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Effect of Shirobasti, Sarvangadhara and Medicines in Cerebellar Ataxia: A Case Report

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ABSTRACT

The effects of Ayurvedic Drugs and Panchakarma may improve symptoms of ataxic gait, and tremors of underlying chronic cerebellar ataxia; a debilitating and untreatable consequence of various diseases. In a single case study of cerebellar ataxia since 25 years (diagnosed by AIIMS; New Delhi, IMS-BHU; Varanasi and also confirmed by National Institute of Mental Health & Neuro Science, Bangalore, The patient is further evaluated and given Combination of Ayurveda medicines and perform Panchakarma therapy specially *Shirobasti&Sarvang dhara* for one month. For evaluation, we used Scale for the assessment and rating of ataxia (SARA). SARA is a clinical scale developed by Schmitz-Hübsch *et al* which assesses a range of different impairments in cerebellar ataxia. The scale is made up of 8 items related to gait, stance, sitting, speech, finger-chase test, nose-finger test, fast alternating movements and heel-shin test. was assessed on SARA Scale for Ataxia. Before treatment scale was 32 and after one-month treatment scale was 20. These findings indicate the potential effectiveness of Ayurvedic Drugs and Panchakarma as symptomatic therapy in patients of cerebellar ataxia.

Keywords: Cerebellar ataxia, Shirobasti, Sarvang dhara, Kampvata, Vata vyadhi.

INTRODUCTION

Ataxia describes a lack of muscle control or coordination of voluntary movements, such as walking or picking up objects. A sign of an underlying condition, ataxia can affect various movements, creating difficulties with speech, eye movement and swallowing. Ataxia can develop over time or come on suddenly.¹

Cerebellar ataxia is a form of ataxia that originates from abnormalities such as inflammation in the occipital and temporal lobes of the cerebellum. Cerebellum is responsible for motor control, muscle movement, and motor learning. This type of ataxia is most commonly known for causing a loss of balance and coordination. A sign of several neurological disorders, ataxia can cause poor coordination, unsteady walk and a tendency to stumble, difficulty with fine motor tasks, such as eating, writing or buttoning a shirt, change in speech, involuntary backand-forth eye movements (nystagmus), and difficulty swallowing.

CASE REPORT

A 66 years old male patient was consulted in Out-Patient Department of *Kayachikitsa* at academic hospital, for complaint of gradually progressive weakness of both upper and lower limbs, unsteady walk and a tendency to stumble, change in speech, and involuntary hand movements. Patient had suffered from these problems for 25 years. Symptoms were aggravated despite taking allopathic medicines. The patient had undergone neurologic and orthopaedic consultations in some leading renowned hospitals. He was not taking any medications at the time of consultation.

Clinical findings: The case was subsequently admitted to the male ward on May-07, 2018 for the treatment. The patient demonstrated abnormal ataxic gait. On neurological examination, higher mental function was normal, but speech is of dysarthria type. On motor examination, power and coordination of arms and legs were abnormal bilaterally. Power in both upper limbs was grade 3 on medical research council score. Power in both

legs was grade 3. Tremors were found in upper extremities bilaterally. Hoffman reflex and Babinski reflex were positive bilaterally.

All laboratory and biochemical investigations like CBC, LFT, RBS, Urine-R/M were normal. CT Scan head suggestive of multiple infarct brain with diffuse cerebellar atrophy on 03 June 2017. Magnetic resonance imaging (MRI)² of brain was done on Feb 27, 2009 revealed cerebellar atrophy with few small ischemic foci in bilateral anterior corona.

Timeline: This Patient visited neuro OPD at BHU, Varanasi in 2003 for management for chief complaint of difficulty in writing, difficulty in walking, change in speech with history of these problems for 15 years. After no improvement at BHU, patient visited AIIMS, New Delhi for better management in 20014. Here again multiple tests have been done but he got no response. During 2009-2016, he visited the Institute of Human Behaviour and Allied Science. New Delhi, for further management. Here MRI head was done for confirmation. MRI revealed cerebellar atrophy with few small ischemic foci in bilateral anterior corona. After then in 2016, patient visited the National Institute of Mental Health & Neuro Science, Bangalore for further management. Again in 2016-2017, patient visited AIIMS, New Delhi for and now refered to PGI, Lucknow. In PGI, Lucknow, repeated CT Scan head done with finding of multiple infarct brain with diffuse cerebellar atrophy. At last, in May 2018 he visited OPD in Kavachikitsa Department and admitted to the male ward of Government Post Graduate Ayurveda College and Hospital. SARA scale is prepared for the assessment of patient. The detail of the case study and follow up is given in Table 3.

