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Multifacet approach towards *Pakshaghata* - A Successive Case Study

Rachana P. Badaji¹, Abdul Khader²

¹Post Graduate Scholar, Department of Kayachikitsa, Sri Kalabyraveshwara Swamy Ayurvedic Medical College Hospital and Research Centre, Bengaluru, Karnataka, India.

²Professor, Department of Kayachikitsa, Sri Kalabyraveshwara Swamy Ayurvedic Medical College Hospital and Research Centre, Bengaluru, Karnataka, India.

ABSTRACT

Pakshaghata is one among the 80 *Vataja Nanatmaja Vikaras*. It is a condition which one half of the body is affected leading to the *Ruja*, *Vaksthamba*, *Karmahani* etc. Prognosis depends on many factors including *Vaya*, *Bala*, *Dosha* involvement etc. In contemporary science it can be correlated to the Cerebrovascular disease.

Methodology: A 58 Years old Female Patient who is known case of RA since 20 years and HTN since 2 years under medication approached to OPD of SKAMCH & RC Bangalore in a stretcher, with a *Lakshana* of reduced strength in right half of the body, pain, loss of function, sensation, slurred speech and was unable to walk. Based on the clinical presentation and *Ayurvedic* parameters, the condition was diagnosed as *Pakshaghata* with special reference to the Haemorrhagic Stroke with Hemorrhage in Sub cortical Region Involving MCA and *Chikitsa* was adopted keeping in the *Dhatukshayajanya* pathology as a base. *Sarvanga Abhyanga*, *Sarvanga Nadi Sweda* and *Rajayapana Yoga Basti* and Physiotherapy was adopted as a treatment modality. *Shamanoushadi* like *Brihatavatachintamani Rasa*, *Nityananda Rasa*, *Arogyavardhinirasa* Capsule, *Palsineuron*, *Dhanvantarum Kashaya*, *Mahamanjishtadi Kashaya* and *Sahacharadi Kashaya* were prescribed. **Result:** After 1 month of treatment and follow up, there were drastic improvements in the sign and symptoms. Assessment done on the SS-QoL Scale and Barthes index for stroke shown significant result. **Discussion:** This article is a discussion about a case of Hemorrhagic Stroke of Brain successfully treated with *Ayurvedic* approach.

Conclusion: The above described sets of *Panchakarma* treatment along with *Shamanoushadi* has shown significant result clinically with speedy recovery within a month in the present Case study.

Key words: *Pakshaghata*, *Cerebrovascular accident*, *Rheumatoid arthritis*, *Rajayapana Basthi*

INTRODUCTION

The term *Pakshaghata* literally means "paralysis of one half of the body" where "*Paksha*" denotes either half of the body and "*Aghata* (paralysis)" denotes the impairment of *Karmendriyas*, *Gyanendriyas* and

Manas. *Gyanendriya* constitute an important part of the sensory system, while *Karmendriyas* denote an important part of the motor system and *Manas* is supposed to control both. Hemiplegia is the commonest manifestation of a stroke with Neurological deficit affecting face, limbs and Trunk on one side of the body. The Stroke is one of the leading causes of the death and disability in India. The cumulative incidence of stroke ranged from 105 to 152/100,000 persons per year, and the crude prevalence of stroke ranged from 44.29 to 555/100,000 persons in different parts of the country during the past decade.^[1] Based on research studies revealed that patients with autoimmune diseases such as RA and SLE were more vulnerable to cerebral vascular accidents (CVA) where systemic inflammation in the pathogenesis of autoimmune disease interacts and accelerates vessel Atherosclerosis.^[2,3] The

Address for correspondence:

Dr. Rachana P. Badaji

Post Graduate Scholar, Department of Kayachikitsa, Sri Kalabyraveshwara Swamy Ayurvedic Medical College Hospital and Research Centre, Bengaluru, Karnataka, India.

E-mail: rachuma03@gmail.com

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incidence of Stroke increased in patients who had suffered from autoimmune diseases for longer period.^[4] So in this case patient who is K/C/O Rheumatoid arthritis since 20 years on medications and HTN since 2 years on irregular medication since 2 months for which might play a role in the increased cardiovascular risk and stroke. As pathophysiology of Cerebrovascular disease divided into those in which insufficiency of blood supply causes ischemic injury and those in which Haemorrhagic i.e., bleeding either into Parenchyma or into space between the pial and arachnoid covering over the brain or spinal cord (Sub arachnoid space). The injury may be focal, multifocal or diffuse.^[5] As Hypertension Patient with RA have less flexible artery that can't widen enough to let more blood through narrow arteries. As the patient on irregular medication for HTN which may be cause for increased intracranial Pressure leading Haemorrhagic stroke.

CASE REPORT

A patient aged 58 years, married female from Goddu Village, Sakleshpura [Taluk] Hassan [District] Karnataka was brought on stretcher to Kayachikitsa Outpatient Department of Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital and Research Centre on 18/02/20203 with complaints of reduced strength in the right half of the body with difficulty to sit, walk and perform daily activities, Slurred speech and Dribbling of fluids while drinking from right side of mouth since 8 days and Patient c/o Fever and Bodyache since one day and got admitted on same day. The subject was a previously diagnosed case of Cerebrovascular accident.

