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**AYURVEDIC APPROACH OF GUILLAIN BARRE SYNDROME (GBS)
: A CASE STUDY**

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ABSTRACT:

GBS is an Acute , Frequently Severe and Fulminant Polyradiculoneuropathy that is Auto-immune in Nature. A disorder Affecting Peripheral Nervous System. It occurs year round at a Rate of Between 1 and 4 cases per 1,00,000 Annually. Males are 1.5 times more likely to be Affected than Females. The Incidence increases with Age , about 1 case per 1,00,000 occurs in people aged below 30 years and about 4 cases per 1,00,000 in those older than 75 years. Synonyms : Guillain Barre Strohl Syndrome ; Landry's Paralysis ; Post Infectious Polyneuritis . The Syndrome is named after French Neurologists : Georges Guillain and Jean Alexander Barre , who described it with Andre Strohl in 1916. This Article will Explain how this disorder begins , how it is Managed by Integrated Approach . Seeing the Pathophysiology of GBS , we can say that it is Vata Dominating Disorder along with Association of Pitta and Kapha doshas. So , in Ayurveda it can be compared to Kaphavruta Vyana . As a Precipitating Factor , Reduced Functions of GI Biofire Plays an Important Role by Producing Ama like Reactive Species in Genesis of this Disease. Ama itself have Immense Role along with it also vitiates the other Doshas too.

For Management of GBS through Ayurveda , Anti-Kapha and Anti-Vata and Anti Ama Measures are to be Kept in mind while Prescribing the Drugs .

KEYWORDS: GBS – Guillain Barre Syndrome ; AMAN- Acute Motor Axonal Neuropathy ; Iv Ig – Intravenous Immunoglobulin

INTRODUCTION

Precise cause of GBS is unknown. 70 % of cases of GBS occurs 1-3 weeks after an Acute Infectious Process , usually Respiratory or Gastrointestinal . The following Infections have been associated with GBS : 1) Campylobacter Jejuni Infection : It is the most common Bacterial cause of Diarrhoea in USA. It is also the most common Risk Factor for GBS. It is often found in undercooked food especially poultry.2) CMV(A Strain of Human Herpes virus) .3)Epstein Barr Virus infection.4) Mycoplasma Pneumonia .5) Influenza. 6) HIV.7) Hepatitis B and C .8) Hepatitis E virus.9) Zika virus.10) Mumps virus . GBS may also occur with certain other medical conditions such as : SLE; Hodgkins disease; Idiopathic Membranous Glomerulo Nephritis ; Enteric fever ; Filariasis ; Bee sting ; After Surgery ; Severe illness; Bone marrow Transplantation ; Vaccination for Swine flu , Rabies , Smallpox , Oral Polio , Tetanus Toxoid .Common Causes of Death includes : Respiratory Failure, Pulmonary Embolism, Infection and Autonomic Disturbances.

It has been Clinically Observed that Ayurveda helps in Treating a case of GB syndrome. It seems to help by Correcting the Altered Immune System. The Medicines are very Effective in Treating the Symptoms like Loss of Movements in all the Extremities and Power in the Limbs can be Corrected . In Ayurveda , Anti-Kapha and Anti-Vata treatment , Anti Aam Chikitsa , Majja Dhatu Pushti Kar drugs and Therapies like Raja Yapan Basti , Brihana Nasya , Shashtika Shali Pinda Sweda are used in this Case Study as an Add on Therapy to Intravenous Immunoglobulin and Physiotherapy and Proved to be Effective .

Aims And Objectives

- 1) To Study About GBS , it's Clinical Manifestations in Detail
- 2) To Access the Effect of Shamana Chikitsa (Anti-Kapha and Anti-Vata chikitsa and Anti Aam Chikitsa and Majja Dhatu Pushti Kar Drugs) as An Add on Therapy to Intravenous Immunoglobulin and Physiotherapy in GBS
- 3) To Access the Effect of Individual Panchakarma Therapies as An Add on Therapy to Intravenous Immunoglobulin and Physiotherapy in GBS

Case Report

A 19 years old patient Attended to Dhanvantari Hospital, Annasaheb Dange Ayurvedic Medical College, Ashta , Sangli with c/o Weakness(flaccid)of Bilateral Lower Limbs(onset since 1 day)

followed by Upper Limbs (Ascending Pattern)(since few hours) ; Tingling and Numbness in Bilateral Upper and Lower Limbs (since 3-4 days).

