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AN AYURVEDA-PANCHAKARMA APPROACH TOWARDS THE MANAGEMENT OF AUTOSOMAL RECESSIVE SPASTIC ATAXIA OF CHARLEVOIX SAGUENAY (ARSACS)– A CASE REPORT

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Autosomal recessive spastic ataxia of Charlevoix Saguenay (ARSACS) is a neuro degenerative disease comprising cerebellar ataxia, spasticity and peripheral neuropathy. The exact prevalence of ARSACS is unknown in most of the countries. The incidence is estimated to be 1 in 1500 to 2000 individuals in Canada. In ayurvedic perspective, this can be correlated with *Mastulunga kshaya* as there is progressive atrophy of the cerebellar hemispheres and cervical cord. A 24-year male adult with the complaint of difficulty in walking, writing and speaking since the age of three years along with delayed mile stones and also inability to perform day to day activities got admitted in male panchakarma ward at Sri Venkateswara Ayurvedic college and hospital. On the basis of clinical features and MRI- Brain, diagnosis was done as Autosomal recessive spastic ataxia of Charlevoix Saguenay (ARSACS). Patient was treated with *abhyangam* and *nadi swedam* for 3 days followed by *shashtika shali pinda swedam* for a period of 14 days along with *nasya karma* with *dhanwantara tailam 101 avartini* for 14 days. Mild to moderate improvement was seen in clinical features in terms of nystagmus, pendular reflex and swaying which is reflected in DSI-ARSACS scale with an improvement of score from 16/38 to 12/38.

The treatments *abhyangam* and *nadiswedam* were done initially for a period of 3 days for the management of vata related symptoms like difficulty in walking, writing and speaking. This

has been followed by *shashtika shali pinda swedam* for a period of 14 days to impart *brimhana* effect by improving the symptoms like wasting. *Nasya karma* which was done for a period of 14 days for the management of *mastulunga kshaya.*

INTRODUCTION

Autosomal recessive spastic ataxia of Charlevoix Saguenay (ARSACS) was first discovered in 1978 in the Saguenay-LacSt-Jean region of northeastern Quebec. Later in 2000, the SACS gene was identified by Engert et al. as being responsible for the disease. This condition has subsequently been detected in diverse geographical regions worldwide, including india. A majority of affected individuals develop slowly progressive ataxia within first decade; this is accompanied by spasticity in childhood and neuropathy during adolescence. MRI findings typically include atrophy of the superior cerebellar vermis and linear hypointensities in the pons. These findings are often described as tigroid or striped pattern on T2 and FLAIR sequences.

As there is no direct reference of ARSACS in ayurveda samhita, scattered references are collected from samhitas. According to acharya dalhana, shape of brain is like freezed butter which is called mastulunga. Similar explanation is also given by acharya susrutha in susrutha samhita sutra sthana calling it as mastishka majja. As a part of brain undergoes atrophy, it can be compared to mastulunga kshaya in ayurveda. By studying the above references and yukti Pramana a case of ARSACS was treated with panchakarma.

MATERIALS AND METHODS

Various refernces have been collected from available ayurvedic text and their commentaries, modern texts and related websites have been searched.

CASE PRESENTATION

A 24 year old male patient came to opd, department of panchakrma, sv ayurvvedic hospital, ttd, Tirupati complaining of progressive difficulty in walking, writing, speaking and difficulty in doing daily activities since the age of 3 along with delayed milestones.

History of present illness

Patient was born out of nonconsanguinous marriage second in birth order presented with delayed motor mile stones acquired at the age of 3 years, with unsteadiness of walking. He was not able to run fast and started fearing of height. He also gradually developed difficulty

in writing. Patient was also unable to speak clearly facing difficulty in daily activities. With these complaints, patient came to panchakarma OPD and got admitted in panchakarma male ward.

Past history

No relavant h/o HTN, DM, trauma

Family history

No relevant family history

Personal history

Diet – mixed

Appetite – low

Thirst – normal

Urine – 5 to 6 times during day and 3 to4 times during night

Bowel – constipated

Addiction – no addiction to smoking and alcohol

Physical examination

B.P – 110/78 mm hg

P.R – 74/min

Respiration rate – 16/min

Weight – 43kg

Ashtavidha Pariksha

Nadi – samanya

Mala – badha

Mutra – mutranigraha

Jihwa – alipta

Shabda – aspashta

Sparsha – samashitoushna

Netra – asamanya

Akriti – avara

Dashavidha Pariksha

Prakriti – Vatapittaj

Vikriti – Lakshana nimittaja

Sara – Twak sara

Samhana – Avara

Pramana – avara (5 feet 2 inch)

Satmya – Madhyama

Satwa – Madhyama

Agni - Aharashakti – heena

Jarana shakti – heena

Vyayama shakti – heena

Vaya – yuva

Systemic examination

- Respiratory system – B/L air entry equal and adequate
- Cardiovascular system – S1 and S2 normal
- Abdominal system – soft and non tender.