History

A Female patient aged 58years who is a known case of Rheumatoid arthritis since 20years and Hypertension since 2 years under medications and, Left HTN medication for 2 months. Patient was apparently healthy 8 days before, on 10/01/2023 around 10:00pm after Dinner, patient went out of the home for washroom, she felt numbness in Right upper limb and lower limb, she went inside Kitchen and she felt reduced strength in right half of the body associated with slurring of Speech and she fell on the floor. After

10minutes her family members saw and shifted her to the bed, she had impaired conscious on that time and tried to warm up the body after 1 hour she had an episode of Vomiting, no history of Headache and Seizures. Later taken her to the nearby Clinic, Doctor told that their High BP they treated with Antihypertensive Medicine [Unknown]. They advised to take for Higher Centre, on the same day around 2:30pm she was shifted to Apollo BGS Hospital, Mysore. Where they advised for MRI and Blood investigations. MRI T2 diffusion brain was done which revealed Acute left thalamocapsular hematoma, likely hypertension etiology. On Neurological examination, she had Dysarthria and Right sided Hemiplegia and admitted in ICU for further monitoring her BP was controlled with IV and oral Antihypertensive, She had Urine retention and Foley's catheterization was done. After 2 days she was shifted to general ward from ICU and advised with Physiotherapy. Patient was improved with her symptoms and slurring of speech reduced and she was discharged with oral medication on 18/01/2022. On the same day 18/01/23 evening, Patient experienced reduced strength in right half of the body with slurring of speech and was unable to walk for which she approached our SKAMCH & RC, OPD on Stretcher.

Poorva Vyadhi Vruttanta

Patient was suffering from Rheumatoid arthritis since 20years under medication and Hypertension since 2 years under medication and Left medication for 2 months.

Physical Examination

Attitude: Lying on bed in supine position with semi flexed right elbow.

Built: Poorly built

Nourishment: Moderate nourishment

P:Absent, E:Absent, N:Absent, C:Absent, I:Absent, L:Absent

Temperature: 98.1°F

Pulse: 76/min

Respiratory rate: 18 / min

BP: 140/80mm Hg

Height: 150cm

Weight: 46kg

BMI: 20.4 kg/m²

Heart rate: 76/min

Tongue: Uncoated

Ashtasthana Pareeksha

Nadi: 76/min

Mutra: On Catheterization

Mala: Once in a day [Regular]

Jihwa: Alipta

Shabda: Slurred speech

Sparsha: 98.1°

Drik: Prakruta

Akruti: Avara

Systemic Examination

Central Nervous System

Higher mental Function:

Level of consciousness: Conscious

Orientation to time, place and person: Intact

Memory: Intact

Manner, Affect and relationship to people and things:
Normal

Cranial Nerve Examination

5th Cranial Nerve - Trigeminal Nerve

Sensory:

Light Touch, Pin Prick and Temperature - Not perceived
in Right side of the body

Motor:

Deviation of Jaw : Absent

Movement of Jaw : Possible

Clenching of teeth : reduced in left side

Opening of mouth against resistance : possible

Reflexes

Jaw jerk : Present

Corneal reflex : Present

7th Cranial Nerve - Facial Nerve

Sensory

Sense of taste in anterior 2/3rd of Tongue: Reduced

Sensation of Face: Reduced in right side

Motor

Eyebrow raising : Possible

Frowning of forehead : Possible

Complete closure of eyes : Possible

Clenching of teeth : Reduced in right side

Blowing of cheek : Reduced in right side

Naso-labial fold : Flattened on right side

Taste perception : Reduced taste perception

Dribbling of saliva : Absent, Fluid leakage while in right
side of mouth

11th Cranial Nerve - Accessory Nerve

Trapezius muscle:

Atrophy : Absent

Fasciculation's - Absent

Shoulder droop : Absent

Shoulder shrugging

With resistance : reduced in right side

Without resistance : reduced in right side

Sternocleidomastoid Muscle:

Atrophy : Absent

Fasciculation : Absent

All other Cranial Nerves are Intact.

Sensory System

Light touch

Superficial pain

Deep pain

Temperature

} Reduced Perception

Proprioception:

Position : Normal

Vibration : Normal

Stereognosis of Objects : Can able to recognize

Graphesthesia : Not able to identify in Right, Normal in left

One point Location : Not able to identify in Right, Normal in left

Two point discrimination : Not able to identify in right half of the body

Motor System:

Gait : Unable to walk

Muscle Bulk:**Table 1: Showing the circumference measurement**

Muscle Bulk	Right side of Body	Left side of body in cm
Mid-calf circumference	26cm	26cm
Mid-thigh circumference	40cm	40cm
Mid-arm circumference	22cm	22cm
Mid-Forearm circumference	16cm	16cm

Muscle Tone:**Table 2: Showing the type of muscle tone**

	Muscle Tone
Right Upper Limb	Hypertonic Spasticity: Clasp Knife Spasticity
Left Upper Limb	Normotonic
Right Lower Limb	Hypertonic Spasticity - Clasp Knife Spasticity
Left Lower Limb	Normotonic

Muscle Power:**Table 3: Showing the Muscle Power**

	Right	Left
Upper Limb	3/5	5/5

Lower Limb	3/5	5/5
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Table 4: Co-ordination Test

