AYURVEDIC MANAGEMENT OF GUILLAIN-BARRE SYNDROME IN PEDIATRIC AGE GROUP: A CASE REPORT

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Abstract: Guillain-Barré syndrome (GBS) is an autoimmune origin acute peripheral neuropathy, in which rapid motor weakness occurs and is mostly triggered by a previous infection. It occurs at a rate of 2.7 per 1,00,000 per year and is more common in men than women. According to modern science, treatment includes intravenous immunoglobulin and plasmapheresis, both are expensive, and successful within few days of disease appearance. There is no direct description of this disease, available in Ayurvedic texts, few scholars correlated GBS Syndrome with Sarvanga Vata. As this disorder is autoimmune, few also correlate with Gara Visha. It can be considered as Anukta Vyadhi having correlation with Pitta Vikriti, Kapha Kshaya and Vata Prakopa. A 15 years old male patient was brought on wheel chair to All India Institute of Ayurveda, with complaint of unable to walk without support, stepping gait, weakness in bilateral lower limbs (Rt>Lt) for 6 months, pain in both calf muscles and altered sensation of bilateral feet (Lt>Rt) for few months. The patient was treated based on the principles of Vatavyadhi chikitsa and Rasayana Chikitsa which include Deepana Pachana, Udwaratana (massage with medicated powders), Abhyanga (oleation therapy), Ruksha Churna Pinda Sweda (fomentation with warm dry powder), Swedana (fomentation), Kalabasti (medicated enema procedure), Parisheka (fomentation by pouring of warm oil) and Shamana Chikitsa. Patient was admitted in the hospital for 47 days and follow up was done for further 2 months. The assessment was done on Foot and Ankle Stability Measure Scale and Ankle Hindfoot Scale. Ayurvedic management gave significant improvement and patient was able to walk without support, improved gait, started doing cycling and pain was relieved while discharge from hospital.

Key words: Guillain Barré Syndrome (GBS), Sarvanga Vata, Kala Basti

1. Introduction:

Guillain Barré Syndrome (GBS) is an autoimmune, frequently, fulminant polyradiculoneuropathy and of acute in nature. It occurs at a rate of 2.7 per 1,00,000 per year and is more prominent in men than women. In GBS rapid areflexic motor paralysis occurs, typically ascending paralysis, from lower limbs to upper limbs, evolves within hours to days. When it involves respiratory muscles (in around 20-30% patients), it may affect life. As per contemporary medical science, this condition is managed through administration of
intravenous immunoglobulin and plasmapheresis, which are expensive and effective only when given within 4 weeks and 2 weeks. Moreover administration of IVIG possess risk of liver inflammation and kidney failure. Ayurveda provides cost effective and better management of GB Syndrome. There are four Subtypes-Acute Inflammatory Demyelinating Polyneuropathy(AIDP), Acute Motor Axonal Polyneuropathy(AMAN), Acute Motor and Sensory Axonal Neuropathy(AMSN) and Miller Fisher Syndrome(MFS).

In Ayurveda, no description of such disorder is mentioned, but few scholars have correlated this with Sarvanga Vata. Sarvanga Vata word is made up of two words viz. Sarvanga and Vata, where Vata affects whole body. Few Scholars have correlated autoimmune disorders with Ojovisramsa, Kaphavrita Vata and Ama and Gara visha concept.

2. Patient information:
A male patient of 15 years (UHID No-418234, Date-September 29th 2020) came to AIIA OPD of Kaumarabritya on wheel chair, with chief complaints of unable to walk without support, weakness in bilateral calf muscles (Rt>Lt) for 6 months, pain in bilateral calf muscles and altered sensation in Bilateral feet(Lt> Rt) for few months. Patient was taking Allopathic treatment (tab thiamine, pyridoxine, cap rejunex) but no improvement was found.

