

2.2 NEUROLOGICAL/ NEURODEGENERATIVE AND SPECIAL SENSES DISORDERS

2.2.1 Hemiplegia (*Pakṣāghāta*)

Introduction

Hemiplegia is the commonest manifestation of a 'stroke' with neurological deficit affecting the face, limbs and trunk on one side or either side of the body. Impulses for voluntary movement are transmitted by the pyramidal tracts or upper motor neurons. Damage to these pyramidal tracts due to any lesion, trauma, ischemia or hemorrhage produces paralysis. In *Ayurveda*, it can be correlated with '*Pakṣāghāta*'. When *Vāta* getting aggravated, dries up the *Srotas* and *Snāyu* (tendons) of one side (half) of the body, makes the organ/ parts of that side incapable of functioning and loss of sensation.

Aetiology

1. Cerebro-vascular accidents (Stroke)
 - i. Cerebral hemorrhage
 - ii. Sub - arachnoid hemorrhage
 - iii. Cerebral thrombosis
 - iv. Internal carotid artery thrombosis or stenosis
 - v. Cerebral embolism
 - vi. Venous sinus thrombosis
2. Hypertensive encephalopathy
3. Cerebral tumors
4. Acute encephalitis



Pathogenesis

Damage to the pyramidal tracts produces impairment or loss of voluntary movement from interruption of the conduction of motor impulses.

Risk factors

1. Age
2. Sex
3. Hypertension
4. Diabetes mellitus
5. Smoking, Alcohol abuse
6. Obesity
7. Hyperlipidemia

Clinical features

1. Unilateral loss of voluntary power in the affected arm, leg and in the lower face
2. Clasp-knife type spasticity
3. Tongue is protruded towards the paralysed side (in facial palsy)
4. Upper limb flexed at the elbow and wrist forearm slightly pronated
5. Movement of the hand and fingers are more affected than those of upper arm

Investigation

1. Haemogram
2. Lipid profile
3. C T Scan /MRI
4. Doppler studies of the Neck
5. CSF examination
6. X - Ray Spine
7. ECG.



Management approaches

a. Prevention

1. Add *māṣa* (black gram), *kulattha* (horse gram), *palāṇḍu* (onion), *rasona* (garlic), *śuṅṭhī/ ārdra* (ginger), *mūlaka* (radish), *kūṣmāṇḍa* (ash gourd), *mudga* (green gram) in regular diet
2. Use fruits like *dāḍima* (pomegranate), *āmra* (mango), *drākṣa* (grape) etc.
3. Consume low fat and high fiber diet and *Rasāyana* drugs
4. Control the treatable risk factors like diabetes mellitus, hypertension, heart diseases
5. Take necessary treatment of hypertension (if any)
6. Control cholesterol level and weight
7. Practice regular exercises
8. Avoid excessive use of pungent, astringent and/ or salty, oily/ fatty food and incompatible diet, *canā* (bengal gram), peas, barley etc.
9. Avoid excessive starvation, excess exercises, suppressing of natural urges and awakening in the nights
10. Avoid alcohol consumption, smoking
11. Avoid discontinuation of any regular medication without medical advise

b. Medical management

Line of treatment (*Ca. Ci. 28/100*)

1. ***Nidāna parivarjana* (avoidance of aetiological factors)** - Management of treatable risk factors and diseases like hypertension, acute encephalitis, heart disease etc. and avoid trauma.
2. ***Samśōdhana cikitsā*** - (Bio-cleansing therapies) followed by *Śamana cikitsā* (Palliative therapy) should be advocated.
 - i. ***Snehana* (Oleation):** massage with medicated oils such as
 - *Mahā nārāyaṇa taila*
 - *Sahacarādi taila*



- *Dhānvantara taila*
- *Kārpāsāsthyādi taila*
- *Prabhañjana vimardana taila*
- *Kṣīrabalā taila*
- *Mahāmāṣa taila*
- *Balā taila*

ii. Svedana (Medicated fomentation)

