ABSTRACT

Background: Cerebrovascular accident (CVA) is the medical term for a stroke. A stroke is a medical condition in which poor blood flow to the brain results in death. There are two main types of stroke; ischemic, due to lack of blood flow and hemorrhagic, due to bleeding. They result in part of the brain not functioning properly. The most common symptom of a stroke is sudden weakness or numbness of the face, arm or leg, most often on one side of the body. Other symptoms include: confusion, difficulty in speaking or understanding speech; difficulty in seeing with one or both eyes; difficulty in walking, dizziness, loss of balance or coordination; severe headache with no known cause; fainting or unconsciousness. The main risk factor for stroke is high blood pressure. Other risk factors include tobacco smoking, obesity, high blood cholesterol, diabetes mellitus, a previous TIA and atrial fibrillation. Objective: Here an attempt is made to understand and apply the treatment principles of Pakshaghata based on the avarana concept and adopting suitable treatment modalities. Material & Method: The authentic subject material has been reviewed from Ayurveda & modern medical literature. Different research & review article were searched on internet. Discussion and conclusion: The management in contemporary science varies with that of the cause. CVA is broadly understood under the term Pakshaghata which is considered to be a Vata Vyadhi in Ayurveda, which can manifest due to Dhatu Kshaya leading to Kevala Vata Vyadhi or due to Avarana. The line of treatment varies according to the cause; Kevala Vata Janita Pakshagata Vatasya Upakrama can be employed and in case of Avarana; Avruta i.e.,kapha or meda or pitta to be relived first then it to be treated in lines of Kevala Vata Vyadhi Chikitsa. Thus the clinical approach to CVA varies accordingly with the dosha and Avastha of the vyadhi. Keywords: CVA, Pakshaghata, Vata Vyadhi, Dhatu Kshaya, Kevala VataVyadhi Chikitsa.

INTRODUCTION: WHO (World Health Organization) defined Stroke as “Rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than of vascular origin”¹. Stroke is said to be one of the leading causes of death and disability in India. The estimated adjusted prevalence rate of stroke range, 84-262 / 1,00,000 in rural and 334-424 / 1,00,000 in urban areas. The incidence rate is 119-145 / 100,000 based on the recent population based studies². The term CVA embraces of³– Diseases of cerebral arteries, Diseases of heart (In which it may adversely affect the blood supply to the brain by changes in blood pressure or as a source of emboli).Disorders of the blood (which may lead to impaired clotting, causing haemorrhage, hyper viscosity or hypercoagulable states which increase the tendency for cerebral thrombosis).
There are two main types of cerebrovascular accident, or stroke: an ischemic stroke is caused by a blockage, it may be due to embolus or thrombus; a haemorrhagic stroke is caused by the rupture of a blood vessel.

Symptoms typically start suddenly, over seconds to minutes, and in most cases do not progress further. The symptoms depend on the area of the brain affected.

Current approach to stroke in contemporary science:

**Aim of the treatment**
- Thrombolytic-alteplase(rt-PA)
- Reperfusion-recanalization
- Antiplatelets
- Anticoagulants
- Neuroprotective
- Symptomatic treatment
- Improving ADL

**Major drugs used**
- Thrombolitics
- Diuretics to reduce cerebral edema
- Aspirin, clopidogrel
- Warfarin, LMWH
- Citicoline, vitamins
- Management of HTN
- Physiotherapy

**Analysis of CVA (Stroke) in Ayurveda:**
CVA is broadly understood under the term Pakshaghata which is considered to be a Vata Vyadhi in Ayurveda, which can manifest due to Dhatu Kshaya leading to Kevala Vata Vyadhi or due to Avarana.

**Other conditions under which CVA can be understood are:**
- Prana Avritha Vyana / Pranavruta Samana
- Various etiological factors which in turn produce Srotorodha or Srotorodha in Murdhini cause this condition.
- Siragata Vata, Snayu Gata Vata, Madhyama Roga Marga Vyadhi, Marmasta Vyadhi, Karma Hani at Uttamanga.

