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Ayurvedic management of Acute Cerebrovascular Accident due to Hypertensive Bleed (*Pakshaghata*): A Case Report

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ABSTRACT

Stroke is defined as the fast onset of focal neurological deficit within which poor blood flow to the brain ends up in necrobiosis. It is the second most common reason for worldwide mortality. Hemorrhagic strokes are classified based on their underlying pathology. Some common causes of bleeding are hypertensive trauma, ruptured aneurism, arteriovenous fistula, transformation of previous ischemic pathology and drug-elicited hemorrhage. They result in tissue injury by inflicting compression of tissue from an expanding hematoma. *Pakshaghata* described in *Ayurveda* can be correlated with Stroke. All *Acharyas* have emphasized that in the manifestation of *Pakshaghata*, *Vata* is predominant with the association of *Pitta* and *Kapha Dosha*. Here is the case of 46 years old male diagnosed as an acute case of hypertensive bleed in the right centrum semiovale and putamen (Magnetic Resonance Image-MRI of Brain) resulting in left-sided hemiparesis. Assessments were done on the basis of National Institute of Health (NIH) Stroke Scale, Medical Research Council (MRC) Scale for Muscle Strength, Barthel Index and Scandinavian Stroke Scale. He was given *Yastimdhru Ksheera Nasya*, *Takra Shirodhara*, *Kalyanaka Ghrita* as *Anuvasana Basti* and oral medications. After 12 days of treatment there was marked improvement in these scales.

Key words: *Pakshaghata*, CVA, Stroke, hemorrhage, Ayurveda, Nasya, Shirodhara

INTRODUCTION

Stroke is the most common cause of neurological disability in the adult population^[1] and it is the third leading cause of death worldwide. It is responsible for 4.4 million deaths worldwide. The incidence of stroke increases with age and it is higher in men than women.^[2]

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Stroke is a clinical term for acute loss of blood circulation to the brain tissue. Spontaneous intracerebral hemorrhage occurs mostly in patients experiencing hypertension. The common sites of hypertensive intracerebral hemorrhage are the region of basal ganglia, Pons, and the cerebellar cortex. Clinically, the onset is typically fulminant with headache and loss of consciousness. Depending on the location of the lesion, hemispheric brain stem or cerebellar signs will be present. The explosive entry of blood into the brain parenchyma during primary intracerebral hemorrhage causes immediate cessation of function in that area, as neurons are structurally disrupted and the white matter fibre tract is split apart. A rim of cerebral edema forms around, resulting in a blood clot, which with the hematoma acts like a mass lesion. If big enough, this can cause a shift of intracranial contents, producing trans tentoria coning and 15% people die shortly after stroke.^[3] The description of the clinical signs and symptoms of stroke

can be interpreted with *Pakshaghata* in *Ayurveda* science. *Pakshaghata* has been enlisted among the eighty forms of *Vataja Nanatmaja Vyadhi* and explained in the *Madhyama Rogamarga*.^[4] *Acharya Charaka*, in *Chikitsa Sthana* describes *Pakshaghata* by saying that morbid *Vata* beholds either side of the body, dries up *Sira* and *Snayu* of that part and producing loss of motor activity with pain dysarthria/aphasia.^[5] This case report of *Pakshaghata* shows the successful outcome of the *Ayurvedic* intervention such as *Nasya*, *Takradhara*, *Basti* and *Shamanaushadhis*.

CASE REPORT

Patient Information

A male patient aged 46 years, who was conscious and oriented to time, place and person brought in a wheelchair to Kayachikitsa OPD of Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan on 19 October 2022 at 11 AM with the chief complaints of giddiness, reduced strength in the left upper and lower limb, headache, difficulty in getting up from lying position and walking, slurred speech, heaviness, pain and complete loss of sensation in the left upper and lower limb since 6 AM, got admitted on the same day under IPD No:061888.

History of Present Illness

The patient was apparently healthy in the morning, suddenly around 6 AM he developed giddiness followed by reduced strength in the left upper and lower limb, difficulty in sitting and walking without support, slurred speech and complete loss of sensation in the left upper and lower limb.