Tests	Right	Left
Romberg's Test	couldn't elicit	couldn't elicit
Finger Nose Test	Not able to perform	Intact
Heel Shin Test	Not able to perform	Not able to perform
Tandem Walking	Not able to perform	Not able to perform
Dysdiadokinesia	Absent	Absent

Reflexes:**Superficial Reflex:**

Corneal reflex :Present

Abdominal reflex :Present

Plantar reflex Right foot: Extension of great toe

Left foot: Normal

Table 5: Deep Tendon Reflexes

Reflexes	Right	Left
Biceps	4+	2+
Triceps	4+	2+
Supinator	4+	2+
Knee jerk	4+	2+
Ankle jerk	4+	2+

- Respiratory system - on auscultation, normal sounds heard and no abnormality detected.
- Cardiovascular system - S1 S2 heard and no abnormality detected.
- Gastrointestinal system - Soft, non-tender, no organomegaly detected

Laboratory Investigation

Table 6: CT Scan Brain Without Contrast

Date	CT Scan Impression
On 10/01/2023	MRI T2 diffusion brain was done which revealed Acute left thalamocapsular hematoma, likely hypertension etiology.
On 12/01/2023	Acute Hematoma with mild perilesional edema involving the left thalamocapsular region. Hematoma measure 2.3x1.2cm.

2D ECHO with Color Doppler on

- Concentric LV Hypertrophy
- No LV RWMA
- Good LV Systolic Function [LVEF - 58%]
- No Pericardial effusion and No Vegetation/clots

Nidana Panchaka

- Aharaja Nidana: Abhojana, Alpa and Laghu Bhojana, Ati Lavana Sevana, Ati-Dadi Sevana*
- Viharaja Nidana: Ati Adwa, Ati Santapa, Shrama, Divaswapna* [exposure to wind and sun when she was going to farm for work]
- Manasika Nidana: Chinta*
- Other: Rogatikarshanat* due to *Chirakaala Vyadhi Avastha*,
- K/C/O Rheumatoid arthritis since 20 years, K /C/O Hypertension since 2 years left for 2 months, Intake of long term medication for Rheumatoid arthritis [DMARD's].

Poorvaroopa

Increased Blood pressure due to irregular Hypertensive medications

Roopa

Chesta Nivrutti of Dakshina Parshva Shareera

Ruja

Vakstamba

Karma-Chestahani

Samprapti:

Due to *Nidana Sevana*



Vata Pradhana Tridosha Dushti



Jataragni Upahata



Leads to the formation of *Ama*



Shonita Abhishyandata



Sthanasamshraya in *Dhamani* and *Sira* of *Shiras*



Shiromarma Abhigata due to *Atiraktachhapa*



Rakta Srava in *Shiras*



Leads to obstruction of movement of *Vata* by *Rakta* leading to *Dhatukshaya*



Karmakshaya leads to **Pakshaghata**

Samprapti Ghataka

- Dosha - Vata Pitta Pradhana Tridosha*
- Dushya - Rasa, Rakta, Mamsa, Medha, Asthi, Majja, Sira and Snayu*
- Srotas - Rasavaha, Raktavaha, Mamsavaha, Medovaha, Vatavaha*
- Srotodushti - Atipravrutti, Vimargagamana*
- Agni - Jataragni and Dhatwagni*
- Udbhavasthana - Pakwashaya*
- Sancharasthana - Rasayini's*
- Adhishthana - Masthiskhagata Shiras*
- Vyaktstana - Ardhakaya*

- Rogamarga - Madhyama
- Vyadhi Swabhava - Chirakari
- Sadhya Asadhyata - Kruchrasadhya

Table 7: Differential Diagnosis

Disease	Lakshanas	Inclusion	Exclusion
Ardita	Ardhamukha Sankocha, Vakrata of Nasa, Bhru, Lalata, Akshi, Hanu, Stabda Netrata, Deena, Samutshipa, Danta Chalana, Msravana Badha, Pada, Hasta, Akshi, Janga, Uru, Shank, Shravana, Ganda Ruk, Vak Sangha, Netradeenam Vikruti	Vaksthamba	All other symptoms are Absent
Sarvanga Vata	Vata Prakopa in Sarva Deha leads to Hasta Pada Sanckocha	Sankocha of Hasta and Pada of right side of the body	All four limbs are not affected
Pakshaghata	Cheshta Nivrutti of Ardha Shareera, Ruja, Vakstamba	Cheshta Nivrutti of Ardha Shareera, Vakstamba	

Diagnosis

Table 8: Diagnosis based on anatomical location

Signs	UMN lesions	LMN lesions	Extra pyramidal	Cerebellar
Power	Weakness	Weak	No Weakness	No Weakness
Wasting and atrophy	Absent	Absent	None	None

Fasciculation's	Absent	Absent	None	None
Tone	Spasticity	Flaccidity	Rigidity[Cog wheel]	Normal/Reduced
Deep tendon reflexes	Exaggerated	Reduced/Absent	Normal	Normal/Pendular
Superficial reflex	Lost	Lost	Normal	Normal
Plantar response	Extensor	Flexor	Flexor	Flexor
Coordination	Reduced due to weakness	Reduced due to weakness	Normal but Slow	Impaired

Table 9: Diagnosis based on location of the brain

Cortical	Subcortical	Brain Stem
<ul style="list-style-type: none"> ▪ Monoplegia/ Contralateral hemiplegia ▪ Speech disturbance ▪ Jacksonian convulsions and headache ▪ Cortical type of sensory loss 	<ul style="list-style-type: none"> ▪ Monoplegia / Contralateral hemiplegia ▪ Speech disturbance ▪ Loss of tactile localization and discrimination 	<ul style="list-style-type: none"> ▪ Vertigo ▪ Nausea ▪ Vomiting ▪ Crossed hemiplegia ▪ Brainstem syndrome. ▪ Horner's syndrome. ▪ Cerebellar involvement <p>Pons</p> <ul style="list-style-type: none"> ▪ Deep coma, Pin point pupil, hyperpyrexia, decortical rigidity, Absence of lateral movement of eye on head turning.

