonal variation(*Kalaja*):** excessive purificatory measures etc., which provoke *Vata Dosha*. Like *Pravata, Grishma Ante, Jeerna Ante, Ahoratri Ante, Shishir Ritu, Shishir Ritu, Varshaa Ritu, Bhukta Ante, Shita Kaala, Shita Kaala, Prabhaata Kaala, Aparaahna, Aparaahna, Vaya,*
- ***Nidanarthkara Roga*****:** *Rogati Karshanam, Mastishaka vidradi, mutra vishamata, Mastishka avarana shotha, Gadakritaatimamsakshay*[5](wastage of muscular mass due to disease).
- ***Vaidyakrita* (Iatrogenic):** Vishama Upachar, Ati Asrika Stravana, Kriyati Yoga.

Stroke[6]

Causes

Types: There are two kind of stroke:

a. Ischemic Stroke: It is caused by a blood clot that blocks or plugs a blood vessel in the brain.

- **Causes of Ischemic Stroke**

♣ Embolism (Auricular fibrillation, myocardial infarction, infective endocarditis, DVT, Post cardiac surgery)

♣ Thrombosis

♣ Transient ischemic attacks (TIAs) or mini-strokes. It occurs when the blood supply to the brain is briefly interrupted

♣ Atherosclerosis

♣ Atrial fibrillation

♣ Heart attack

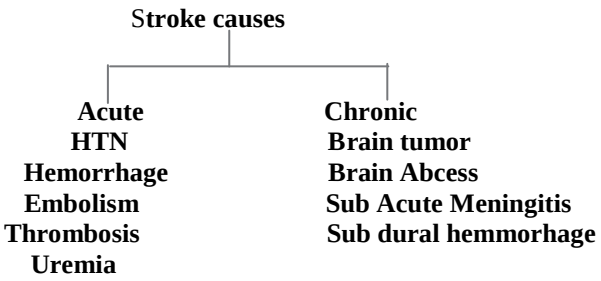
♣ Abnormalities of the heart valves

Other possible causes include use of street drugs, traumatic injury to the blood vessels of the neck or disorders of blood clotting.

b. Hemorrhagic Stroke: It is caused by a blood vessel that breaks and bleeds into the brain.

Causes of Hemorrhagic Stroke

The most common cause of cerebral haemorrhage is hypertension. Less common causes of intra cerebral haemorrhage include trauma, infections, tumours, blood clotting deficiencies and abnormalities in blood vessels (Berry's aneurism). Intra cerebral haemorrhage occurs at all ages.



SAMPRAPTI

Conventionally The *Samprapti* Of *Pakshaghata* can be of two types.

Aetiological classification	Clinical classification	Prognostic Classification
1.Dhatu Kshayajanya	1.*Pakshaghata - Ardita*	*1.Sadhya – Sanyukta Doshaja*
2.Margavaranjanya	2.*Ardhanga Vata* (Hemiplegia Excluding facial paralysis)	*2. Krichcha Sadhya – - Shuddha Vataj*
	3.*Ekanga Vata* (monoplegia)	*3.Asadhya – Dhatu Kshayaj*
	4.*Sarvang Vata* (quadriplegia)	

Vishishtha Samprapti Of Pakshaghata**:** This is a specific pathogenesis for a particular subtype, *Acharya* have mentioned *Vishishta Samprapti* of *Pakshaghata*, which is as under:

a*) Charaka Samhita: Acharya Charaka* says that *Vayu* beholds either side right or left of the body, dries up the Sira and Snayu of that part and producing loss of movements, contraction of hand or leg along with Ruja and Vakstambha.[7]

b) Sushruta Samhita: Sushrutacharya quote that, aggravated Vata traverses through the Urdhvaga, Adhoga and Tiryaka Dhamanis, lossens the Sandhi Bandha, and leads to Vaam or Dakshinpaksha Hanan. Here patients half of body become inoperative and looses sensibility, suddenly falls down or expires.[8]

c) Ashtanga Sangraha & Ashtanga Hrudyam Vagbhatacharya has assimilated Samprapti of both Charaka and Sushrutacharya and he says that Vayu hold half of the body, dries up Sira and Snayu, loosens Sandhi

Bandha and leaves either half of the body dead and leads to Ardhakaya Akarmanyata and Vichetana.[9,10]
Further Samprapti of Pakshaghata enumerated under following heads,

A. Sankhya Samprapti

There are three types of Pakshaghata as said in Sushruta Samhita[11]