The patient was healthy before 5th April 2019 as per his parents statements, then he developed intermittent high grade fever, not associated with chills and rigors with max. recorded temperature of 105 F, continued till 15th April 2019, following which he was admitted to a super speciality hospital on 15th April and diagnosed as mild ascites, viral myositis, thrombocytopenia with hepatic dysfunction and encephalopathy. At the same time, he complained of pain in both thighs when rising from sleep, lasts for 5-10 minutes and remained painfree for most of time. Patient got discharged on 23rd April 2019, remained symptom free except fever(100-101F) in May. On 8th June 2019, after arising from sleep, he complained of bilateral calf pain lasted for 4 days, continuous with no relation to activities. By 12th June, he displayed irregular stepping as if walking like drunkard, though there is no history of falling down and could walk without support. He was able to sense temperature and texture of floor. Further after 8 days, he was unable to lift his both feet and toes up(Rt>Lt) and used to make slapping sound while walking and required support to walk. He could climb stairs without difficulty by bending at hips and never had bucking of knees. This condition remained static and patient and parents noticed thinning of both calves after July month. There was no history of weakness of upper limb, fasciculation, change in sweating, hair density, change in temperature, sensation, bladder and bowel disturbance, convulsion, decrease in vision, double vision, nasal speech and any disturbance in smell, hearing or in swallowing. Patient attended the OPD of Kaumarabritya, AIIA and got admitted on 28/10/2020 and discharged on 14/12/2020(47 days). Past History: No similar illness in past, history of Koch’s at 10 years of age, took ATT for 12 months, Family History: Not significant, Personal History: mixed diet, No addictions, Treatment History: Metro Hospital at Faridabad diagnosed for mild ascites, viral myositis, thrombocytopenia with hepatic dysfunction and encephalopathy(iv monocef, iv acyclovir, iv doxy, iv optoneuron, 1 megaplatelet given), At Fortis Escort Hospital, Faridabad diagnosed for Length dependent PN(Severe Axonal SM)?, Craniorhynioma, Transaminitis (iv optineuron, in dexta, iv dynapar and tab pregabalin was given). Patient was admitted in AIIMS on 2/8/2020 and was diagnosed for Acute Motor Axonal Neuropathy
At the time of admission patient had altered sensorium of both feet (Rt<Lt), progression in previous symptoms and therefore was diagnosed as Acute Motor and Sensory Axonal Neuropathy (AMSN) Sequelae to Guillain Barre Syndrome. Follow up was taken after 2 months.

3. Examination

Dashavidha Pariksha: Prakriti(Bio-Constiution)-Kapha-Pitta, Vikriti(Disease Susceptibility)- Vata Pradhana Pitta Kapha, Saara(Quality of tissues)-Madhyama,Samhanana(Compactness of body)-Madhyama, Pramana(Anthropometry)-(Madhyama), Satva(Mental stamina)-Pravara, Satmya(Adaptability)-Pravara,AharaShakti(Digestive Power)-Samyaka, Vyayama Shakti(Physical Strength)-Madhyama,Vaya(Age)-Avara


Sensory Examination: Fine touch, pain, temperature-altered in both feet(L>R), Vibration examination: Altered(L>R), Joint position and sense: Altered(L>R), Cerebellar system: WNL, Extrapyramidal System: NAD, Gait: Stepping gait (bilateral foot drop) with support, Skull and spine: WNL, No meningeal signs

4. Investigations:

NCV of limbs:28/7/2019-Very severe sensormotor axonal pattern polyneuropathy involving lower limbs with ongoing active denervation, below knee muscles and chronic reinnervation in above knee(vastus lateralis muscle) bilaterally Diagnosis: Acute motor and sensory axonal neuropathy(AMSN)

MRI Brain(15/4/2019): suggestive of moderately large tubercinerium cavernous cerebral vascular malformations associated with developmental venous anomaly consistent with mixed vascular malformation and large right intraorbital cavernous malformation.

Assessment Criteria:

1. Foot and Ankle Ability Measure (FAAM): having subscales
   a) Activities of Daily Living Subscale: Maximum 84 points
   b) Sports Subscale:Maximum 32 points
2. Ankle Hindfoot Scale(100 Points Normal-100 for Normal)

5. Management:

A stepwise management protocol was adopted for management of this patient. The details are as follows:-

1. Deepana-Pachana: Hingwashtak Churna(with Ghrita, with first bite of meal) for 3 days
2. *Udwartana* with Kolakulathadi Churna for 5 day »

3. *Sarvanga Abhyanga* with Balashwagandhadi Tail and Dhanwantar Tail for 7 days then *Sarvanga Swedana* with Dashmoola Kwatha on the same day »

4. *Ruksha Churna Pinda Sweda* with Kottamchukkadi Churna for 7 days »

5. *Abhyantara Snehana* with Goghrita for 7 days then *Virechana* with Trivrita Avaleha »

6. *Parishek* with Balshwagandhadi Taila for 15 days with *Kala Basti-Niruha BastiofMustadi Yapana Basti, Anuvasana Bastiof Bala Taila* for 15 days.