- Srotorodha or Avarana to Rakta Sanchara, Dhatu Kshaya- Mastulunga Kshaya, Vata Pratilomata.

The word Pakshaghata includes 2 words Paksha and Agata. Acharya Dalhana comments Paksha as Paksham Shareerardham; Aghatahas several meanings it can be considered blow or injury, so we can consider Pakshaghata as one side reduced activity or complete loss of function.

**Nidana:**
Particular Nidana (Etiology) for Pakshaghata is not mentioned in classics, Ati Vyayama (Exessive exertion), Nitya Katu Rasa Sevana (Consuming pungent things), Ati Dhumapana (excessive smoking), Ati Madyapana (Excessive Alcohol intake), Chintha (worries) and...
General Vata Vyadhi Nidana can be considered.

**Samprapti Nidana Sevana**

- Kapha/ Pitta/Raktadusti occurs
- Formation of Ama
- Causes Margavarodha further
- Sthanasamsraya in Dhamanis and Siras
- Reaches Mashiiska / Uttamanga
- Causes Margavarodha
- Leads to obstruction of movement of Vata
- Karma Kshaya

**Pakshaghata**

**Samprapti Ghataka**
- Dosha - Vata Pradhana Tridosha
- Dushya - Rasa, Rakta, Mansa, Meda
- Agni - Jataragni, Dhatwagni
- Ama - Jataragni and Dhatwagni
- Janya Ama
- Srotas - Rasavah, Raktavaha, Mansavaha, Pranvaha
- Srotodushti Prakara-Sanga

**Udhhava Sthana** - Pakwashaya (Adho Amashaya and Urdhwa Pakwashaya)
- Sanchara Sthana - Rasayani, Vatavaha Sira
d. Urdhwa-Adha-Tiryak Dhamani
- Vyakta Sthana - Sarva Shareera
- Adhisthana - Shariardha Bhaga
- Vyadhi Swabhava - Chirakari, Ashukari
- Sadhya/Asadhyata - Krucchasadhya, Asadhya

**Clinical Features / Lakshanas**

<table>
<thead>
<tr>
<th>Clinical Features Seen in Stroke</th>
<th>Probable Co-Relation with Lakshanas Mentioned in Ayurveda Classics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudden numbness or weakness in the face, arm, or leg, especially on one side of the body</td>
<td>Ardha Kayasya Achetana, Vichetana16</td>
</tr>
</tbody>
</table>
Sudden trouble seeing in one or both eyes, Visual field defect | Stabdha Netrata, Akshi Ruk\(^17\), Indriya Bramsha\(^18\)

Sudden trouble walking, dizziness, loss of balance, or lack of co-ordination, Aphasia | Gati/ Sarva Kriyasu Asamarthaha i.e., hamper in functions of Vayana Vayu\(^19\)

Sudden severe headache with no known cause | Shanka Ruk\(^20\)

Aphasia, trouble speaking, Dysarthria | Vak Sanga\(^21\)/Muktav/ Gadgadatv\(^22\)

---

**Approach to stroke in Ayurveda**

1. **PAKSHAGATA**
   - CT SCAN/MRI BRAIN
   - VASCULAR NATURE CONFIRMED

2. **ACUTE INFARCT / BLEED**
   - AVARANA

3. **CHRONIC INFARCT**
   - DHATUKSAHYA

4. **AVARANA CHIKITSAKEVALA**
   - *Atyayika Chikitsa* –
     - Vacha Churna or Brihat Vata Chintamani rasa or Sameera pannaga rasa Pradhama Nasya for Sajna Prabhodana