Detailed H/O Present illness revealed that patient was apparently Normal before 5 days,

H/O Fever without chills and cough (dry) (5 days back)(for 1 day)(No fever Latteron)

Followed by Myalgia , generalised weakness , followed by Tingling and Numbness in Bilateral Lower limbs (since 3-4 days). Followed by Acute Onset of Weakness over Bilateral Lower Limbs(since 1 day) and Latteron weakness of Bilateral upper limbs (since few hours). Patient got Admitted to Nearby local hospital where EMG-NCV was done which was suggestive of AMAN(Acute Motor Axonal Neuropathy, a Subtype of GBS) And CSF analysis was done which was suggestive of Albumino-Cytological Dissociation (ie Elevation of CSF Protein Level and CSF Total White Cells Count- 10 cells / microlitre) and was therefore diagnosed as GBS .As there was no improvement , patient approached to Dhanvantari hospital , Annasaheb Dange Ayurvedic Medical College , Ashta , Sangli for Further Treatment.

Past History: No H/O Any Major Medical or Surgical Illness

Family History: No H/O of Same Illness in Any of the Family Members

Table No. 1 :**General Examination**

| | | | |
|------------------|--------------|--------|--------------|
| Built | Thin | SPO2 | 100% |
| Nourishment | Malnourished | HGT | 88 mg / dl |
| Temperature | 98.0 F | Height | 5'9'' inches |
| Pulse | 100/ min | Weight | 50 kgs |
| Respiratory Rate | 24 / min | Tongue | Uncoated |
| BP | 120/80 mmHg | | |

(Source: Primary Data)

No Pallor / Icterus / Cyanosis / Clubbing / Koilonychia / Eedema / Lymphadenoopathy

Table No. 2 :Systemic Examination

| | | | | | | | | | | |
|----------|---|------|-------|------|----|-----|-----|----|-----|-----|
| RS | AEBE | | | | | | | | | |
| CVS | S1, S2 Normal | | | | | | | | | |
| CNS | conscious , oriented ,Obeying to Verbal Commands , Responding to D.P.S | | | | | | | | | |
| Plantars | Bilateral Flexors | | | | | | | | | |
| DTR's | All ABSENT (ie Absent B/L knee jerk ,Ankle jerk , Achilles Tendon Jerk, Biceps jerk , Triceps jerk , Brachioradialis , Finger jerk) | | | | | | | | | |
| Pupils | Bilaterally Normally Reacting to Light | | | | | | | | | |
| Powers | <table border="0"> <tr> <td></td> <td>Right</td> <td>Left</td> </tr> <tr> <td>UL</td> <td>1/5</td> <td>1/5</td> </tr> <tr> <td>LL</td> <td>0/5</td> <td>0/5</td> </tr> </table> | | Right | Left | UL | 1/5 | 1/5 | LL | 0/5 | 0/5 |
| | Right | Left | | | | | | | | |
| UL | 1/5 | 1/5 | | | | | | | | |
| LL | 0/5 | 0/5 | | | | | | | | |
| P/A | Soft , Non Tender , LOSOKO | | | | | | | | | |

(Source: Primary Data)

Table No. 3 Ashta Vidha Pariksha

| | |
|---------|---------------------------------|
| Nadi | 100 / min, Vata pradhan Kaphaja |
| Mala | Twice a Day |
| Mutra | 6-8 times a day |
| Jivha | Alipta |
| Shabda | Avisheha |
| Sparsha | Anushna Sheeta |
| Druk | Avishesha |
| Akriti | Krusha |

(Source: Primary Data)

Table No. 4 Dasha Vidha Pariksha

| | |
|---------------|-----------------------|
| Prakruti | Kapha , Vata |
| Vikruti Dosha | Kapha , Vata |
| Dushya | Asthi , Majja , Snayu |
| Kala | Shishir |
| Bala | Hina |
| Sara | Rasa (+) , Rakta (++) |

| | |
|-------------------------------------|-----------|
| Samhanana | Madhyama |
| Satmya | Vyamishra |
| Satva | Pravara |
| Pramana | Madhyama |
| Ahara Shakti, Abhyavarana Shakti | Madhyama |
| Jarana Shakti | Madhyama |
| Vyayama Shakti | Avara |
| Vaya | Madhyama |

Differential Diagnosis :

- a) GBS (Guillain Barre Syndrome)
- b) Transverse Myelitis
- c) Botulism

Diagnosis :

GBS (Guillain Barre Syndrome)

Treatment :

Treatment A (combination of Intravenous Immunoglobulin and Physiotherapy)

- 1) Intravenous Immunoglobulin(IV Ig) --Intravenous Immunoglobulin is often the initial therapy chosen because of it's ease of Administration and Good Safety Record. Anecdotal Data have also suggested that IV Ig maybe Preferable to Plasma Exchange (PE) for AMAN and MFS variants of GBS.