After *Deepana Pachana* with Hingwashtak Churna, Oral medications given were Cap. Palsinuron 1 BD, Syrup Balarishta 15ml BD (with equal water after food), Ashtavarga Kashaya 20ml BD (empty stomach) for 19 days then stopped while *Abhyantara Snehana, Virechana* and *Samsarjana Karma*. Then with Basti and *Parisheka* same oral medications were given with Brihatvatchintamani Rasa 1 tab BD with honey. After discharge, medicine for follow up was- Brihatvatchintamani Rasa 1 tab BD with honey, Ashwagandha+Shatavarai +Yashtimadhu Churna (in equal amount) 1 TSF BD for Ksheerapaka, Balamula Kwatha with Vidarigandhadi Kwatha(in equal amount) 20 ml BD (empty stomach), Dashmoolarishta 20ml BD with equal water after food.

**Table 1. Snehapana**

<table>
<thead>
<tr>
<th>Date</th>
<th>Dose (ml)</th>
<th>Time of Administration</th>
<th>Onset of Hunger</th>
<th>Sneha Digestion Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/11/2019</td>
<td>30</td>
<td>7:50am</td>
<td>12:30pm</td>
<td>4hrs 30 min</td>
</tr>
<tr>
<td>16/11/2019</td>
<td>60</td>
<td>7:35am</td>
<td>7:30pm</td>
<td>10 hrs</td>
</tr>
<tr>
<td>17/11/2019</td>
<td>10</td>
<td>7:30am</td>
<td>1:00pm</td>
<td>5hrs30 min</td>
</tr>
<tr>
<td>18/11/2019</td>
<td>140</td>
<td>7:30am</td>
<td>1:pm</td>
<td>5hrs30 min</td>
</tr>
<tr>
<td>19/11/2019</td>
<td>160</td>
<td>7:35am</td>
<td>4:30pm</td>
<td>9hrs</td>
</tr>
<tr>
<td>20/11/2019</td>
<td>190</td>
<td>7:25am</td>
<td>3:30pm</td>
<td>8hrs</td>
</tr>
<tr>
<td>21/11/2019</td>
<td>220</td>
<td>7:30am</td>
<td>1:00pm</td>
<td>5hrs 30 min</td>
</tr>
</tbody>
</table>
Table 2. Kalabasti

| Date | 30/11 | 1/11 | 2/11 | 3/11 | 4/11 | 5/11 | 6/11 | 7/11 | 8/11 | 9/11 | 10/11 | 11/12 | 12/12 | 12/12 | 13/12 |
|------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| Anuvasa /Niruha | A | A | N | A | N | A | N | A | N | A | N | A | A | A | A |

A-Anuvasa Basti, N-Niruha Basti

Table 3. Samsarjana Karma

<table>
<thead>
<tr>
<th>Date</th>
<th>PratahAnnakala (Morning diet)</th>
<th>SandhyaAnnakala (Evening diet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/11/2020</td>
<td>-</td>
<td>Peya</td>
</tr>
<tr>
<td>26/11/2020</td>
<td>Peya</td>
<td>Vilepi</td>
</tr>
<tr>
<td>27/11/2020</td>
<td>Vilepi</td>
<td>AkritaYusha</td>
</tr>
<tr>
<td>28/11/2020</td>
<td>KritaYusha</td>
<td>AkritaMamsa Rasa</td>
</tr>
<tr>
<td>29/11/2020</td>
<td>KritaMamsa Rasa</td>
<td>Light Diet</td>
</tr>
</tbody>
</table>