Clinical Findings

General Examination

Built, nutritional status, hair and nail of the patient are normal, pallor, clubbing, cyanosis, icterus, lymphadenopathy and edema were absent. Blood pressure was 140/80 mm of Hg and pulse rate was 80 beats /minute.

Systemic Examination

Respiratory system - on auscultation, normal bronchiovascular sounds heard and no abnormality detected.

Cardiovascular system - S1 S2 heard and no abnormality detected. Per abdomen was soft, nontender, no organomegaly detected. Central nervous system - Higher mental functions found to be normal. Glasgow coma scale - Eye opening response was - 4, verbal response - 5 and motor response - 6 total score - 15/15 Motor functions: • Power Left Upper and Lower limb - 2/5 Right Upper and Lower limb - 4/5 • Deep tendon reflexes such as biceps, triceps, supinator, knee jerk and ankle jerk on affected side (left) were found to be 3+ and on normal side (right) found to be 2+. Babinski's sign was present on left side. • Tone: Left upper and lower limb was hypotonic • Sensory functions: Left Upper and Lower limb fine touch - absent, crude touch - present, Left Upper and Lower limb fine and crude touch - present • Gait - hemiplegic with support.

Investigation

Magnetic Resonance imaging (MRI) of Brain done on 19/10/2022 showed acute hypertensive bleed in the right centrum semiovale and putamen without any intraventricular extension.

Diagnosis

Pittakaphavruta Vamaparshwa Pakshaghata (Acute Left sided Hemiparesis – ICH)

Treatment

Date	Medication/Procedure	Dose and Time
19/10/2022	<i>Dhanwantara Vati</i> <i>Rasaushadi Yoga - Ekangaveera Rasa, Mahavata Vidvamsana Rasa, Vatakulantaka Rasa, Vata Ganajankusha Rasa, Bala, Shuddha Shilajitu - Each 160mg</i> <i>Nadi Kashaya</i> Tab. <i>Anuloma DS</i>	2 TID B/F (S/L) TID A/F 100 ml OD Morning A/F 1 HS A/F
	<i>Shiropichu with Ksheerabala Taila</i> <i>Nasya with Ksheera Saditha Yastimadhu</i>	OD 8 Drops in Each Nostril TID A/F

20/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	<i>Nadi Kashaya</i>	100 ml OD Morning A/F
	Tab. <i>Anuloma DS</i>	1 HS A/F
	<i>Shiropichu with Ksheerabala Taila</i>	OD 8 Drops in Each Nostril TID A/F
	<i>Nasya with Ksheera Saditha Yastimadhu</i>	
21/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Sukumara Ghrita</i>	10 ml OD B/F (Morning)
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	<i>Nadi Kashaya</i>	100 ml OD Morning A/F
	Tab. <i>Anuloma DS</i>	1 HS A/F
	<i>Shiropichu with Ksheerabala Taila</i>	OD 8 Drops in Each Nostril TID A/F
	<i>Nasya with Ksheera saditha Yastimadhu</i>	
	<i>Takradhara</i>	OD
	<i>Sarvanga Parisheka with Dashamoola Kwatha and Dhanyamla</i>	OD
22/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Sukumara Ghrita</i>	10 ml OD B/F (Morning)
	<i>Punarnavashtaka Kashaya</i>	15 ml + 1 tsp jaggery TID A/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	Tab. <i>Anuloma DS</i>	1 HS A/F
	<i>Takradhara</i>	OD
	<i>Sarvanga Abhyanga with Ksheerabala Taila Followed by Parisheka with Dashamoola Kwatha and Dhanyamla</i>	OD
23/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Sukumara Ghrita</i>	10 ml OD B/F (Morning)