		Mid brain and medulla <ul style="list-style-type: none"> ▪ Loss of consciousness, ▪ Quadriplegia ▪ Cheyne stroke breathing ▪ Decerebrate rigidity
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Table 10: Diagnosis based on Etiology

	Cerebral hemorrhage	Cerebral thrombosis	Embolism
Onset	Sudden	Slowly	More sudden
Precipitating factor	During exertion	During sleep	During exertion
Headache	Severe	Less	Absent
Vomiting	Common	Less	Less
Convulsion	Absent	Common	Rare
Unconsciousness	Common	Variable	Rare
Neck stiffness	May present	Absent	Absent
Blood pressure	High	May be high	Normal
Pulse	Low	Normal	Irregular
Shifting Hemiplegia	Never	Never	May present
Cheyne-stroke breathing	Usually present	Usually absent	Usually absent

Based on the Progression of the Disease

- Transient ischemic attack (TIA)
- Stroke in evolution
- Completed stroke
- Reversible ischemic neurological deficit (RIND)
- **Partial non-progressive stroke (PNS)**

Diagnosis

Dakshina Parshva Pakshaghata in terms of CVD with Right Sided Hemiplegia due to Hemorrhage in Sub cortical Region Involving MCA.

Therapeutic Intervention

Considering the Symptoms, Condition of the patient treatment was adopted at different Phases by seeing the response for the treatment.

Table 11: Course of Treatment

Date	Treatment Given	Observation
1st Phase 18/01/2023 to 24/01/23 For 7 days	1. <i>Sarvanga Abhyanga</i> with <i>Dhanwantarum Taila</i> 2. <i>Mridhu Nadi Sweda</i> 3. Physiotherapy	<ul style="list-style-type: none"> ▪ Pt c/o reduced strength in right half of the Body improved 10-15%. ▪ Pt was able to sit with support. ▪ Pt c/o slurred speech reduced to 30-40% ▪ Pt c/o dribbling of fluid from right side of the mouth reduced to 40-50% ▪ Pt c/o fever, Body pain reduced. ▪ Pt c/o Pain in flank

		region while lifting right hand after 4 days Rx			of the mouth reduced to 60%
2nd Phase From 24/01/23 to 30/01/23 For 7 days	1. <i>Sarvanga Abhyanga with Dhanwantarum Taila</i> 2. <i>Mridhu Nadi Sweda</i> 3. Physiotherapy Oral medication added	<ul style="list-style-type: none"> Pt c/o reduced strength in right half of the body improved to 40-50%. Pt was able to walk with support of other persons. Catheter was removed after she was able to walk with support. Pt c/o Pain in flank region while lifting right hand reduced 70%. Pt c/o slurred speech improved to 60%. Pt c/o dribbling of fluid from right side 			<ul style="list-style-type: none"> Pt was trying to take food with herself Intake of food quantity increased.
2nd Phase 31/01/23	<i>Sadyovirechana</i> with <i>Gandharvahasthadi Taila</i> 45ml with 1 glass of warm milk was given in empty stomach morning around 8:40am after <i>Sarvanga Abhyanga with Dhanwantarum Taila F/B Mridhu Nadi Sweda</i>			Total No of Vegas : 04 Advised to take <i>Ganji</i> in the Evening. Pt was feeling mild tiredness. <i>Samsarjana Krama</i> done for 1 day	
3rd Phase 2/2/23 to 9/2/23 For 8 days	1. <i>Sarvanga Abhyanga with Dhanwantarum Taila</i> 2. <i>Mridhu Nadi Sweda</i> 3. Physiotherapy 4. <i>Rajayapana Yoga Basti</i>				<ul style="list-style-type: none"> Pt c/o reduced strength in right half of the body improved to 40-50% Pt can able to walk with reduced support than before.