6. Result

On assessment on different scales improvement was found mentioned in table 4

Table 4. Assessment on Scales

<table>
<thead>
<tr>
<th>Scales</th>
<th>B.T.</th>
<th>After Uwarton a</th>
<th>After S.A. and S.S. #</th>
<th>After R.C.P.S.#</th>
<th>After Virechan a</th>
<th>After Basti and Parisheka</th>
<th>After follow up of 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAAM *</td>
<td>ADLS*</td>
<td>29</td>
<td>30</td>
<td>30</td>
<td>35</td>
<td>42</td>
<td>55</td>
</tr>
<tr>
<td>Sports Subscale</td>
<td></td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Ankle Scale (AOFAS)</td>
<td></td>
<td>38</td>
<td>38</td>
<td>28</td>
<td>41</td>
<td>49</td>
<td>74</td>
</tr>
</tbody>
</table>

* Foot and Ankle Ability Measure

** Activities of Daily Living Subscale

# Sarvanga Abhyana and Sarvanga Sweda

## Ruksha Churna Pinda Sweda

Table 5. Clinical Findings:

<table>
<thead>
<tr>
<th>Before Treatment</th>
<th>After Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stepping Gait with Slapping sound (Foot drop bilateral-Rt&gt;Lt) with support</td>
<td>Normal Gait</td>
</tr>
</tbody>
</table>
Power of Ankle-1/5 | 3+5(Rt), 4+5(Lt)
---|---
Touch, Temperature, Pain sensation diminished (Lt>Rt) on dorsum of toes, Root of great toe, upper half plantar surface | Touch, Temperature, Pain-Normal Sensation
Unable to walk without support | Able to walk without support >15 minutes, able to do cycling

7. Discussion:

GB Syndrome is an acute, progressive and self-limiting disorder. Recovery occurs in 5-10% patients, and in few patients, severely progressive, leading to respiratory and kidney failure and death. In the present case, condition of patient was static for few months and then further progression occurred and admitted in AIIA. In Ayurvedic Prospective, Sampraptican be understood as, in GB Syndrome, immunity of body is not able to remember to identify self-body nerve tissues, this can be correlated with Medha Vikriti(of immune system) at Sookshma level which is Pitta Karma Vikriti Lakshana. Patient had digestion problems and low appetite. Due to Manda Jatharagni, Panchabhautik Agnigos into Aamajavastha, causes Aamaj Vridhdi of the Tikshna Guna of Pitta Dosha. Altered Medha Guna of Pitta causes inappropriately identification of self nerves as enemy and Aamaj Vridhdi of Tikshna Guna result in attack of immune system on self-body nerve tissues. Progressively Kapha Kshaya (demyelination) and Vata Prakopa (improper nerve conduction) occurs.

Therefore, management plan was Ama Banchana Samshodhan of Pitta Pacification of → Vata Brimhana of Samyak Mamsa, Majja and Kapha Rasayana Chikitsa

First Step is to treat Aamaj Awastha of Bhutagni. For this, Hingwashtaka Churna was given as Deepaniya and Pachana as it has Deepana and Aamagha and Shoolaharaeffect. Hingwashtaka Churna was given before food as it works on Apana Vaya before food.

Udwartana: It is a process where massage is done with some pressure and in upward direction (Pratilom Gati). Kolakulaththadhi Churna was taken as this is Ushna and Vata Shamaka. The purpose to start the Panchakarma Procedures with Udwartana was that, in neurodegenerative or demyelinating disorders there is always some involvement of Aama. To get Nirama Avastha, Udwaratan is very useful as friction while scrubbing produces heat (Ushnata), the powder we took is Rukhsa (dry) and Laghu and was heated, these Gunas are opposite to the Gunas of Aama (Picchila, Guru and Sheeta). Thus helps in getting Nirama Awastha, along with this, due to Ushnata Guna initiation of Vatapacification process starts. When we start the therapy with Udwartana we are preparing the body for other procedures by giving the whole body a message to prepare through touch therapy. Here Kolakulaththadhi churna was used for Udwartana which has badar, kulathi etc. ingredients which are Vata Shamaka

After getting Samyaka Lakshana of Aama Pachana, Sarwanga Snehana with Balaashwagandhadi Taila and Dhanvantari Tailawas given followed by Sarvanga Swedana with Dashmoola Kwatha (both procedures on the same day). Balashwagandhadi Taila is Vata Shamaka, Balyaand nutritive and Dhanvantari Taila is Vata Shamaka. This
intervention was seemed to work as Unupashaya, weakness of the calf muscles increased and thus it was concluded that Amapachana was completely not achieved. Therefore Ruksa Churna Pinda Sweda was applied with Kottamchukkadi Churna\(^{14}\), to get NiraamAwastha. After seven days next step was Pitta Samshodhana. For this Virechana is considered as best Panchakarma procedure. Abhyantara Snehapana with Goghrita for seven days was given followed by 3 days Sarvanga Abhyanga and Sarvanga Swedana. Virechana is medicated purgation. It’s given for Shodhana(purification) of whole body for which Trivrita Awaleha\(^{15}\) was used as it is palatable and safe for children. Virechana also provides a platform for providing better results of Basti for Vata Shamana. After Virechana improvement was found on all scales.