Diagnostic focus and assessment: The patient was a diagnosed case of cerebellar ataxia. It was confirmed by previous institutions. After doing various investigations including CT scan & MRI. Kampavata was considered as Ayurvedic diagnosis which is included in Vatavyadhi (Neurological and musculoskeletal diseases).³ A complicated combination of Kampa (Tremor), Stambha (Rigidity), Gati sanga (Bradykinesia), and a typical disturbance of gait and stance make up the condition known as Kampavata. The condition known as Kampavata typically begins in middleor late-life and worsens over time in all ethnic groups. A type of ataxia that develops in the cerebellum is called cerebellar ataxia. Certain illnesses, including cerebellar ataxia, can result in the inability to coordinate balance, gait, extremities, and eye movements. Poor muscle coordination that results in awkward voluntary movements is known as ataxia. It might make it difficult to move the eyes, speak, or walk steadily. It might also make it hard to coordinate one's hands. Therefore, it may be associated to Kampavata because of comparable involuntary movements. Scale for the assessment and rating of ataxia (SARA) is used for clinical assessment; a range of different impairments in cerebellar ataxia.

The SARA is a tool for assessing ataxia. It has eight categories

with accumulative score ranging from 0 (no ataxia) to 40 (most severe ataxia). When completing the outcome measure each category is assessed and scored accordingly. Scores for the eight items range as follows:

- Gait (0-8 points),
- Stance (0-6 points),
- Sitting (0-4 points)
- Speech disturbance (0-6 points)
- Finger chase (0-4 points)
- Nose-finger test (0-4 points)
- Fast alternating hand movement (0-4 points)
- Heel-shin slide (0-4 points)
- Once each of the 8 categories have been assessed, the total is calculated to determine the severity of ataxia.

Treatment plan: Treatment was planned with Ayurveda drugs along with certain *Panchakarma (purvakarma)* procedures especially *Shirobasti* (gently pouring liquids over the forehead) and *Sarvang dhara* (medicated oil continuously poured all over the body). Drugs are selected according to *Vata-vyadhi*⁴. Some drugs are *Vatanashak*, *Medhya* drugs, and *Tails* are selected as per *Vatanashak* Property (Table 1).

selected Ayurvedic oral medicine are - Unmad Gajankush Rasa, Vata Gajankush Rasa, Smriti sagar Rasa, Prawal Panchamrit, Siddha Makardhwaj, Amrita Satwa, Saraswatarishta, Brahmi Ghria (Table 1).

Shirobasti is done by *Jyotishmati taila* and *Sarvang dhara* is done by *Bala taila* (Table 2).

These oral medicines and Panchakarma procedures were continued for one months.

Intervention: All powdered and dry oral drugs in prescribed dose in table-1 is administered twice a day with honey daily for one month. *Saraswatarisht* is given in dose of 20 ml BD after meal with equal amount of water. *Brahmi ghrita* in dose of 20 ml BD is given after one hour of meal with warm cow milk. *Shirobasti* is done daily upto 48 minutes for one-months with *jyotishmati taila* (Figure 1) and *Sarvang dhara* (Figure 2) is done daily upto 48 minutes by *Bala taila* for one-month.

RESULTS AND DISCUSSIONS

After treatment with above mentioned medicines and *Panchakarma* procedures, SARA score was assessed after 15 days and 30 days. Initially score was 32 on 7th May 2018 and after 15-day treatment score was 24 and after one-month treatment score was 20 shown in Table 4.

After 1 months of treatment, the patient was able to stand from the sitting position, able to walk without support and his speech was improved and it was easily understandable.

Cerebellar Ataxia is a rare degenerative disease of the nervous system which is characterized by slurred speech, stumbling, falling, and incoordination. These symptoms are related to degeneration of the part of the brain, called the cerebellum that is responsible for coordinating movement. In Ayurvedic texts no disease is described which is completely similar to Ataxia. But on comparing various symptoms, it resembles with *Kampavata⁵*, *Akshepak⁶*, *Pranavrit udan* and *Pranavrit vyan vayu⁷*. But whatever it resembles, in nutshell it is a *Vatavyadhi*. *Vatavyadhi* is a disorder which represents the symptoms of neurological disorders. The main line of treatment of *Vatavyadhi* are *Snehan*, *Swedan* and *Basti.⁸*

Shirobasti and *Sarvang-dhara* are *Vatahara*. Therapeutic oil massage as *Sarvang-dhara Vata* and gives strength to muscle of arm and leg. These therapies enhance muscle power and thus may have contributed to the improved performance in the balance parameters.⁹

Excessive oxidative stress plays a vital role in the pathogenesis of such degenerative disorders of the brain¹⁰. Hence, Shirobasti procedure has been shown to have anxiolytic, sympatholytic, and immune-potentient effects on patients of ataxia.¹¹ Unmad Gajankush Rasa, Vata Gajankush Rasa, Smriti sagar Rasa, Prawal panchamrita, Siddha Makardhwaja are very effective in Vataj disorder. Manas rogas are mainly due to involvement of vitiated Vata and tremors are also due to Vata Prakopa. These drugs are very effective in Vata prakopa. Saraswatarishta is effective in treating acute anxiety, exhaustion, sleeplessness, partial memory loss, reduced grasping power, slurred speech, and other conditions. Saraswatarisht has antidepressant potential given the impact it exerts on the central nervous system as stated in Ayurveda.