		<ul style="list-style-type: none"> Pt was able to do 2 rounds in floor. Pt c/o Pain in flank region while lifting right hand reduced completely Pt c/o slurred speech improved to 70% Pt c/o dribbling of fluid from right side of the mouth reduced to 60% Pt was able to take food with herself. Intake of food quantity increased.
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Table 12: Showing the chart of Rajayapana Basti given for 8 days

Days	1	2	3	4	5	6	7	8
Basti	A	N	A	N	A	N	A	A

Anuvasana Basti [A]

Kalyanaka Ghrita - 80ml

Niruha Basti [N] - Following ingredients are added

Makshika - 60ml

Kalyanaka Ghrita - 80ml

Rajayapana Kalka - 30gm

Rajayapana Kwatha - 300ml

Mamsa Rasa - 200ml

Table 13: Showing the list of Oral Medication given for Patient

Date	Oral Medication	Dose
24/01/2023 to 9/2/2023	Tab. Brihat Vata Chintamani	1-0-1[A/F]
24/01/2023 to 9/2/2023	Cap. Palsinuron	2-0-2[A/F]
24/01/2023 to 30/1/2023	Tab Nityananda Rasa	2-0-2[A/F]
2/02/2023 to 9/2/2023	Tab. Arogyavardhini Rasa	2-0-2[A/F]
24/01/2023 to 9/2/2023	Mahamanjishtha Kashaya + Sahacharadi Kashaya + Dhanvantarum Kashaya	9tsp-0-9tsp with 9tsp water [A/F]

OBSERVATION AND RESULTS

Gradually the patient becomes improved in her symptoms during the indoor treatment and overall general health was started improved. Patient was discharged on oral medications. Effect of treatment was assessed based on Physical symptoms, Stroke scale Quality of Life Index, Barthes index for stroke and improved quality of life.

Improvements

Follow Up after 15 days

- Pt c/o reduced strength in right half of the body improved to 70%

<ul style="list-style-type: none"> Pt can able to walk without anyone’s help for Bathroom. Pt c/o Slurred speech improved to 80%. Pt was able to take food with her right hand. Pt can lift the right hand without difficulty above the shoulder level Pt was able to walk alone with help of Stick.
Follow Up after 1 month
<ul style="list-style-type: none"> Pt c/o reduced strength in right half of the body improved to 85% Pt can able to walk without anyone’s help for Bathroom. Pt c/o Slurred speech improved to 95%. Pt was able to take food with her right hand. Pt can lift the right hand without difficulty above the shoulder level and above Pt was able to walk alone without Stick.

Stroke scale Quality of Life Index^[6] was assessed before and after treatment

SS-QOL	Before Treatment	After Treatment
Total score	71	186

Barthes index^[7] for stroke Patient was assessed Before and After treatment

SN	Range of score	Range of score	Before Treatment	After Treatment
1.	Feeding	0 = Unable 5 = needs help in cutting, spreading butter etc. 10 = independent	0	5
2.	Bathing	0 = dependent 5 = independent (or in shower)	0	5
3.	Grooming	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving	0	5

4.	Dressing	0 = dependent 5 = needs help but can do about half unaided	0	5
5.	Bowel	0 = incontinent 5 = occasional accident 10 = continent	5	10
6.	Bladder	0 = incontinent or catheterized and unable to manage alone 5 = Occasional accident 10 = continent	0	10
7.	Toilet use	0 = dependent 5 = needs some help, but can do something alone 10 = independent (on & off, dressing, wiping)	0	5
8.	Transfers [bed to chair & back]	0 = unable, no sitting balance 5 = major help (of one or two people, physical can sit 10 = minor help (verbal or physical) 15 = independent	5	15
9.	Mobility [on Level surface]	0 = immobile or <50 yards 5 = wheel chair independent, including corners, >50 yards 10 = walks with help of one person verbal or physical 15 = independent (but may use any aid; for example, stick)>50 yards	0	15
10.	Stairs	0 = unable 5 = needs help (verbal, physical, carrying aid)	0	5

Total		10	80
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DISCUSSION

Discussion on a disease

Pakshaghata is a *Vatananatmaja Vikara* characterised by the loss of function and mobility of half of the body either *Vamabhaga* or *Dhakshina Bhagha*. According to *Charaka Acharya*, *Pakshaghata* is considered as involvement of half of the body along with facial involvement whereas *Acharya Sushruta* considers only involvement of half of the body. *Charaka Samhita* opines that *Vayu* beholds either right or left side of the body, dries up *Sira* and *Snayu* of respective area and producing loss of movements, along with *Ruja* and *Vakstambha*. In *Sushruta Samhita*, the *Samparpti* explained as exaggerated *Vata* travels through *Urdhvaga*, *Adhoga* and *Tiryak Dhamanis*, loosens the *Sandhi Bandha* and leads to *Shareeradaradhaakarmanyata Kshaya* and *Achetana*. *Charaka Samhita* mentions *Swedana*, *Snehana* and *Virechana*. *Sushruta Samhita* explained patient of *Pakshaghata* who is not emaciated, has pain in the affected part, habitually follows the rules of diet, and regimen. Who can afford to pay for the necessary accessories considered for the treatment. Initially, *Snehana* and *Swedana*, *Mrudu Shodana* thereafter *Niruha Basti*, *Anuvasana Basti* and *Shirodhara* with other treatment procedures.