Kala Basti is best for Vata Management. It brings all Doshas from whole body into Koshtha and expulsion of the Doshas. Niruha was given with Mustadi Yapana Basti\(^{16}\) also called as Rajayapana Basti, as this is Yapana Basti, it is safe for children without side effects and can be given in any season. Bala Taila\(^{17}\) was used for Anuvasa as it is Vata Dosahara and Balya. Parisheka is an assortment of Swedana Chikitsa(local or whole body) in Panchakarma, where medicated liquid (Taila, Kwatha, Water, Milk, Takra etc.) is to be poured on the body (locally or whole body). Parisheka Swedana with Taila gives benefits of Snehana and Swedana the same time. In the PoorvaKarma of Basti, Snehana and Swedana should be done on Kati-Pradesha, to make Kala Basti more effective in Vata Shamana and giving the patient Balya and Brimhana Effect. Parisheka with Balashwagandhadi Taila was done on Kati Pradesh and bilateral lower limbs. Balashwagandhadi Taila is Vatashamaka along with Balya and Brimhana properties. After Kala Basti, Rasayana Chikitsa was given to nourish all dhatus.

In Cap Palsinuron, ingredients like Lajjalu is neuroprotector and helps in myelination, Sameerpannag rasa, Kurasani Ajwayan, Mahavatavidhwansa Rasa, Ekangveera Rasaare Vatahara and Shoolahara and neurotonic. Ashtavarga Kashaya\(^{18}\) is analgesic, anti-inflammatory and Aama Pachaka. Balarishta\(^{19}\) has good antioxidant activity, Vata Shamaka and Balya. Therefore, these oral medicines were used along with Panchakarma procedures like Udwartana, Sarvanga Abhyanga and Sarvanaga Sweda and RuksaChurna Pinda Sweda and Kala Basti. Abhyantara Snehpana, Virechana and SansarjanaKrama Period was oral medication free period. Brihatvatachintamani Rasa\(^{20}\) is a Suvarnakalpa, Rasayana, Balya and Vata Shamaka. Ashwagandha Churnais Rasayana and has neuroprotective effect\(^{21}\). Shatavari Churna is NaimitticRasayana for GIT, Stress reliever and has antioxidant effect\(^{22}\). Yashthimadhu Churna is anti-inflammatory, Brimhniya, Medhya and has healing effect\(^{23}\). Balamula KwathaSalya and has Vata Shamaka properties. Vidarigandha is mentioned in Angamardaprasamana\(^{24}\) Mahakashaya and Brimhniya. Dashmoolarishta\(^{25}\) is Tridoshashashamak and has anti-inflammatory effect. These medicines were given for follow up period.

Improvement was seen on Foot and Ankle Ability Measure Scale, from 20 to 79 on Activites of daily Living Subscale and from 2 to 7 in sports subscale. On Ankle hindfoot scale improvement was seen from 38 to 81 showing significant improvement in foot drop and nerve conduction.
8. Conclusion

Guillain Barre syndrome can be correlated with Sarvanaga Vata with Pitta Vikriti and Kapha Kshaya. From this case report it can be concluded that GB syndrome can be effectively managed with Deepana-Pachana, Rooksha Churna Pinda Sweda, Virechana, Basti, Parisheka like Panchakarma Procedures and oral medications like Hingwashtaka Churna, Cap Palsinuron etc. (having a very good effect in improving conditions) and herbomineral formulations like Brihatavatachintamani Rasa, Cap Palsinuron etc. (having Rasayana and Neuro healing properties). This treatment is cost effective and has no side effects. This is a single case report, therefore to prove the effectiveness of Treatment principles, multiple case studies is required for long duration of time.

9. Conflict of Interest: None

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