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Case Study

MANAGEMENT OF GUILLAIN BARRE SYNDROME THROUGH AYURVEDA-A CASE STUDY

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ABSTRACT

Guillain-Barré syndrome (GBS) is an acute, rapidly evolving are flexic motor paralysis with or without sensory disturbance. It occurs year around at arate of between 1 and 4 cases per 100,000 annually. Age is an important factor determining outcome, and prognosis. In children is said to be favourable as compared to adults. Direct correlation of GBS with Ayurvedic terminology is difficult. The presentation and *Doshadooshyasamoorchana* is considered first and then one should proceed with the treatment. Here a case of 7 year old female child presented with sudden onset of loss of power in lower limb, unable to get up, walk and stand with a past history of fever brought to OPD of SKAMC&HRC Bangalore. She was provisionally diagnosed as a case of acute inflammatory demyelinating polyneuropathy (AIDP-type of GBS). As per Ayurvedic classics, this condition we have taken as *Sarvangavata* (*Vata* affecting the whole body) which precedes *Jwara* (H/O fever before onset of symptoms). Hence, the line of treatment we have adopted *Jwara Chikitsa* and *Vatavyadhichikitsa* which included *Aamapachana* as well as *Brihmanachikitsa* along with *Shamanoushadhis*. The outcome was very remarkable with the patient able to walk on her own.

KEYWORDS: Guillain-Barré syndrome (GBS), Demyelinating polyneuropathy (AIDP-type of GBS).

INTRODUCTION

Guillain-Barré syndrome (GBS) is an acute, rapidly evolving are flexic motor paralysis with or without sensory disturbance.[1] During the acute phase, disability can be severe and can result in respiratory in-sufficiency and death. The usual pattern is an ascending paralysis that may be first noticed as rubbery legs. Weakness typically evolves over hours to a few days and is frequently legs are affected than arms. Several subtypes of GBS are recognized, as determined primarily by electro diagnostic and pathologic distinctions. The most common variant is acute inflammatory demyelinating polyneuropathy, axonal variants, which are often clinically severe either acute motor axonal neuropathy (AMAN) or acute motor sensory axonal neuropathy (AMSAN)[2]. As per Ayurvedic classics this condition taken as *Sarvangavata* which precedes *Jwara*. Hence the prime line of treatment was *Jwaraharachikitsa-Amapachana* for which we have selected *Shamanoushadhis* which contains *Guduchi* as a main ingredient, followed by *Vatavyadhichikitsa* it included *Abhyanga* (oleation therapy) and *Shashti shalikapindsveda* (sudation using a hot *Shashtika* rice) along with *Matrabasti* (medicated oil enema) and other *Vataharashamanoushadhis*.

Case report

A 7-year-oldfemale child admitted at SKAMC & HRC Bangalore on 23/8/16 presented with sudden onset of weakness in upper and lower limbs along with pain. The child was apparently normal till 27/07/2016. On the day of 28/7/16, when the mother tried to wake up the child in the morning she noticed *Balakshaya* (weakness) in both the lower limbs and that the child couldn't move her lower limbs and couldn't get up from the bed. She helped the child to get up but the child couldn't stand or walk. The child also complained of *Shoola* (pain) in both lower limbs. So, they took her to nearby Hospital. She was admitted and investigations were done and a probable diagnosis of AIDP was done and was referred to a higher center for further treatment. She was admitted from 1/8/16 to 4/8/16 in a private hospital and the child's parents didn't notice any improvement and was discharged on request. Her mother also noticed weakness in the B/L upper limbs as the child was not able to hold any objects. By the suggestion of their relative, came to the OPD of SKAMCH & RC Bangalore for further treatment on 23rd August 2016.

There was no h/o respiratory, bowel and bladder incontinence.

Past history

Fever for about 10 days in June 2016 (was treated on OPD basis, details not known). And prodrome of fever 10 days back for a day (before the onset of presenting complaints) and subsided with treatment in a local hospital. No h/o trauma or recent vaccination.

Treatment received by patient in private hospital (from1/8/16 to 4/8/16)-

Intravenous Immunoglobulin 2 gm/kg in 2 divided doses, Syp. Zincovit 5 ml BD, Syp. Shelcal 5 ml BD, Syp. Paracetamol 5 ml (250 mg) TID.

All developmental milestones achieved normally. All vaccinations done as per the immunization schedule.

Examination on Admission

General Examination

The general condition of patient was good, moderate build and nourished afebrile with pulse 80/min, respiratory rate- 24/min, and height-1.05m, weight-16kg.