	<i>Punarnavashtaka Kashaya</i>	15 ml + 1 tsp jaggery TID A/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	Tab. <i>Anuloma DS</i>	1 HS A/F
	<i>Takradhara</i>	OD
	<i>Sarvanga Abhyanga with Ksheerabala Taila Followed by Parisheka with Dashamoola Kwatha and Dhanyamla</i>	OD
24/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Punarnavashtaka Kashaya</i>	15 ml + 1 tsp jaggery TID A/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	Tab <i>Anuloma DS</i>	1 HS A/F
	<i>Takradhara</i>	OD
	<i>Sarvanga Abhyanga with Ksheerabala Taila followed by Parisheka with Dashamoola Kwatha and Dhanyamla</i>	OD
	<i>Anuvasana Basti with Kalyanaka Ghrita</i>	40 ml OD A/F
25/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Punarnavashtaka Kashaya</i>	15 ml + 1 tsp jaggery TID A/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	Tab <i>Anuloma DS</i>	1 HS A/F
	<i>Takradhara</i>	OD
	<i>Sarvanga Abhyanga with Ksheerabala Taila followed by Parisheka with Dashamoola Kwatha and Dhanyamla</i>	OD
	<i>Anuvasana Basti with Kalyanaka Ghrita</i>	60 ml OD A/F
26/10/2022	<i>Dhanwantara Vati</i>	2 TID B/F
	<i>Punarnavashtaka Kashaya</i>	15 ml + 1 tsp jaggery TID A/F
	<i>Rasaushadi Yoga</i>	(S/L) TID A/F
	Tab <i>Anuloma DS</i>	1 HS A/F

	<i>Takradhara</i> <i>Sarvanga Abhyanga</i> with <i>Ksheerbala Taila</i> followed by <i>Parisheka</i> with <i>Dashamoola Kwatha</i> and <i>Dhanyamla</i> <i>Anuvasana Basti</i> with <i>Kalyanaka Ghrita</i>	OD OD 80 ml OD A/F
27/10/2022	<i>Dhanwantara Vati</i> <i>Punarnavashtaka Kashaya</i> <i>Rasaushadi Yoga</i> <i>Tab Anuloma DS</i> <i>Takradhara</i> <i>Sarvanga Abhyanga</i> with <i>Ksheerbala Taila</i> followed by <i>Parisheka</i> with <i>Dashamoola Kwatha</i> and <i>Dhanyamla</i> <i>Anuvasana Basti</i> with <i>Kalyanaka Ghrita</i>	2 TID B/F 15 ml + 1 tsp jaggery TID A/F (S/L) TID A/F 1 HS A/F OD OD 80 ml OD A/F
28/10/2022	<i>Dhanwantara Vati</i> <i>Punarnavashtaka Kashaya</i> <i>Rasaushadi Yoga</i> <i>Tab Anuloma DS</i> <i>Takradhara</i> <i>Sarvanga Abhyanga</i> with <i>Ksheerbala Taila</i> followed by <i>Parisheka</i> with <i>Dashamoola Kwatha</i> and <i>Dhanyamla</i> <i>Anuvasana Basti</i> with <i>Kalyanaka Ghrita</i>	2 TID B/F 15 ml + 1 tsp jaggery TID A/F (S/L) TID A/F 1 HS A/F OD OD 90 ml OD A/F
29/10/2022	<i>Dhanwantara Vati</i> <i>Punarnavashtaka Kashaya</i> <i>Rasaushadi Yoga</i> <i>Tab Anuloma DS</i> <i>Sarvanga Abhyanga</i> with <i>Ksheerbala Taila</i> followed by <i>Bhaspa Sweda</i>	2 TID B/F 15 ml + 1 tsp jaggery TID A/F (S/L) TID A/F 1 HS A/F OD