Discussion on procedure

A. *Snehana* and *Swedana*

In this study, *Snehana* given as *Abhyanga* and *Swedhana* as *Mrudu Nadi Sweda* was done, as the *Samanya Chikitsa* of *Pakshaghata* is '*Snehanana Swedana Samyutam Pakshaghate Virechanam*'. The main part of *Abhyanga* procedure is the mechanical stimulation more precisely the pressure application. It reduces the motor neuron hyperexcitability. Here *Abhyanga* was done with *Dhanvantarum Taila*^[8] which is explained in *Vatavyadhi* in *Ayurveda*. It is used both internally (through oral route) and externally for the purpose of massage. Both its intake through oral route and application externally are beneficial in the

treatment of paralysis, monoplegia, hemiplegia, diplegia, quadriplegia and wasting due to disuse or lower motor neuron origin. It helps in strengthening of muscle fibres, ligaments, tendons, and other tissues of the body. It also serves as neuroprotective, which plays a crucial role in the process of neuro-protection and promoting the natural functions of the nervous system. It also provides support to the musculoskeletal system, hence helpful in the pain related disorders like arthritis, degenerative arthritis, knee pain, synovitis, low-back pain, and spondylosis. Its results are more significant on the regions of pain and numbness because of the use of sesame oil as its base, which is *Vatashamaka* by nature. It is also found helpful in treating disorders of puerperium, children, urinary tract, uterus, herniation, and hydrocele.

Swedana

Swedana is usually given after the oleation - *Snehana* therapy. *Swedana* is the procedure that relieves *Sthambha*, *Gaurava*, *Sheeta* which induces *Swedana*. *Swedana* drugs by *Ushna* and *Thikshna Guna* are capable of penetrating the microcirculatory channels (*Srotas*) where they activate the sweat glands to produce more sweat after dilation of micro channels. *Laghu* and *Snigdha Dosha* in the channels and direct them to move towards *Koshta*.

Mrudu Shodhana

In *Susrutha Samhita* while explaining the *Mahavata Vyadhi Chikitsa* initial line of management of *Pakshaghata* is through *Snehana*, *Swedana* and *Mrudu Shodhana*^[9] (*Mrudu Virechana*). *Snigdha Virechana* is advised by *Vagbhata* for *Pakshaghata*. So in this case *Sadyovirechana* was done with 45ml of *Gandharvahasthadi Taila*^[10] with Milk after 11 days of *Sarvanga Abhyanga*, *Sarvanga Mridhu Nadi Sweda* and Physiotherapy when Patient become able to walk with support. *Virechana* is the elimination of *Dosha* through the lower passage. *Virechana*, when carried out in the proper manner with all its precautions yields multifaceted effects to the person. As *Pakwashaya*^[11] is a *Sthana* for *Vatadosha*, In the condition of *Pakwashyagata Vata* the first line of treatment is *Sneha Virechana*. The involvement of *Sira* and *Snayu* in

the *Samprapti* of *Pakshaghata* accounts the role of *Raktadhatu*^[12] in *Pakshaghata* for which *Virechana* is the treatment. *Mashtishka* or *Mastulung* is the *Adhishtana* of *Pakshaghata*. *Mastulunga* is considered as the “*Avaleena Ghritakara Mastaka Majja*”^[13]. *Dalhana* says *Pittadhara* and *Majjadharakala* are same. So, for that *Virechana* treatment is advised.

Different neuropeptides and hormones of gut are found in the brain. They have great effects on neurons, smooth muscles and glands. *Virechana* can improve the number of neuropeptides by cleansing the gastro intestinal tract, as a result it may affect the brain and modify its various functions. Hence *Virechana* can be used in the disorders of the brain.

Basti

Basti Chikitsa is regarded as prime line of treatment for *Vata Dosh*. So *Basti Chikitsa* can be adopted depending on the *Avastha* of the *Pakshaghata*. *Basti* is not only best for *Vata* disorders it also equally effective in correcting the morbid *Pitta*, *Kapha* and *Raktha* - “*Basti Varte Cha Pitta Cha Kaphe Cha Raktham Va Shasyate*”.^[14]

Basti is considered as *Sampoorna Chikitsa*.^[15] The *Basti* which maintain the lifespan for a longer period (*Ayu Sthapana*) is considered as *Yapana Basti*. *Acharya Charaka* describes the *Yapana Basti* can be given in all seasons irrespective of *Kala* or *Ritu*. It is also considered as *Ubhayarthakari* as it acts as both *Shodhana* and *Shamana*. *Yapana Basti* is *Sadhyobalajanana* and *Rasayana*. In *Astanga Sangraha* specifically used the word *Rajayapana Basti* and also considered as *Sreshta Yapana Basti*.

In *Charaka Samhita* even we find the reference regarding *Basti Karma* indicated in conditions like for person whose limbs have become stiff and contracted, who suffer from lameness who are afflicted with fracture and dislocations, in those limbs are afflicted by the movement of different types of aggravation of *Vata*.^[16] In *Astanga Sangraha* while explaining the *Pradhanyatha* of *Basti*, *Acharya Vagbhata* explained that *Basti* is mainly for *Vatapradhaneshu*, *Shigram Bruhamana Karyam* hence forth in disease like *Pakshaghata* which is a kind of *Apatarpanajanya*

Vyadhi, for *Brimhanartha* and *Vata Shamanartha*, in the present case *Basti Chikitsa* is adopted.