1. Shuddha Vataja,
2. Pittanubandhi,
3. Kaphanubandhi

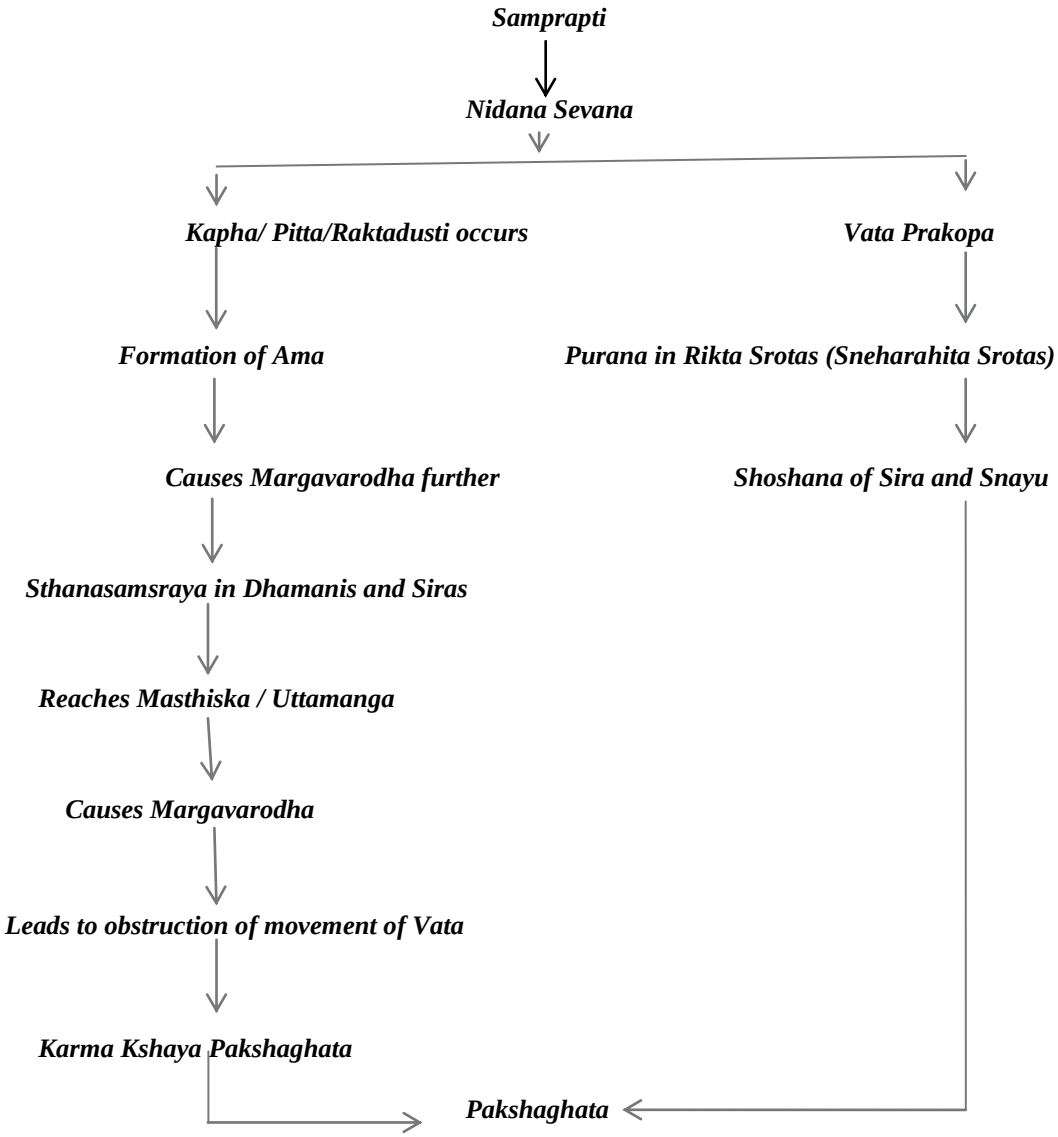
B. Pradhanya Samprapti: In account the Tara-Tama Bhava of Doshas, Pakshaghata is a Nanatmaja Vatavyadhi so, naturally Vata Dosha is affected. However, even in Vata, the subtypes chiefly affected are Prana Vayu, Udanavayu and Vyana Vayu. In addition, Pitta and Kapha Dosha also associated in Pittanubadhi and Kaphanubandhi Pakshaghata respectively. Pakshaghata which occurs due to its own causes may be taken as svatantra, while that occurring due to other causal factors like tumor, may be considered as paratantra.