	<i>Anuvasana Basti</i> with <i>Kalyanaka Ghrita</i>	100 ml OD A/F
30/10/2022	<i>Dhanwantara Vati</i> <i>Punarnavashtaka Kashaya</i> <i>Rasaushadi Yoga</i> <i>Tab Anuloma DS</i> <i>Sarvanga abhyanga</i> with <i>Ksheerbala Taila</i> followed by <i>Bhaspa Sweda</i> <i>Anuvasana Basti</i> with <i>Kalyanaka Ghrita</i>	2 TID B/F 15 ml + 1 tsp jaggery TID A/F (S/L) TID A/F 1 HS A/F OD 100 ml OD A/F
31/10/2022	Discharged with following medications <i>Dhanwantara Vati</i> <i>Rasaushadi Yoga</i> <i>Tab. Anuloma</i>	2 TID B/F 1 TID A/F 1 HS A/F

OBSERVATIONS AND RESULTS

The condition of the patient was improved gradually along with the course of the treatment. The strength and power of both left upper and lower limb was increased to 4+/5, also tone of the muscle were improved and deep tendon reflex were normal after the course of treatment. Gait before treatment was hemiplegic and at the time of discharge it was reduced and was able to walk without support.

Assessment Scales

NIH Stroke Scale

Assessment	Score	
	BT	AT
1.a. Level of consciousness	0	0
1.b. LOC questions	0	0
1.c. LOC commands	0	0
2. Best gaze	0	0
3. Visual	0	0

4. Facial palsy	1	0
5. Motor arm	2	0
6. Motor leg	2	0
7. Limb ataxia	0	0
8. Sensory	2	1
9. Best language	0	0
10. Dysarthria	1	0
11. Extinction and Inattention (formerly Neglect)	0	0
Total:	8	1

Ankle reflex	Normal = 2+	Exaggerated = 3+	Normal = 2+	Normal = 2+
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Muscle Tone

Assessment	BT	AT
Right upper limb	Normotonic	Normotonic
Right lower limb	Normotonic	Normotonic
Left upper limb	Hypotonic	Normotonic
Left lower limb	Hypotonic	Normotonic

Barthel Index

Assessment	BT	AT
1. Feeding	5	10
2. Bathing	0	5
3. Grooming	0	5
4. Dressing	5	10
5. Bowel	10	10
6. Bladder	10	10
7. Toilet use	5	10
8. Transfers	10	15
9. Mobility	10	15
10. Stairs	5	10
Total score (100)	60	100

Muscle Power (MRC Scale for Muscle Strength)

Assessment			BT	AT
Right	UL	Prox	5	5
		Dist	5	5
	LL	Prox	5	5
		Dist	5	5
Left	UL	Prox	2	4
		Dist	2	4
	LL	Prox	4	5
		Dist	4	5

Deep Tendon Reflexes

Assessment	BT		AT	
	Right	left	Right	left
Biceps reflex	Normal = 2+	Exaggerated = 3+	Normal = 2+	Normal = 2+
Triceps reflex	Normal = 2+	Exaggerated = 3+	Normal = 2+	Normal = 2+
Knee reflex	Normal = 2+	Exaggerated = 3+	Normal = 2+	Normal = 2+

Scandinavian Stroke Scale

Assessment	BT	AT
Consciousness	6	6
Eye movement	4	4
Arm motor power	4	6
Hand motor power	4	6

Leg motor power	4	6
Orientation	6	6
Speech	6	10
Facial palsy	0	2
Gait	6	12
Total score (58)	40	58

DISCUSSION

Pakshaghata is described as one of the *Vatavyadhi*. *Vata* is the main *Dosha* in the pathology of *Pakshaghata*. Vitiating of *Vata* is caused by *Dhatukshaya* (depletion of *Rakta-ICH*). Hence, in this case *Pithahara* and *Rakta Prasadaka* treatment was first initiated with *Shiropichu* with *Ksheerabala Taila* and *Nasya* with *Yastimadhu Ksheera*.