Systemic Examination

In the systemic examination, findings of respiratory and cardiovascular system were within the normal limits. Abdomen was scaphoid, non-tender, and bowel sounds were present. Patient was conscious and well oriented and pupillary reaction to light was normal. All sensory system was intact.

On examination during admission (23/8/16)

Hughes GBS Disability Scale	4/6
Cranial nerve examination	All cranial nerves are intact except CN XI
CN XI	shrugging shoulders- not possible with resistance

Hughes functional grading scale for GBS Score Description[3]

0- Healthy,
1- Minor symptoms or signs, able to run,
2- Able to walk 5 m independently,
3- Able to walk 5 m with a walker or support,
4- Bed- or chair-bound,
5- Requiring assisted ventilation,
6- Death

Motor system	**Left u/l**	**Right u/l**
Muscle wasting	Absent	Absent
	Left L/L	**Right L/L**
	Absent	Absent
Muscle tone	**Left U/L**	**Right U/L**
	Hypotonia	Hypotonia
	Left L/L	**Right L/L**
	Hypotonia	Hypotonia
Muscle power	**Left u/l**	**Right u/l**
Elbow	3/5	3/5
Wrist	3/5	3/5
Palmar grip	Moderate (tends to drop object)	Moderate (tends to drop object)
Pincer grip	Moderate	Moderate
	Left L/L	**Right L/L**
Hip	Adduction – 0/5	Adduction – 0/5
	Abduction – 0/5	Abduction – 0/5
	Flexion – 0/5	Flexion – 0/5
	Extension – 0/5	Extension – 0/5
Knee	Flexion – 0/5	Flexion – 0/5
	Extension – 0/5	Extension – 0/5
Ankle	Plantar flexion- 0/5	Plantar flexion- 0/5
	Dorsiflexion -0/5	Dorsiflexion -0/5
Deep reflexes	**Left U/L**	**Right U/L**
Biceps	Areflexia	Areflexia
Triceps	Areflexia	Areflexia
Supinator	Areflexia	Areflexia
	Left L/L	**Right L/L**
Kneejerk	Areflexia	Areflexia
Ankle jerk	Areflexia	Areflexia

Gradation for muscle power

0- No muscular contraction
1- Flicker or trace of contraction
2- Active movement with gravity eliminated
3- Active movement against gravity
4- Active movement against gravity and some resistance
5- Active movement against full resistance

Gradation for reflexes

0- No response
1+ -Diminished, low normal
2+ -Average(normal)
3+ - Brisker than average
4+ -Very brisk, hyperactive, with clonus

Gait & co-ordination	Could not be elicited as the child couldn't walk- foot drop
Babinski sign	No response

Rogi- Roga Pariksha

Ashtavidhapariksha

The patient was having *Naadi* with *Vatakapha* dominant, *Jihwaliptata* (coated), *Madhyamakruti* (medium built), and with *Prakruta Mala, Prakruta Mootra, Avishesha Shabda, Avishesha Druk, Anushnasheethasparsha.*

Sampraptighataka

Dosha- *Vatakaphapradhanatha* in which *Vyanavata karma kshaya* as well as *Tarpakakaphavikruthi* was present.

Dooshya- *Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Sira, Snayu, Kandara*

Agni-*Jataragni* and *Dhatwagnimandya*

Aama*-Jataragni* and *Dhatwagnimandyajanya*
Srothas*- Rasavaha, Raktavaha, Mamsavaha, Medovaha, Ashtivaha, Majjavaha*
Srothodushtiprakara*- Sanga*
Udbhavasthana*-Amashaya, Pakwashaya*
Sancharasthana*– Sarvashareera*
Vyaktasthana*-Ubhayashakha*
Ragamarga*– Madhyama*

Nidana considered as *Agantuja* which causing *Doshavaishamya* along with *Agnimandya* lead to the formation of *Aama*, circulating in *Rasavahasrothas* lead to *Vishamajwara* further causing *Triteeyaka jwara*[4] where it was presented as *Trikagrahi.* Again, the *Leena doshas* (remnant *Dosha*) got aggravated due to the *Mithyahara* (unwholesome diet) caused *Kaphavrutha vyana*[5] presented as *Gatisanga* (loss of movement), further *Vataprakopa-Sira Snayu Shoshana* affected the whole body as well as possible (?) *Doshajamarmabhighata* to *Kukundara marma*[6] causing *Chetopaghata, Balakshya, Sarvangavata.*

Investigation

Routine studies of blood, urine, renal functions, serum electrolytes, CPK were within normal limits. EMG-NCV suggestive of AIDP (type GBS).