C. *Vidhi Samprapti*: Vidhi is onset of disease depending on it there can be two types. One is of sudden Onset and other is of gradual onset. Hemiplegia occurring due to haemorrhage, embolism is examples of sudden onset, while that occurring due to neoplasm is of gradual onset.

D. Vikalpa Samprapti: This can be taken as Anshansha kalpana. Quality of Vata like Ruksha, Laghu are called as Ansha. In pakshaghata, usually Ruksha and Sheeta guna are increased while Chala guna is decreased.

Bala Samprapti: When Nidana, Poorvarupa, Dosha, and Dushya are profound in number and very strongly involved then disease is said to be of pravara and vice versa. Shuddha Vataj Pakshaghata occurred due to Dhatukshaya along with anemia and affecting larger area of brain can be considered as Balavan.

Kala Samprapti: Kala Samprapti is understood in context of age of patient, time of occurrence of disease with respect to season, day and night type of food patient take. Pakshaghata being a Vata Vyadhi is likely to be precipitated in Vata Prakopa Kala.



SAMPRAPTHI GHATAKAS* OF *PAKSHAGHATA

- *Dosha - Pradhana Dosha- Vata (Prana, Vyana, Udana)*
- *Anubandhi Dosha - Pitta, Kapha*
- *Dushya Dhatu --- Rakta, mamsa, medo, majja*
- *Upadhatu- Sira, Snayu,kandara*
- *Agni - Jatharaagni, Dhatvaagni*
- *Ama - Dhatwaagni-Maandya-Janya*
- *Srotas - Rakta Vaha, Mamsavaha, and Medavaha, majjavaha*
- *Sroto Dushti - **Sangha**, Atipravrutti, , Sirajagranthi & Vimaarga Gamana*
- *Udhbhava sthana - Pakwashaya*
- *Sanchara sthana - Dakshina\ Vama Sira, Dhamani, Snayu*
- *Sthana samshraya - Shiras*
- *Vyaktshana - Ardha Sharira*

CLINICAL FEATURES

Various symptoms of Pakshaghata described in Ayurvedic literatures are,[12, 13, 14, 15]

Acharya Charaka: mentioned *Anyatara Paksha Chesta Nivritti, Anyatara Pakshahanana, Hasta Pada Sankocha, Sira Snayu Vishosha, Vak Stambha, Ruja, Toda, Shoola*. Acharya Susruta added *Sandhibandha Vimoksha, Patatya*.

***According to Madhava Nidana**:(22/ 42-43)*
***Pittanubandhi:** Daha, Santap, mada, Moorcha, Sannyasa*
***Kaphanubandhi:** Shaitya, Shopha, Gurutva*

Principal Features of UMNL & LMNL

UMNL:	LMNL:
(1) No muscle wasting, except from disuse (disuse atrophy)	(1) Marked muscle wasting (atrophy)
(2) Spasticity (hypertonia), called " clasp-knife spasticity "	(2) Flacidity (Hypotonia) , hence given the name " flaccid paralysis "
(3) Clonus present	(3) No clonus
(4) Brisk (exaggerated) tendon jerks	(4) Diminished or absent tendon reflexes
(5) Extensor plantar reflex , Babinski sign (dorsiflexion of the big toe and fanning out of the other toes)	(5) Absent plantar reflex (normally it is flexor)
(6) Absent abdominal reflexes	(6) Absent abdominal reflexes
(7) No fasciculations	(7) Fasciculations may occur
(8) No fibrillation potential in EMG	(8) Fibrillation potentials present

5

CHIKITSA: Different opinions put forth about Pakshaghata Chikitsa in Ayurved classics as

1. **Charaka Samhita[12]:** Charakacharya mentioned Swedan, Snehana and Virechana as treatment modality for Pakshaghata. Acharya Jejjata & Gangadhara interprets this as Snehayukta Swedana(sneha dhara sweda) and Snehayukta Virechana(with eranda taila , tilwaka ghrita).
2. **Susrutha Samhita[13]:** Initially, Snehana and Swedana are to be provided, and then followed by Mrudu Vamana and Virechana. Thereafter Anuvasana and Asthapana Basti should be administred. After this, the general directions and remedial measures laid down under the treatment of Akshepaka should be imparted at proper time. Mastishkya, Shirobasti, Abhyanga, Salvana upnaha sveda , Anuvasana by Bala Taila are the specific measures described and also karna poorana, Nasya are indicated.
3. **Ashtanga Sangraha[14]:** Vridda Vagbhata followed Sushruta opinion along with that use of Kukkuti Rasayana Kalpa advocated as per Doshasangraha.
4. **Ashtanga Hrudyam[15]**: Vagbhata followed Charaka treatment method and advocated Snehan and Snehayukta Virechana.