- *Ṣaṣṭika śāli piṇḍa sveda* (made from *Ṣaṣṭiaka śāli*, *Balāmūla*, *Aśvagandhā mūla* and milk)/ *patra piṇḍa sveda* for 7-14 days
- *Sarvāṅga sveda* for 7 - 14 days

iii. Virecana (Purgation) with decoctions of :

| | | |
|--|---|-----------------|
| <i>Drākṣa (Vitis vinifera)</i> | - | 10 gm |
| <i>Āragvadha (Cassia fistula)</i> | - | 10 gm |
| <i>Harītakī (Terminalia chebula)</i> | - | 10 gm |
| <i>Katukī (Picrorhiza kurroa)</i> | - | 5 gm along with |
| <i>Eraṇḍa (Ricinus communis) taila</i> | - | 1 teaspoonful |
| or | | |

Eraṇḍa taila 10 - 20 ml with half glass of milk at night

iv. Vasti (medicated enema)

- *Mātrā vasti* with *Nārāyana taila* 50 ml daily for 7 - 14 days
- *Kaṣāya vasti* for 15 days (*Kāla vasti krama*)

| | | |
|--------------------------|---|--------|
| <i>Eraṇḍamūla kvātha</i> | - | 480 ml |
| <i>Taila</i> | - | 240 ml |
| Honey | - | 240 ml |
| <i>Kalka</i> | - | 30 gm |
| <i>Saindhava lavana</i> | - | 15 gm |
- *Kṣīra vasti* 350 - 500 ml for 7 - 14 days



v. **Nasya karma/ Bṛṃhaṇa nasya** with *Purāṇa ghṛta* (old ghī) / *Nārāyaṇa taila* / *Kṣīra balā taila* 8-8 drops in both nostrils for 7 days

vi. **Śirovasti** with medicated oils (*Nārāyaṇa taila* / *Kṣīra balā taila* / *Candana balā lākṣādi taila*) daily 45 minutes for 7 days

vii. **Śirodhārā** with medicated liquids (*Nārāyaṇa taila* / *Kṣīra balā taila* / *Candana balā lākṣādi taila* / decoctions etc.) daily 45 minutes for 21 days

*(above said formulations are common in practice but dose should be adjusted by the physician according to patient's condition).

3. **Drug Therapy** - All therapeutic measures may be started after crossing the acute phase of attack.

SINGLE DRUGS

| Drug | Dosage (per dose) | MOA ^s / Vehicle | Duration* |
|---|-------------------|----------------------------|-----------|
| <i>Aśvagandhā</i> (<i>Withania somnifera</i> Dunal) <i>cūrṇa</i> | 3-5 gm | Milk | 15 days |
| <i>Brāhmī</i> (<i>Bacopa monnieri</i> Linn.) <i>svarasa</i> | 5-10 ml | Water | 15 days |
| <i>Rasona</i> (<i>Allium sativum</i> Linn.) <i>kṣīra pāka</i> | 5-10 ml | Water/ milk | 15 days |
| <i>Eraṇḍa</i> (<i>Ricinus communis</i> Linn.) <i>taila</i> | 5-10 ml | Milk | 3 days |

COMPOUND FORMULATIONS

| Drug | Dosage (per dose) | MOA ^s / Vehicle | Duration* |
|---------------------------------|-------------------|----------------------------|-----------|
| <i>Gandharva hastādi kvātha</i> | 10-20 ml | Water | 15 days |
| <i>Sahacarādi kvātha</i> | 10-20 ml | Water | 15 days |
| <i>Mahārāsnādi kvātha</i> | 10-20 ml | Water | 15 days |
| <i>Brāhmī vaṭī</i> | 125-250mg | Water | 15 days |
| <i>Mānasa mitra vaṭaka</i> | 125 mg | <i>Rāsnāsaptaka kvātha</i> | 15 days |
| <i>Vātāri guggulu</i> | 1-1.5 gm | Warm water | 15 days |