Mode of action of Basti

When *Basti* is introduced into the *Pakwashaya*, the *Veerya* of *Basti* reaches all over the body, collects the accumulated *Doshas* and *Shakrut* from *Nabhi*, *Kati*, *Parshwa* and *Kukshi Pradesha*, causes *Snehana* to the body and expels out the *Dosha* along with *Pureesha*. *Charakacharya* have explained that it is ‘*Amrutopamam*’ for the patients having *Kshina Majja*, *Shukra* and *Oja* and has properties like *Balya*, *Brimhana* and *Pushtikara*.^[17]

Physiotherapy

Physiotherapy can be defined as a treatment method that focuses on the science of movement and helps people to restore, maintain and maximize their physical strength, function, motion and overall well-being. As physiotherapy is a treatment measure of physical and electrical means to accelerate the patients recovery from injuries and diseases that hazards the normal style of life. Main principle of principle of physiotherapy is to improve Activities of Daily life [ADL] and Instrumental Activities of daily living. The other benefits are increased circulation to all the four limbs and temporary relief of pain consider the spasticity the joint mobility and flexibility was attained through the Range of Motion (ROM), Passive stretching and peripheral joint mobilization.

Brihat Vata Chintamani

Brihat Vata Chintamani Rasa is a Unique Herbo-mineral formulations explained in the context of *Vatavyadhi* in both *Bhaishajya Ratnavalli*^[18] and *Siddha Yoga Sangraha*. All the drugs used in these are having *Tridoshagna* properties. *Medhya* property of *Rajata Bhasma* helps on *Vakshuddi*. The *Lekhana* property of *Swarna Bhasma* helps in *Srotoshodhana* in *Dhamani*. *Abhraka Bhasma* acts on *Pranavaha Srotas* and its *Moola*, *Hridaya*. *Loha Bhasma* corrects *Kshaya*, at the same time acts as *Stoulyahara*. The *Balya* and *Dhatu Prasadhana* property of *Pravala Bhasma* helps in eradicated the *Kshaya*. *Ojovardhana* property of *Mukta Bhasma* regularizes the body metabolism.

Parada Bhasma is *Yogavahi* which result in the target action of the drug. *Kumari* is *Bhedhini*, *Granthihara*, *Vatahara* and *Rasayana*. This formulation also helps in Protein scavenging, anti-inflammatory and arrests neurodegenerative activity with the added benefit of crossing the blood brain barrier.^[19] So as in this condition patient had a long term chronic Rheumatoid arthritis these *Bhasma* said to have quick absorption, long term utility in specified dose, They act as *Rasayana*.

Capsule Palsineuron

Palsineuron contains *Mahavatvidwamsa Rasa*, *Sameerapannaga Rasa*, *Soothashekara Rasa*, *Ekgaveera Rasa*, *Khurasani Owa (Hyoscyamus niger)* and *Lajari (Mimosa pudica)*. *Mahatvatavidhwans Rasa* is a generic preparation which improves the metabolism of CNS and PNS, Co-ordinates the neuro muscular activity. *Sameerapannaga Rasa* improves tissue oxidation, Overcomes Anoxia, normalizes neuro-muscular metabolism. *Ekgaveera Rasa* promotes healing of damaged nerves and blood vessels, recanalize blood vessels activate sensory and motor functions. *Soothashekara Rasa* provides nutritional support for the fast healing of damaged Organelles. *Lajari* regenerative effect on Neuro lesions and *Khurasani Owa* checks Neuro irritation.

Nithyananda Rasa

Nityananda Rasa explained in the *Shlipada Rogadhikara* in *Bhaishajya Ratnavalli*.^[19] which is one of the Herbo-mineral drug. It contains *Parada*, *Gandhaka*, *Tamra*, *Kamsya*, *Vanga*, *Loha*, *Sudda Haratala*, *Sudda Tutta Shanka* and *Varati Bhasma*, herbal drugs like *Triphala*, *Trikatu*, *Panchalavana*, *Vidanga*, *Chavya*, *Hapusha*, *Vacha*, *Trivrut* etc. which is having *Lekhana* and *Rasayana* property and *Tridoshashamaka*. *Kajjali* has *Ushna Guna* and *Katu Vipaka* which act as a *Yogavahi* and *Tridoshgna*. *Tamra*, *Kamsya* and *Vanga Bhasma* does the *Lekhana Karma* which helps in *Kaphaharana*, *Tamra Bhasma* also act as *Rasayana*. Majorities of *Kashtoushadis* possess *Katu*, *Tikta*, *Kashaya Rasa*, *Ushna Veerya* and *Katu Vipaka* act as *Vatakaphahara*. These drugs also possess the *Shothahara* property which helps inflammatory condition and atherosclerotic changes of the vessels.

Arogyavardhini Rasa

Arogyavardhini Rasa^[20] is a Herbomineral preparation, the content of this compound like *Tamra Bhasma*, *Guggulu*, *Katuki*, *Triphala* are having *Lekhana*, *Dipana* and *Medadoshahara* properties. *Lasuna* is having *Aavaranahara*, *Rasayana* properties. *Parada* which can cross the Blood Brain Barrier and acts on the target site. *Loha Bhasma* and *Abhraka Bhasma*, *Tamra Bhasma* all these are *Balya*, *Ayurshya*, *Vrisya* and *Medhya*, *Dhatwagnivardhana*, *Malashodaka* and *Pakwashayadushti Nashaka* Helps in Building immunity in the individual. As this is K/C/O Rheumatoid arthritis which is an Autoimmune Disorder through *Arogyavardhini Rasa* which helps in immune modulation.

Dhanvantarum Kashaya

Dhanvantarum Kashaya which is explained in the *Sahasrayoga*^[22] having the ingredient like *Kushta* and *Tagara* mainly have the ability to cross the Blood Brain Barrier which can help to correct the pathology in the brain.