Brahmi Ghrita is a ghee-based Ayurvedic formula used to manage problems associated with the central nervous system. It has ghee in its base which is providing good absorption and better delivery to the organs due to its lipophilic nature. Brahmi Ghrita has neurocognitive effects which may help with conditions like epilepsy. It also has a positive effect on poor memory. According to Ayurveda, Brahmi Ghrita has a Vata balancing property which may help balance all three doshas and reduces the episodes of the seizure (epilepsy). Brahmi Ghrita also has Medhya (intelligence-improving) and Rasayana (rejuvenating) properties which may add on improving memory power. Siddha Makardhwaja is a potent combination of Gold, Mercury, Sulphur, Camphor, Nutmeg, Clove and Pepper that helps in rejuvenation. It helps rejuvenating chronic conditions to boost energy levels, especially in old age. It also helps reducing lethargy and promotes vitality.

In summary, the present study is a single case study for evaluation of the of *Aanchakarma & Medication* therapy in improving balance and gait in cerebellar ataxia. The results are encouraging and warrant further structured studies to assess the efficacy of different modalities of Ayurvedic treatment in cerebellar ataxias in a large group of patients.

CONCLUSION

Cerebellar ataxia can be managed with satisfactory outcome with Ayurvedic medicine and Pancakarma¹² procedures like *Shirobasti* and *Sarvang dhara*.^{13,14} This study shows that the ataxic patients can be satisfactory managed with Ayurvedic management. These findings may prove helpful for continuing further treatment and research work in patients of cerebellar ataxia in a large population group.

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CONFLICT OF INTEREST

Authors declare that there is no conflict of interest.

PATIENT DECLARATION CONSENT

Permission for publication of this case study had been obtained from the patient.

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Drugs ¹ , ¹	Dose	Anupan	
Unmad Gajankush Rasa	250 mg twice a day	Honey	
Vaat Gajankush Rasa	250 mg twice a day	Honey	
Smritisagar Rasa	250 mg twice a day	Honey	
Prawal Panchamrita	125 mg twice a day	Honey	
Siddha Makardhwaja	60 mg twice a day	Honey	
Amrita Satwa	500 mg twice a day	Honey	
Saraswatarishta	20 ml twice a day	Equal Water	
Bramhi Ghrita	20 ml twice a day	Warm Cow Milk	

Table 1: Ayurvedic Drugs administered for one month

Table 2: Panchakarma Procedures with duration

Procedures	Drugs ¹	Duration
Shiro Basti	Jyotismati taila	One Month
Sarvang Dhara	Bala Taila	One Month

Table 3: Timeline of Patient Management

Year	Incidence/Intervention		
08.09.2003	Patient Came at SS Hospital, BHU, Varanasi at neuro OPD for management of chief complaint of Difficulty in writing, difficulty in walking, change in speech with history of these problems for 15 years.		
25.08.2004	After no improvement at BHU, patient visited AIIMAS, New Delhi for better management. Here again multiple test has been done but no response.		
02.02.2009	Patients visited the Institute of Human Behaviour and Allied Science, New Delhi, for further management.		
27.02.2009	MRI head will be done for confirmation. MRI revealed cerebellar atrophy with few small ischemic foci in bilateral anterior corona.		
11.01.2016	Patient visited the National Institute of Mental Health & Neuro Science, Bangalore for further management.		
15.01.2016	Again, patient visited AIIMAS, New Delhi for better management.		
19.03.2016	Again, patient visited AIIMAS, New Delhi for better management.		
30.01.2017	Patient visited PGI, Lucknow for further management		
03.06.2017	CT Scan Head suggestive of multiple infarct brain with diffuse cerebellar atrophy		
07.05.2018	Patient visited OPD of Dr. Ajay Kumar, Kayachikitsa Deptt. and admitted to the male ward of Government Post Graduate Ayurveda College and Hospital. SARA scale is prepared for the assessment of patient.		
22.05.2018	SARA scale is prepared for the assessment of patient after 15-day treatment by Ayurveda drugs and Panchakarma.		
06.06.2018	SARA scale is prepared for the assessment of patient after 30 day treatment by Ayurveda drugs and Panchakarma.		

Table 4: Assessment of Signs and Symptoms of SARA Scale before and after treatment

SARA Scales for Ataxia		Follow-up Dates		
07.05.2018		22.05.18	06.06.2018	
1	Gait	6	4	4
2	Stance	5	3	2
3	Sitting	4	4	3
4	Speech disturbances	4	3	3
5	Finger case	3	3	2
6	Nose finger test	3	2	2
7	Fast alternating hand movements	4	3	2
8	Heel sheen slide	3	2	2
	Total Score	32	24	20

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Figure 1: Shirobasti Chikitsa



Figure 1: Sarvang Dhara