| | | | |
|------------------------------------|--------------|---------------------------------|---------|
| <i>Trayodaśāṅga guggulu</i> | 1-1.5 gm | Warm water | 15 days |
| <i>Balāriṣṭa</i> | 10-20 ml | Water | 15 days |
| <i>Aśvagandhāriṣṭa</i> | 15-30 ml | Water | 15 days |
| <i>Hiṅgutriguṇa taila</i> | 5 ml | Lukewarm water | 15 days |
| <i>Candana balā lākṣādi taila</i> | external use | - | 15 days |
| <i>Kṣīrabalā taila</i> | external use | - | 15 days |
| <i>Mahāmāṣa taila</i> | external use | - | 15 days |
| <i>Mahā nārāyaṇa taila</i> | external use | - | 15 days |
| <i>Nārāyaṇa taila</i> | external use | - | 15 days |
| <i>Sahacarādi taila</i> | external use | - | 15 days |
| <i>Dhānvantara taila</i> | external use | - | 15 days |
| <i>Kārpāsāsthyādi taila</i> | external use | - | 15 days |
| <i>Prabhañjana vimardana taila</i> | external use | - | 15 days |
| <i>Vātagajāṅkuśa rasa</i> | 125-250 mg | Honey | 15 days |
| <i>Vātakulāntaka rasa</i> | 125-250 mg | Honey | 15 days |
| <i>Rasarāja rasa</i> | 65 - 125 mg | Honey | 15 days |
| <i>Yogendra rasa</i> | 125-250 mg | <i>Rasona svarasa and honey</i> | 15 days |
| <i>Bṛhatvāta cintāmaṇi rasa</i> | 125-250 mg | Honey | 15 days |
| <i>Ekāṅgavīra rasa</i> | 125-250 mg | Honey | 15 days |

^s **MOA** - Mode of administration

* Initially 2 times in a day after meal for 15 days followed by condition of patient and physician's direction.

NOTE: Out of the drugs mentioned above any one of the drug or in the combination may be prescribed by the physician. The duration of the treatment may vary from patient to patient. Physician should decide the dosage (per dose) and duration of the therapy based on the clinical findings and response to therapy.

*Hiṅgutriguṇa taila*⁴, *Pañcakarma* treatment with *Māṣādi Yoga*⁵, *Ekāṅgavīra rasa*⁶ have shown improvement in Hemiplegia patients.



c. Yogic practices - The following *yogic* practices are beneficial in Hemiplegia; however, these should be performed only under the guidance of qualified *Yoga therapist*. Duration should be decided by the *Yoga therapist*.

1. Practice of *Prāṇāyāma* (*Anuloma Viloma, Nāḍī śodhana, Bhrāmarī*) and meditation alongwith the practice of *Yama* and *Niyama*
2. Deep relaxation technique, *Yoga nidrā*
3. *Āsanās* to correct the postural imbalances

Counselling - Advise the patient to

1. Be active and optimum use of affected part
2. Grasp the spastic arm at wrist with unaffected arm and push it above head regularly (10-15 times at each time) for 3-4 times a day
3. Continue exercises as suggested by the physiotherapist
4. To increase the practice of exercise gradually
5. Take balanced diet
6. Maintain healthy body weight
7. Limit salt intake and fat in diet
8. Control of hypertension and diabetes mellitus
9. Check lipid profile periodically
10. Avoid over exertion
11. Avoid smoking and alcohol consumption

Indications for referral

1. Further deterioration
2. Patient with head injury requires surgical intervention.
3. Not responding to medication

The other neurological conditions like monoplegia (paralysis of one limb), paraplegia (paralysis of both lower limbs) and quadriplegia (paralysis of all four limbs) are also to be managed in the similar manner.