Mahamanjishtadi Kashaya

Mahamanjishtadi Kashaya which is explained in the *Sharangadhara Madyamakhand*^[23] having many drugs which does *Rakta Shodhaka*, *Rakta Stambhaka* and *Shotahara*. As we know Stroke is Cerebrovascular disease where vascular can be taken as *Siras* in *Ayurveda* where *Siras* are *Upadhatu* of *Rakta* which indirectly act on *Sira* through *Rakta*. It is mainly given to prevent the reoccurrence of the disease.

Sahacharadi Kashaya

Sahacharadi Kashaya is simple formulation of 3 drugs namely *Sahachara*, *Devadaru* and *Shunti* explained in *Vatavyadhi Chikitsa* of *Astanga Hrudaya*^[24] and *Sahasrayogam*. This is used mainly in the *Vatavyadhi* like *Gridrasi*, *Arditha*, *Pakshghata*. All the drugs having *Vata-Kapha Shamaka*, *Vedanasthapana*, *Shulahara*, *Shotahara* and mainly *Nadiuttejaka* (nerve stimulant) properties along with strengthening and Nutritive therapy for musculature which is most needed in the *Pakshaghata* Patients which helps to relieves in the spasticity in affected Muscle.

As in this patient was a K/C/O of 20years of Rheumatoid arthritis, *Sahacharadi Kashaya* having Anti-inflammatory, Anti-Arthritic and Anti-oxidant action properties due to the presence of molecules such as Heptanediamide, N,N'-di-benzoyloxy-Benzoic acid, Phenol, 2-methoxy, Eugenol, Tetradecanoic acid have proved the efficacy of *Ayurvedic* drugs in the treatment of Rheumatoid arthritis was given.

Overall effect of the treatment

Before starting any treatment in the *Ayurveda* assessment of *Vyadhi Avastha*, *Roga Bala* and *Rogi Bala* plays a very important role in planning the treatment. As in this patient was unable to Walk and Cannot do daily routine and due to *Deergakala Vyadhi* of *Amavata* does *Vyadhikarshnata* and patient was *Krusha*, *Ksheena Bala*. As when we see the treatment protocol for *Pakshaghata* in the first phase of treatment to increase the strength of the Patient, *Sarvanga Abhyanga* helps in strengthening of muscle fibres, ligaments, tendons, and other tissues of the body. *Mrudu Nadi Sweda* was adopted *Swedana* is the procedure that relieves *Sthambha*, *Gaurava*, *Sheeta* which induces *Swedana*. After when patient started to walk with support and when able to go bathroom with support as a *Mrudhu Shodhana* as *Sadyovirechana* with *Gandarvashtadi Taila* as *Snigdha Virechana*, *Basti* is considered as *Ardha Chikitsa*. It is useful in vitiation of all *Doshas*, *Rajayapana Basthi* which is *Sadyobalajananartha*, In *Astanga Sangraha* while explaining the *Pradhanyatha* of *Basti*, *Acharya Vagbhata* explained that *Basti* is mainly for *Vatapradhaneshu*, *Shigram Bruhamana Kariywam* hence forth in disease like *Pakshaghata* which is a kind of *Apatarpanajanya Vyadhi*, for *Brimhanartha* and *Vata Shamanarth*, in the present case *Basti Chikitsa* is adopted. Physiotherapy is used throughout the treatment to increase joint range of motion and muscular flexibility. It is very useful for rehabilitation. *Cap.Palsineuron* it was administered to patient to tackle symptoms like weakness and stiffness in the muscle. *Brihatvatachintamani Rasa* contains *Bhasmas* of *Swarna*, *Rajata*, *Abhraka*, *Loha*, *Parada Muktha*, *Suta* and is indicated in *Pakshaghata*, All the drugs used in these are having *Tridoshagna* properties.

Nityanada Rasa and *Arogya Vardhini Vati* both Herbomineral preparation, having anti-inflammatory and *Rasayana* property can tackle the pathology. *Sahacharadi Kashaya*, *Dhanvantarum Kashaya* and *Mahamanjishtadi Kashaya* have different multiple action which helped in reducing the symptoms which helped after treatment. The holistic approach is necessary and important in this condition to increase the patient confident.

CONCLUSION

Pakshaghata is *Vataja-Nanatmaja Vyadhi* considered as *Mahavatavyadhi* and it difficult to manage. In the present study it was noted that *Pakshaghata* was associated with Rheumatoid Arthritis and Hypertension, so by assessing the *Rogi Bala*, *Roga Bala* and *Vyadhi Avastha* the treatment was adopted in phases with *Snehana*, *Swedana* and *Mrudu Shodhana* with Physiotherapy shown better results in *Laskhanas* of *Pakshaghata* and was able to walk with support and later *Rajayapana Yoga Basti* was administered. *Basti Karma* not only does the *Srotodushti* this also does the *Panchavata Shamana*, *Dhatuposhana*, *Rasayana*, *Sirasnayu Poshana* and *Sadyobalajananarthakara*. In this patient recovery was seen within month, which is suggestive of beneficial effective of *Ayurvedic* treatment. Thus, it can be concluded that *Ayurvedic* management is clinically highly significant in the treatment of CVD like *Pakshaghata* which can improve the quality of life of the Individual and reduces live lives of Dependence.

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