Management

- From the day of admission (23/8/16- 29/8/16) *Sarvanga Parisheka* with *Dashamoolakwatha* was done for 7 days.
- *Sarvangamrudu abhyanga* (oleation therapy)with *Balaashwagandhataila* followed by *Shashtikashali pindasweda* for next 16 days. (30/8/16- 14/9/16)
- Started physiotherapy (30/8/16- 14/9/16)
- *Matra Basti* (medicated oil enema) with *Mahakalyanakaghrita* – 25 ml for 8 days (7/9/16-14/9/16)
- Physiotherapy from (30/8/16- 14/9/16)

Internally patient was administered

- *Guduchiksheerapaka* done with *Gardabhapaya* 25 ml BD,
- Tab*. Samshamani Vati* 1 tab TID,
- Tab*. Amlaparimala* 1 tab BD,
- Tab*. Ekangaveera rasa*- 10 tabs + *Ashwagandha Churna*- 50 gms+ *Mahakalyanakaghrita* (½ tsp *churna* + 1tsp *Ghrita* TID)
- After 22 days of treatment patient started feeling better. Able to stand and walk with support for 20-30 steps.

By giving gap for 1 week, again started the treatment for 16 days (22/9/16- 7/10/16) with

- *Sarvanga abhyanga* with *Balaashwagandhataila* followed by *Patra Pinda Sweda.*
- *Matrabasti* with *Balaashwagandhataila*- 25 ml (retention time - 2 hours for 16 days)
- Physiotherapy.

OBSERVATION on 7/10/16

After 45 days of treatment patient able to get up from bed, sit and walk with minimal difficulty.

Able to stand without support about 15 minutes, able to walk without support 250 feet.

Hughes GBS Disability Scale	**2/6**
Cranial nerve examination-CN XI	shrugging shoulders-possible with resistance

Motor system	**Left u/l**	**Right u/l**
Muscle tone	**Left U/L**	**Right U/L**
	Normotonic	Normotonic
	Left L/L	**Right L/L**
	Hypotonia	Hypotonia
Muscle power	**Left u/l**	**Right u/l**
Elbow	4/5	4/5
Wrist	4/5	4/5
Palmar grip	Good	Good
Pincer grip	Good	Good
	Left L/L	**Right L/L**
Hip	Adduction – 1/5	Adduction – 1/5
	Abduction – 2/5	Abduction – 2/5
	Flexion – 1/5	Flexion – 1/5
	Extension – 1/5	Extension – 1/5
Knee	Flexion – 3/5	Flexion – 3/5
	Extension – 2/5	Extension – 2/5
Ankle	Plantar flexion- 0/5	Plantar flexion- 0/5
	Dorsiflexion -0/5	Dorsiflexion -0/5
Deep reflexes	**Left U/L**	**Right U/L**
Biceps	1+	1+
Triceps	1+	1+
Supinator	1+	1+
	Left L/L	**Right L/L**
Kneejerk	1+	1+
Ankle jerk	1+	1+

Gait & co-ordination	Steppage gait Able to walk without support- about 250 feet Able to stand without support for about 15 minutes
Babinski sign	Diminished

DISCUSSION

Conceptual analysis of GBS in Ayurveda

Pathology

In the demyelinating forms of GBS, the basis for flaccid paralysis and sensory disturbance is conduction block. First attack on schwann cell surface, widespread myelin damage, macrophage activation, and lymphocytic infiltration. If the axonal connections remains intact the recovery will be faster as rapidly as remyelination occurs. Circumstantial evidences suggests that all GBS results from immune responses to nonself antigens (infectious agents /vaccines)[7]. By analysing the *Vyadhivruthanta* (history of illness*), Nidana* (etiology), *Lakshanas* (symptoms) presented here we have taken in consideration of *Vishamajwarasamprapthi* (pathology)and *Avaranajanya-vatavyadhisamprapthi* and finally arrived a final diagnosis as *Sarvangavata* and started treating this particular condition.

GB syndrome done at Govt. Ayurvedic Hospital, Nagpur[8] where managed with *Vatahara* as well as *Jwaraharachikitsa* for which medicines selected was *Candanbalalakshditaila* for *Abhyanga, nadisweda* with *Nirgundi* and *Dashamoola siddha kwatha* along with *Shashtikashalipindasweda* with *Balamula, Aswagandha churna* and *Shathavarichurna*. *Shirodhara* with *Tilataila*. *Kshira* processed with *Pittaharadravya* in the form of *Basti* was used and *Tilatailabasti* (sesame oil enema) was given on alternate days. *Brhatvatachitamani kalpa* which was composed of *Brhatvatachitamani guduci* (*Tinospora cordifolia*) *Sattva*, 30 g; *Rajatabhasma* 5 g and *Sutasekhara rasa* 30 tab each of 250 mg powdered together and divided into 60 divided doses BD was given as internal medicine. Patient was treated for a total of 36 days after which patient showed marked improvement in muscle power, gait, and reflexes.