Shiropichu: *Ksheerabala Taila Shiropichu* helps in pacifying the *Pitha* and *Vata Dosha* and nourishing the *Indriya* (motor and sensory activity). *Pichu* was advised for 7-8 hrs. It works through action on *Tarpaka Kapha*, *Sadhaka Pitta* and *Prana Vayu*. *Shiropichu* may be helpful in regularizing the blood supply of brain and reducing the neurological symptoms.^[6]

Nasya: *Yastimadhu* being *Pithashamaka* and *Medhya*, *Ksheera* being *Pithashamaka* in combination which is of *Sheeta Guna* administered as *Nasya* helps in pacifying *Pitha Dosha* and nourishing the *Indriya* (motor and sensory activity). *Yastimadhu* has pharmacological actions like cerebroprotective, anticonvulsant and memory enhancing effects.^[7]

Takradhara: *Takradhara* with the combination of *Amalaki* and *Dhanyaka Choorna*, with its *Pithahara* properties does *Indriya Prasadana*, produces relaxing effect, enhance the alertness and concentration abilities, improves cerebral function and anxiolytic action.^[8]

Abhyanga: *Ksheerbala Taila* is used for *Abhyanga* followed by *Sarvang Parisheka* with *Dashamoola Kwatha* and *Dhanyamla*. *Ksheerbala Taila* nourishes *Dhatu* and provides strength. It constitutes of *Bala*,

cow milk, and sesame oil, which pacify the *Vata* and *Pitta Dosha*.^[9]

Anuvasana Basti: *Vata* is seen as the main aggravating factor and *Basti Chikitsa* is regarded as the prime line of treatment for it. Medicated enema helps to eliminate vitiated *Dosha* from the body, increases the strength and spreads the potency of the drug due to its *Prabhava* (specific action). The potency of *Basti* drug acting on *Dosha* brings them into normalcy and provides them with nourishment. Just as the farm gets its nourishment from water supplied through channels, the whole body gets nourishment from *Virya* (potency) of the enema drug carried by five types of *Vata* through *Srotas*.^[10] *Anuvasana Basthi* was given with *Kalyanaka Ghrita* clears *Majja Dhatugata Vikara* and also has nootropic^[11] and neuroprotective property.^[12]

Shamana Aushadhi

Dhanvantara Vati: The major ingredients are *Ela*, *Shunti*, *Haritaki*, *Jiraka* helps in *Deepana*, *Vatanulomana*.^[13]

Tab. Anuloma DS: It is a combination of *Swarnapatri* (*Senna*), *Ajamoda*, *Jiraka*, *Haritaki*, *Yastimadhu*, *Shunti* and *Saindhava Lavana* helps in *Anulomana Karma*.^[14]

Rasaushadi Yoga

Ekanga Veera Rasa explained in *Rasayoga Sagara* possesses *Deepana*, *Pachana*, *Atiteekshana*, *Brimhana* and *Rasayana* property.^[15]

Maha Vata Vidvamsana Rasa explained in *Rasa Tantra Sara* possesses *Vatahara*, *Balya* and *Rasayana* properties.^[16]

Vatakulantaka Rasa explained in *Bhaishajya Ratnavali* Possesses *Deepana*, *Vatahara*, *Brimhana* and *Rasayana* properties.^[17]

Vata Gajankusha Rasa explained in *Bhaishajya Ratnavali* Possesses *Deepana*, *Vatanulomaka*, *Balya*, *Rasayana*, *Vata Pradhana Tridosha Shamaka*.^[18]

Nadi Kashaya: It is a *Kashaya* prepared out of *Atasi*, *Rasna*, *Ajamoda*, *Shunti*, *Jeeraka*, *Bakuchi*, *Musta*, *Triphala*, *Bala* and *Dashamoola* proved to have *Vatahara* and *Balya* properties.^[19]

CONCLUSION

This case study demonstrates the successful management of Acute CVA (hypertensive bleed in the right centrum semiovale and putamen) by *Ayurveda* principles. The significant improvement was assessed by National Institute of Health (NIH) Stroke Scale, Medical Research Council (MRC) Scale for Muscle Strength, Barthel Index, Scandinavian Stroke Scale. Significant recovery and improvement were seen in deep tendon reflexes, walking without support, speech, fine touch and in the quality of life within 15 Days. So, this case was believed to be value documenting.

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