COSTING DETAILS

Approx. costing of Hemiplegia Management

| S.No. | Medicine | Requirement | Unit | Rate in Rs. | Cost in Rs. |
|-------|-----------------------------------|-------------|------|-------------|-------------|
| 1. | <i>Aśvagandhā cūrṇa</i> | 90-150 | gm | 0.48 | 44-88 |
| 1. | <i>Brāhmī svarasa</i> | 150-300 | ml | 0.75 | 113-226 |
| 2. | <i>Rasona kṣīra pāka</i> | 150-300 | ml | 0.5 | 75-150 |
| 3. | <i>Eraṇḍa taila</i> | 15-30 | ml | 0.48 | 07-14 |
| 4. | <i>Gandharva hastādi kvātha</i> | 300-600 | ml | 0.27 | 81-162 |
| 5. | <i>Sahacarādi kvātha</i> | 300-600 | ml | 0.28 | 84-168 |
| 6. | <i>Mahārāsnādi kvātha</i> | 300-600 | ml | 0.132 | 40-80 |
| 7. | <i>Brāhmī vaṭī</i> | 3.75-7.5 | gm | 4.4 | 17-34 |
| 8. | <i>Mānasa mitra vaṭaka</i> | 3.75 | gm | 5.73 | 22 |
| 9. | <i>Vātāri guggulu</i> | 30-45 | gm | 1.67 | 52-75 |
| 10. | <i>Trayodaśāṅga guggulu</i> | 30-45 | gm | 1.35 | 41-61 |
| 11. | <i>Balāriṣṭa</i> | 300-600 | ml | 0.24 | 72-144 |
| 12. | <i>Aśvagandhāriṣṭa</i> | 300-600 | ml | 0.43 | 130-260 |
| 13. | <i>Hiṅgutriguṇa taila</i> | 150 | ml | 1.02 | 153 |
| 14. | <i>Vātagajāṅkuśa rasa</i> | 3.75-7.5 | gm | 3.6 | 14-28 |
| 15. | <i>Vātakulāntaka rasa</i> | 3.75-7.5 | gm | 3.0 | 12-24 |
| 16. | <i>Yogendra rasa</i> | 3.75-7.5 | gm | 370 | 1388-2775 |
| 17. | <i>Bṛhatavāta cintāmaṇi rasa</i> | 3.75-7.5 | gm | 343 | 1287-2573 |
| 18. | <i>Ekāṅgavīra rasa</i> | 3.75-7.5 | gm | 7.4 | 28-56 |
| 19. | <i>Candana balā lākṣādi taila</i> | 200 | ml | 0.7 | 140 |
| 20. | <i>Kṣīrabalā taila</i> | 200 | ml | 0.68 | 136 |
| 21. | <i>Sahacarādi taila</i> | 200 | ml | 0.76 | 152 |
| 22. | <i>Dhānvantara taila</i> | 200 | ml | 0.41 | 82 |



| | | | | | |
|-----|------------------------------------|-----|----|------|-----|
| 23. | <i>Kārpāsāsthyādi taila</i> | 200 | ml | 0.30 | 60 |
| 24. | <i>Mahāmāṣa taila</i> | 200 | ml | 1.28 | 256 |
| 25. | <i>Mahā nārāyaṇa taila</i> | 200 | ml | 1.75 | 350 |
| 26. | <i>Nārāyaṇa taila</i> | 200 | ml | 0.51 | 102 |
| 27. | <i>Prabhañjana vimardana taila</i> | 200 | ml | 0.33 | 65 |

Approx. costing of *Pañcakarma* procedure in Hemiplegia**

| S.No. | <i>Pañcakarma</i> procedure | Days | Rate in Rs./ day | Cost in Rs. |
|-------|---------------------------------|------|------------------|-------------|
| 1. | <i>Snehana</i> (externally) | 21 | 200 | 4200 |
| 2. | <i>Ekāṅga sveda</i> | 21 | 100 | 2100 |
| 3. | <i>Sarvāṅga sveda</i> | 14 | 150 | 2100 |
| 4. | <i>Ṣaṣṭika śāli piṇḍa svēda</i> | 14 | 350 | 4900 |
| 5. | <i>Mātrā vasti</i> | 14 | 100 | 1400 |
| 6. | <i>Nirūha vasti</i> | 16 | 100 | 1600 |
| 7. | <i>Kṣīra vasti</i> | 14 | 150 | 2100 |
| 8. | <i>Nasya karma</i> | 7 | 100 | 700 |
| 9. | <i>Śirovasti</i> | 7 | 300 | 2100 |
| 10. | <i>Śirodhārā</i> (oils) | 7 | 300 | 2100 |
| 11. | <i>Śirodhārā</i> (milk) | 7 | 150 | 1050 |

** Procedural costing is based on the CGHS fixation package rates of Department of AYUSH.