Current approach to stroke in contemporary science[16]

Aim of the treatment	Major drugs used
Thrombolytic-alteplase(rt-PA	Thrombolytic
Reperfusion- recanalization	Diuretics to reduce cerebral edema
Antiplatelets	Aspirin, clopidogrel
Anticoagulants	Warfarin ,LMWH
Neuroprotective	Citicoline, vitamins
Symptomatic treatment	Management of HTN
Improving ADL	Physiotherapy

DISSCUSSION: The treatment planned is purely based on dosha avasta which helps in counteracting the symptoms according to the predominant dosha being presented.

According to the Pradhana dosha

In all types of Vata prakopa we should evaluate Pitta and kapha samshraya

In Pitta and vata- Treatment should be planned for Pitta than Vata

In Kapha and Vata- Treatment should be planned for Kapha than Vata.

Vata pitta dosha samanvitha

The treatment planned is according to dosha-samsarga when the patient comes in murcha, mada and sanyasa or akshepaka avastha the treatment adopted is, teekshna nasya with vacha choorna, vidanga, maricha, Swasa kutara ras, Lashuna Kalka avapeedana Nasya are beneficial to stimulates the Sanjna and dose the Srothoshodhana. Even though teekshna nasyawhich is vyadhi viparita chikitsa so to counter balance the dosha Sshiro dhara with Bramhi taila, should done along with talam with Shatadhauta Ghrita and Manjishtadi, and sheeta alepa which is pitta/jwara hara doshapratyanika chikitsa.

Vata kapha dosha samanvitha: Gurutwa, staimithya, stamba lakshanas can be seen, in this condition should adopt rooksha alepa(agni lepa) chikitsa for ama pachana, dhanyamla dhara which is having Amahara and Vata hara.

Virechana

Snehapana

In vata- Kalyanaka ghrita, Erandataila

Pitta- Panchatikta ghrita

Kapha- Panchagavya ghrita

- Virechana is the line of treatment for Vata Vyaadhi condition where Vata is associated with Kapha, Pitta, Rakta and Meda.
- The involvement of sira and snayu in samprapti of pakshaghata, sira is the upadhatu of Rakta dhatu, Hence Virechana is best shodhana in the involment of rakta dhatu.
- Pakshagata is also said to be a disease of majjavaha srotas. Majja dhatu and pitta are said to be form same origin 'Ya Eva Pittadharakala sa Eva Majjadhara kala'. Therefore treatment for majja and virechana is best treatment for pitta.
- *Mridu Sanshodhanaa* has been mentioned in treatment of *Margavarna*. (Ch. Chi. 9/25). Hence in *margavaranjanya Pakshaghata Mridu Sanshodhanaa*, i.e., *Virechana* can be advocated.
- Vagbhata has mentioned *Mridu Sanshodhanaa* (*Virechana*) in the general line of treatment of *vata* (A.H. Su.13/1), which can also be adopted for *Pakshaghata*.

Basti karma

Basti is one of the best treatment for vatavyadhi. It is the most important constituent of the pancha karma due to its multiple effects. Basti eradicates vitiated vata dosha from the root. It is also provides nutrition to the body tissue. In kevala vatajanya pakshaghata Basti is the best line of treatment.

In Ama Condition

Lekhana Basti

Choorna Basti

In Nirama condition

Rajayapana Basti

Dashamoola Ksheera Basti

Matra Basti

Acharya Charaka has stressed on Srotoshudhhi, Vatanulomana and Rasayana in general management of Avarana. Basti achieves both the goals i.e. Vatanulomana and Srotoshudhhi. Basti is treatment of choice for Madhyama Marga and to protect Marmas. Basti prevents the sira, snayu vishoshana,

Nasya karma

Nasa is the gate of shiras. Many types of Nasyas indicated in Pakshaghata according to Avastha of the disease by different types of NasyaYogas. AvapeedanaNasya indicated in unconscious patients and Pradhamana Nasya is indicated repeatedly to restore the consciousness. Sneha Dhoomapana and Nasya beneficial in Pakshaghata to give the nourishment to the The drug administrated through nose reaches to the brain (ShringatakaMarma) by which is a SiraMarma so by Nasya drug spread in the Murdha reaches at a junctional place of brain.

- Anu taila (V+K)
- Ksheerabala 101 (V+P)
- Karpasthyadi taila
- Mahamasha taila

} In vataja conditions

Bahirparimarjana Chikitsa: Bahirparimarjana chikitsa has supportive role along with pancha karma therapy.