**Kevala Vata Chikitsa**\(^23\)

<table>
<thead>
<tr>
<th>Snehana</th>
<th>In Kevala Vata Vyadhi + Dhatukshaya</th>
<th>Snehapan, Snehana Nasya, Abhyanga, Pizchil, Anuvasaana Basti</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snehapooyvaka Svedanam</td>
<td>In Hastha-Pada Sankocha, Ruk, Stthambha, Vakrata, Shoshsa</td>
<td>Nadi Sweda, Prastara, Sankara, Patra Pinda Sweda, Shastika Shali Pinda Sweda</td>
</tr>
<tr>
<td>Samshodhana</td>
<td>Mrudu samshodhana</td>
<td>Snigdha Virechana</td>
</tr>
<tr>
<td></td>
<td>Niruha basti</td>
<td>Rajayapan Basti</td>
</tr>
</tbody>
</table>

**Avarana Chikitsa**

<table>
<thead>
<tr>
<th>Vata</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittavruta Vata(^24)</td>
<td>Virechana, Jevaneeya Ghritha Pana, Yapana Basti, Ksheera Basti</td>
</tr>
<tr>
<td>Kaphavruta Vata(^25)</td>
<td>Snehapan with Purana Ghritha, Sarshapa Taila, Swedana Niruha Basti, Vamana, Virechana</td>
</tr>
<tr>
<td>Pranavruta Vyana(^26)</td>
<td>Snehana, Swedana, Pradhama Nasya, Virechana</td>
</tr>
</tbody>
</table>

**Shamana Oushadis**

<table>
<thead>
<tr>
<th>ACUTE</th>
<th>CHRONIC</th>
</tr>
</thead>
</table>
**DISCUSSION:** The neurological disorders can be manifested due to *Upahata Maruta* (Improper functioning of Vata), *Upahata Dhatu Ushma* (Agni Mandya leading formation of Ama) and *Upahata Srotas* (obstruction in the pathway) henceforth the main aim of the treatment lies in correcting this pathology. In all Vata Vyadhi Snehana is the first line of treatment mentioned in Ayurveda when it is a Kevala Vata Janita Vyadhi and Pakshaghata; in case of Avarana the relieving of Avarana becomes the first line of treatment followed by Snehana. As per Acharya Kashyapa Shiras is Moola for the Snayus; the main pathology involved in case of Pakshaghata is Sira and Snayu Shoshana(Mastalunga Kshaya-Snehamsha Kshaya) thus Snehana in terms of Snehapana, Murdhnini Taila or any other modes will do Samprapthi Vighatana.

**CASE EXAMPLES-**

- Gandharvahasthyadi taila 20 ml HS after food

**Post Treatment-**

Gait Improved

Muscle Power – 5/5 in Both Limbs,

There was no traces of patient had an Episode of stroke.

**Case 2**

A 55year old female who was a k/c/o hypertensive was brought to our OPD with sudden onset of weakness in left half of the body with tingling sensation in left half of the body.

O/E- K/C/O – Hypertension on OAH (Tab.Telma 20mg 1OD) since 20 years irregularly.

Altered sensorium, muscle weakness- left


Diagnosis- AVARANA JANYA

PAKSHAGATHA / LEFT SIDED HEMIPLEGIA

? Haemorrhagic.