Dose-- 0.4 gm/kg/day for 5 days .ie In this case study , dose given is 0.4 gms*50kgs= 20gms/day for 5 days . ieTotal Dose of 100 gms in 5 days(Starting from day 1 to day 5).

IV Ig helps to Block the Antibodies causing GBS . Immunoglobulin contains Normal , Healthy , Antibodies from Donor.

- 2) Physiotherapy-- Limb and Chest Physiotherapy are given to keep the Muscles Strong and Mobile .

Electrical Stimulation with Muscle Stimulator is given.

Treatment B (Shamana Chikitsa{It includes use of Anti-Kapha treatment and Anti-Vata treatment , Anti Aam Chikitsa , Majja Dhatu Pushti Kar drugs }) --

In this Case Study I had used,

- a) Chitrakadi vati (1 tab of 500 mg twice a day for 5 days ie from day 6 to day 10) (Anti Kapha and Anti-Vata and Anti-Aam) +
- b) Giloy Ghanvati (1 tablet of 500 mg twice a day for 5 days ie from day 6 to day 10)(Majja Dhatu Pushti Kar dravya and Anti-Aam)

Treatment C (It includes Use of Gardabha Paya=Donkey's milk +

Shashtika Shali Pinda Sweda and Nasya +

Raja Yapana Basti)

- 1) Gardabha Paya --100 ml of Gardabha Paya is given in Empty Stomach in the morning , once a day(From Day 11 to Day 25 ie for 15days)
- 2) Shashtika Shali Pinda Sweda and (Brimhana)Nasya— Shashtika Shali is Boiled in Milk to which Balamula Kwath and Dashmula Kwath are added and Pottali is Prepared by which Sweda is to be done , followed by 10 drops of Brimhana Nasya in Each Nostril with Ksheera Bala Taila (From day 11 to day 25 ie for 15 days)
- 3) Raja Yapana Basti(Brimhana) –

Anuvasana Basti with Brihat Chagalyadi Ghrita -80 ml .

Niruha – It is prepared in Khalwa Yantra by Taking following ingredients

Honey – 30 ml , Saindhava Lavana- 10 gms , Brihat Chagalyadi Ghrita – 80 ml , Kalka – 40 gms , Kashaya—300 ml , Mamsa Rasa—100 ml. This Basti is given for 15 days in Kala Basti Schedule. (ie From day 11 to day 25)Observations were noted before and after each line of treatment

Before Treatment-- BT (ie on day 0)

After Treatment A – AT1 (Combination of Intravenous Immunoglobulin and Physiotherapy)(ie Observations on day 5)

After Treatment B – AT2(It includes use of Anti-Kapha and Anti-Vata treatment , Anti Aam Chikitsa , Majja Dhatu Pushti Kar drugs) (ie Observations on day 10)

After Treatment C—AT3 (It includes Use of Gardabha Paya=Donkey’s milk + Shashtika Shali Pinda Sweda and Brimhana Nasya + Raja Yapana Basti)(ie Observations on day 25)

Table No. 5 :Improvement in Symptoms Before and After Treatment

| Symptoms | BT | AT1 | AT2 | AT3 |
|--------------------------------------|----------------|---|-------------------------------------|-----------------------------------|
| Loss of Strength in Both Upper Limbs | Present | Mild Improvement | Moderate Improvement | Significant Improvement |
| Loss of Strength in Both Lower Limbs | Present | Mild Improvement | Moderate Improvement | Significant Improvement |
| Loss of Movement in Both Upper Limbs | Present | Flicker Movement , Movement of Fingers | Lifting of Hands upto 90 degrees | Lifting of Hands upto 180 degrees |
| Loss of Movement in Both Upper Limbs | Present | Movement of Both Toe | Raising Leg Partially | Raising Leg Completely |
| Standing | Not Able to do | Stands with Support for 5-10 minutes | Stands with Support Completely | Stand Without Support |
| Walking | Not Able to do | Walks for Few Steps with Support | Walks without Support for Few Steps | Walks Without Support Completely |
| Stiffness | Present | Mild Improvement , Raise Hand with Difficulty | Raise Hand with Resistance | Raise Hand without Resistance |
| Tingling Sensation | Present | Absent | Absent | Absent |
| Fine Movements | Absent | Absent | Mildly Present | Present Not Completely |

(Source: Primary Data)

Effect of Treatment on CNS—

The Following Effects are Noted in the CNS Post Treatment

Cranial Nerve Examinatio---

There is No Abnormality Detected in the Cranial Nerves Examination.