CNS system examination

A. Higher mental functions

Consciousness – fully concious

Orientation – fully oriented to time, place and person

Memory – intact

Intelligence – intact

Hallucination and delusion – absent

B. Cranial nerves

Oculomotor, trochlear, abducens nerve – nystagmus present

Hypoglaossal nerve – speech – dysarthria present

MOTOR SYSTEM EXAMINATION

1) Involuntary movements – not present

2) Muscle bulk

	Rt	Lt
Biceps	24 cm	24 cm
Forearm	21 cm	21 cm
Midthigh	32 cm	32 cm
Calf muscles	28 cm	28 cm

3) Muscle tone : hypotonia
4) Muscle power: upper limbs 4/5 and lower limbs 4/5
5) Coordination:

a) Finger nose test – dysmetria present
b) Heel to shin test – dysmetria present
c) Dysdiadochokinesia- present
d) Intension tremor – absent
e) Tandem walk - impaired
f) Rebound phenomenon – positive

6) Gait – drunken gait (wide based, staggering)
7) Reflexes

a) Superficial reflexes

i) Corneal – normal
ii) Abdominal – normal

b) Deep tendon reflexes	rt	lt
i) Biceps	+1	+1
ii) Triceps	+1	+1
iii) Knee	(pendular reflex)	
iv) Ankle	+1	+1
v) Plantar	+1	+1

SENSORY SYSTEM

SUPERFICIAL SENSATION

1) Touch – intact
2) Temperature – normal to heat and cold
3) Pain – present

Deep Sensation

1) Position - present
2) Joint – present
3) Vibration - present

CRITERIA FOR ASSESMENT

DSI – ARSACS have 8 items that can be easily performed during usual medical checkup. It is a valid measure of disease severity for the adult ARSACS population that is able to distinguish between patients with different clinical profiles.

INVESTIGATION

MRI brain:- linear bilateral tigroid appearance in pons with mild brainstem atrophy.

DIAGNOSIS

Autosomal recessive spastic ataxia of Charlevoix Saguenay (ARSACS)

Therapeutic focus

BAHIRPARIMARJANA CHIKITSA

Abhyangam and nadi swedam with bala tailam for 3 days followed by shashtika shali pinda swedam for 14 days

ANTAHPARIMARJANA CHIKITSA

Nasyam with dhanwantara tailam 101 avartini for 14 days

OBSERVATION AND RESULTS

Before treatment the DSI-ARSACS mean score was 16 which was later reduced to 12 after treatment.

S.No.	Examination	Before	after
1.	Speech during normal conversation	2	2
2.	Archimedes spiral	3	3
3.	Standardised finger to nose test	2	1
4.	Mobility	3	2
5.	Muscle tone	2	2
6.	Vibration lateral malleolus	1	0
7.	Circle with foot	2	2
8.	Bladder function	1	0

MODE OF ACTION

Sarvanga abhyangam and nadi swedam helps in subsiding vata dosha and improves the tone of muscle and compactness of body.

Shashtika shali pinda swedam has nourishing effect on muscles and soft tissues. It is effective in neuropathies.

Nasyam helps in instillation of drug through nasal route to reach the brain. It is effective in pacifying disorders occurring in head and neck region.

DISCUSSION

Autosomal recessive spastic ataxia of charlevoiux saegueny (ARSACS) typically include atrophy of part of brain similar to kshaya awastha in ayurveda. Hence, can be compared to mastulunga kshaya.

According to vyadhivipareeta chikitsa siddanta, kshaya pradhana vyadhi should be treated with brmhana chikitsa. As chakrapani considered mastulunga kshaya as shirogat asneha, snehana by various methods was taken as the main principle of treatment. Sthanagata chikitsa was also taken into consideration.

CONCLUSION

ARSACS (mastulunga kshaya) diagnosed according to ayurveda, nidana panchaka can be treated with ayurvedic principles. Hetu and samprapti vichar plays important role in the treatment of neurological disorders. The present study shows that ARSACS can be managed with satisfactory outcome with ayurveda- panchakarma proceedures. These findings may prove helpful for conducting further treatment and research work for ARSACS and similar conditions.