One more case study done at SKAMCH & RC treated by selecting internal medication as *Gardabhapaya* in empty stomach along with *Shashtikashali Pindasweda* followed by *Nasya* with *Ksheerabalathaila* 101, *Rajayapana basthi* with *Brihath-chagalyatighrita* in *Kalabasthi* schedule, where patient showed marked improvement in gait, muscle power, muscle tone, reflexes and symptoms like tingling sensation[9].

Discussion on treatment

Shamanoushadhis

Considering the *Jwaraleenadosha* and *Shakhagatavata* (*Vata* affecting the extremities) we have selected the drug *Guduchi* in the form of *Ksheerapaka* (milk decoction)with *Gardabha paya*[10] (donkey's milk) and *Guduchighanavati* in the form of *Samshamanivati.*

To improve the *Jataragnibala* (digestive fire) and to reduce the *Aama* (morbid element) selected Tab. *Amlaparimala* which contains *Pravalapanchamrutha rasa, Musta, Patola, Sariva, Patha, Shunti balances the Vata* and *Pithadosha.* In order to improve her muscle bulk, muscle strength and to normalize the *Vata* selected *Shamanoushadhis* such as *Ashwagandha*[11]*, Ekangaveera rasa*[12] *Mahakalyanaka ghrita*[13].

Karmas

Considering the *Dhatwagni* level *Aama* and *Avarana* we started with *Sarvangaparisheka* with *Dashamoola Kwatha* for 7 days by which patient responded very good. Taking this as *Upashaya* (relieving factor), after attaining *Samyakrookshana lakshana*[14] we moved to the next step by selecting *Abhyanga* (oleation therapy) with *Bruhmanangathaila* as *Balashwagandha lakashadi thaila*[15] and *Shastikashalipindasweda*. All ingredients of the *Shashtikashalipindasweda* such as *Kshira (milk), Shashtikashali* (type of red rice with 60 days old), and *Balamoola*possess *Santarpana* (nourishing)qualities with *Prithwi* and *ApMahabhuta* and is indicated for *Balya, Bruhmana*, and strengthening *Dhatus* and *Vata* pacification. *Abhyaṇga* (oleation therapy) mitigates *Vātadoṣa* act gives *Puṣṭi* (promotes strength). *Doṣa* involved is *Vāta* and the disease is caused due to the reduction in its *Chalaguṇa* causing inability to transmit nerve impulses, this helps in opening up of blocks in nerve conduction and facilitates remyelinating of nerves; thereby helps to transmit nerve impulses.

Taking *Pakwashaya*[16] as *Moola sthana* for the *Vatavyadhi*we have selected *Matrabasthi* (medicated oil enema) with *Mahakalyanakaghritha* where we have found the retention time for *Matrabasthi*as 2 hours which have played a major role in improving the condition.

Along with all these treatments we have done the physiotherapies like passive exercises, passive assisted exercises and resistive exercises when she was in complete bedridden condition. Later stage we started with strengthening exercises for quadriceps, hamstrings, deltoid and biceps muscles along with calf muscle stretching exercises. Once she had improved her muscle strength over lower limb she started to stand with support, we started with co-ordination exercises, knee balancing and ankle balancing along with tilt table activity for bilateral lower limb and upper limb. she started walking with support. We have done electrical stimulation for lower back and lower limb with interferential therapy and for foot drop with FES (Faradick electrical stimulation) along with active resistive exercises, strengthening exercises for core muscles, Frenkels exercises, gait training, suspension exercises, parallel bar exercises, knee walking, knee standing, rolling, bridge exercises, trunk twisting by which patient started getting confidence to walk and got complete independency while walking. All these treatments together helped the patient to attain fastest recovery.

CONCLUSION

The analysis of GBS in terms of Ayurveda concludes that the GBS is a symptom complex where we can't correlate particular Ayurvedic term, but based on the symptoms here we have taken as *Sarvangavata.*

According to biomedicine, approximately 85% of patients with GBS achieve full functional recovery within several months to year[17]. In this patient recovery was seen in one and half months, which is suggestive of quicker beneficial effects of Ayurvedic treatment. Along with the Ayurvedic *panchakarma Chikitsa* as well as *Shamanoushadhis*, physiotherapy played a major role in improving the muscle tone, muscle strength and reflexes. This case study not only gives us confidence and better understanding for treating such cases in Ayurvedic hospital but also leads in the direction of further clinical trials to establish cost effective Ayurvedic therapy. As immunoglobin treatment is a costly alternative, cost effectiveness of the Ayurvedic treatment seems promising.

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