**CT scan Brain (plain) - LACUNAR INFARCT DUE TO HYPERTENSIVE BLEED**

**Approach-**

Here the patient was treated to clear the *Upahata Srotas* the obstruction was

<table>
<thead>
<tr>
<th><strong>Tapyadi Loha</strong></th>
<th><strong>Sameerapannag Rasa</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Swarnamakshika Bhasma</strong></td>
<td><strong>Ekangaveera Rasa</strong></td>
</tr>
<tr>
<td><strong>Trailokiyachintamni Rasa</strong></td>
<td><strong>Vata Vidhvamsa Rasa</strong></td>
</tr>
<tr>
<td><strong>Manjishta Kwatha</strong></td>
<td><strong>Brihat Vata Chintamani Rasa</strong></td>
</tr>
<tr>
<td><strong>Shilajithu Rasayana</strong></td>
<td><strong>Smriti Sagara Rasa</strong></td>
</tr>
<tr>
<td><strong>Yogendara Rasa</strong></td>
<td><strong>Brahmi Vati</strong></td>
</tr>
<tr>
<td><strong>Kamadugha Rasa</strong></td>
<td><strong>Bhadradarvyadhi Kashaya</strong></td>
</tr>
<tr>
<td><strong>Rasara j Rasa</strong></td>
<td><strong>Ashtavarga Kashaya</strong></td>
</tr>
<tr>
<td><strong>Sameerapannag Rasa</strong></td>
<td><strong>Ekangaveera Rasa</strong></td>
</tr>
<tr>
<td><strong>Vata Vidhvamsa Rasa</strong></td>
<td><strong>Brihat Vata Chintamani Rasa</strong></td>
</tr>
<tr>
<td><strong>Smriti Sagara Rasa</strong></td>
<td><strong>Brahmi Vati</strong></td>
</tr>
<tr>
<td><strong>Bhadradarvyadhi Kashaya</strong></td>
<td><strong>Ashtavarga Kashaya</strong></td>
</tr>
</tbody>
</table>

**CASE 1**

46 years Old Male Diagnosed Left MCA Infarct with Right Sided Hemiplegia was admitted to our IPD After 15days Of ICU management.

O/E- Bowels – Constipated; Bladder – Catheterised.

No other Co-morbidss

**CRANIAL NERVES FUNCTION - INTACT**

Hemiplegic Gait

Muscle Power- UL- 3/5; LL- 3/5;

DTR - +++, Babinski – upwards fanning.

UMN Lesion

**Diagnosis – Dhatu Kshaya Janya Pakshaghata / Right Sided Hemiplegia**

**Approach –**

In this case initial Agni Lepa - Rukshana Chikitsa was carried out for 3 days; for Shesha Dosha Pachana later Snehana line of treatment was employed with Mustadi Rajayapana Basti- Kala Basti, Mastiskya.

For a Period of 14 days.

**Shamana oushadi – 30 days**

- Cap. Palsineuron 1 TID
- Tab. Tapyadi loha 2 BD
- Bhadradarvyadhi Kashaya
relieved by giving Pradhamana Nasya with Brihat Vata Chintamani 6tab thrice per day.

Talam- Vacha, Amalaki for 7 days
Arjuna Ksheera Paka as Pana FOR 14 days

Shamana oushadi - 7 days
- Cap. Palsineuron 1 TID
- Tab. Sagarlic 2 BD
- Gandharvahasthyadi taila 20 ml HS after food

Post Treatment
Patient has no signs and symptoms of weakness post 7 days further he was advised rehabilitation and physiotherapy.

CONCLUSION;
The treatment in neurological diseases poses a great challenge in modern medicine as they follow a chronic pattern with very insignificant improvement in treatment outcome. Understanding the disease with careful analysis of Avastha of Vyadhi, giving prime importance to the Dosha- Dooshya Samoorchana and underlying Avarana, an eminent physician should adopt the necessary modalities of treatment. Virechana is benefical in Pakshaghat in Margavarana Sampraptri. In treatment of Dhatu Ksayaja Pakshaghat Brimhana & Basti Karma are beneficial. Early management and rehabilitation is the need of the hour for the better prognosis and to minimize the residual effects of CVA.

REFERENCES:
1) www.who.int/healthinfo/statistics/bod_cerebrovasculardiseasetroke.pdf
2) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3859004/
4) https://www.healthline.com/health/cerebrovascular-accident/21/08/18


23) Vagbhata, Astanga Hrudyaya, Sarvanga Sundari Commentary of Arunadatta and
Ayurveda Rasayana Commentary of Hemadri, Edited by; Pandit Hari Sadasiva Sastri Paradikara Bhisagacharya, Choukambha Surabharati Prakashan, Varanasi, Reprint-2010, Sutra Sthana, Chapter - 13, Verse- 1-3, Pp - 956, Pg. No – 211.


Corresponding Author:
Dr. Rangarajan B
Email id: rangarajan1991@gmail.com