Moordini taila; Moordha means siras. Moordini Taila (ShiroBasti, Shiro pichu, Shiro seka, Shiro abyanga)with Taila prepared with medhya dravya helps to pacify the aggravataed vata dosha in Shiras from the Shiras and helps in relaxing the nervous system. It balances the pranavayu around Shira.

Abyanga: Sahacharadi taila, Dhanvantara taila, Karpasasthyadi taila, Prabhanjana vimardana taila, Kshirabala taila, Mahamsha tail, Bala taila.

Swedana: Shastika shali Pinda sweda, patra pinda sweda, Nadi sweda, Dashamoola sadhita Ksheera dhooma in Ardita.
Sneha purvak swedana relives the symptoms such as harsha, toda, ruk, shotha, stambha, graha produces mruduta in the body, does dhatu poshana and increases bala. It prevents the disused atropy in the limbs.

Salvanaha Upanaha: Salvana Upanaha taila has been used which may serve lipoidal barrier for the penetration of drug molecules of ingredients and exerts immediate anti inflammatory and analgesic effect. Moreover heat is also maintained due to ushna and teekshna properties of the ingredients in upanaha.

Jihva Nirlekhana: With Vacha, pinch of Saindhava and Madhu are helpful to improve vak pravrutti.

Shamana Oushadhi: The principle of Shamana therapy is to normalize and maintain the equilibrium of all the Doshas.

Some of Ayurvedichave been given to pacify the Vata Dosha as like –

- Kashayam(Decoction)- Dashamoolkasaya (kaphavatahara), Gandharvahastadikashayam (Vatasamana),

Mahamanjishtadi kashyam - mainly in hemorrhagic stroke because of its Pitta Samaka property.
Bhaadradarvyadi Kashaya – Indicated in Ardtita
Asthavarga Kashaya- vata kapahahara
Sahcharadi kashaya – Adho bhaga vatahara
Dhanadhanayanadi Kashaya – dhatu kshaya janita

- **Ghrita and tailam(Ghee and Oils)-**, Dashamooladi Ghrita, Chitrakadi Ghrita, Baladi Taila, Maha narayana Taila Ksheera bala Taila, Dhanwantaram Taila Bala ashwagandha Taila, Bramhi taila, Nirghundi Taila, Maha masha Tailahave good vatahara property.
- **Asava & Arishata Prayoga**: Balarishta, Aswagandharishta, Dashamoolarishta
- Rasaoushadhi: Rasa oushadhi helps in the prevention, control & recovery of various stages of & complications of Pakshaghata.

Rasaraja Ras: Indicated in chronic stages, bell's palsy, vata kaphanubandhi conditions
Yogendra Ras: indicated in difficulty in Speech
VataKulantak Ras: Pakshaghata with convulsions, in depressive conditions
Vata gajankusha Ras: Pakshaghata with hypotension, Lower motor neuron Disorders
Ekangaveera ras: due to thrombosis
Vata Vidhwansini Ras: Acute stages, painful conditions
Brihat vata Chintamani Ras: UMN lesions, Rigid and Spastic conditions,
Laghusutashekhara Ras: Essential HTN
Chaturbhuja Ras: Vata kaphaja, Srotoshodhaka, Upadanshajanya Pakshaghata
Sammera pannag Ras: Vataja & vata kaphanubandhi
Malla Sindhura: Pittanubandhi, Thrombosis & Infarction(due to its anti –coagulant Property)
Smritisagar Ras: medhya
Bhasma: Vanga bhasma, Swarnamakhika Bhasma, Abhrak bhasma, Tapyadi Loha

Rasayana: ShivaGulika due to Vatahara and Brimhana property
Lashuna Rasayna due to its anti- thrombotic, Anti- atherosclerotic property

CONCLUSION

- Vata vaydhi like Pakshaghata, increased Ruksha guna of vata causes Rukshata & Parushata in srotas which is the key point in samprapti of Pakshaghata. So to compensate Ruksha Guna of vata, we used snehana in the form of Basti, Nasya, Shirodhara and Snehayukta Virechana are beneficial.
- Virechana is benefical in Pakshaghata in Margavarana Samprapti.
  Brimhana & Basti Karma are beneficial in Dhatu Ksayaja Pakshaghata.
- Even Pakshaghatais is difficult to manage, but Understanding the disease with careful analysis of Avastha of Vyadhi, giving prime importance to the Dosha- Dooshya Samoorchana and underlying Avarana, should adopt the necessary modalities of treatment at appropriate time with logical use of internal and external medicines, good results are obtained.
- Early management and rehabilitation therapy helps for better prognosis and to minimize the residual effects of CVA.

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