Table No. 6 :Motor System : Pre and Post Treatment

| Parameters | BT | AT |
|----------------|-----------------------|-------------------|
| Muscle Wasting | Present in Both Arms | Slightly Improved |
| Muscle Tone | Hypertonia | Normal |
| Co ordination | Absent in Lower Limbs | Present |

(Source: Primary Data)

Table No. 7 :Muscle Power : Pre and Post Treatment

| Parameters | BT | AT |
|------------------|-----|-----|
| Right Upper Limb | 1/5 | 4/5 |
| Left Upper Limb | 1/5 | 4/5 |
| Right Lower Limb | 0/5 | 4/5 |
| Left Lower Limb | 0/5 | 4/5 |

Gradation of Muscle Power --The Following are the Gradation of the Muscle Power

- 0- No Contraction
- 1- Active Movement with Gravity Eliminated
- 2- Active Movement Against Gravity
- 3- Active Movement Against Gravity and Mild Resistance
- 4- Active Movement Against Gravity and Moderate Resistance
- 5- Active Movement Against Gravity and Full Resistance (Normal Power)

Reflexes : Pre and Post Treatment (Table No. 8)

| Superficial Reflexes | Right (BT) | Right (AT) | Left (BT) | Right(AT) |
|-----------------------------|--------------------|--------------------|-------------------|-------------------|
| Corneal Reflex | + | + | + | + |
| Glabellar Blink Reflex | + | + | + | + |
| Abdominal Reflex | + | + | + | + |
| Plantar Reflex | Flexor | Flexor | Flexor | Flexor |
| Deep Reflex | Right (BT) | Right (AT) | Left (BT) | Right(AT) |
| Jaw Jerk | + | + | + | + |
| Triceps Jerk | - | + | - | + |
| Biceps Jerk | - | + | - | + |
| Brachioradialis Reflex | - | + | - | + |
| Biceps Reflex | - | + | - | + |
| Finger Flexion Reflex | - | + | - | + |
| Knee Jerk | - | + | - | + |
| Ankle Jerk | - | + | - | + |

(Source: Primary Data)

Grading For Reflexes

- = Absent, + = Normal , ++ = Brisk, +++ = Clonus

Rationality Behind Selection of Ayurvedic Approach in GBS

Treatment of GBS according to Modern Medicine includes Usage of Intravenous Immunoglobulin and Plasma pheresis ...Both are Expensensive Treatment...So , Therefore the Treatment which is cost Effective , which improves the Quality of Life in the patients with Nil or Minimal side effects and in Less time , is the Need of Hour in this Particular Disease. There is No Direct Reference of this Disease in our Classics. But Based on Signs and Symptoms, the Dosha and Dushyas involved can be Assessed and Accordingly the Treatment can be Provided. In this particular Syndrome , Predominance of Vaat Dosha is very much Appreciated . The Definition of ‘Vaat’ is “ Vaa Gati Gandhanayoh” wherein ‘Gati’ is Interpreted as ‘Motor’ and ‘Gandhana’ is Interpreted as ‘Sensory’ Functions of Nervous System by Various Aacharyas. It is also Interpreted that Vaat is the Prime Dosha that Governs the Nervous System. Manifestations of Vaat Vyadhi is of 2 types – Upastambhita and Nirupastambhita , by Analyzing above Pathology and Symptoms most of which

can be compared to Kaphavruta Vyana like Vedana , Sarva Gati Guruta , Sarva Sandhi Asthi Ruja, Gati Sanga , Klama ; Based on this the Treatment Protocol is Selected in this Present Study . Mainly in Avarana conditions , Avaraka Dosha is Treated first ie Kapha Dosha which is done by Shamana Aushadhis and then treatment for Avruta Dosha ie Vata Dosha , for Vata Vyadhi , Brimhana among Shad Upakramas is Highly Indicated . Bastikarma has been doing wonders in the Treatment of Vata Vyadhi . From the above Description , it is understood that Brimhana type of Basti along with Shasthika Shali Pinda Sweda and Brimhana Nasya plays a Major Role . Hence Raja Yavana Basti is Selected for the Present Study . The drugs present in Raja Yavana Basti are Very Cost Effective , Easily Available and without any known side effects. From the Above Description it is Understood that Brimhana Chikitsa is the Requirement for the Management of Guillian Barre Syndrome .

Discussion

GBS is an Auto immune Disease. The Cells of the Immune System Attacks only Foreign Material and Invading Organisms. In GBS , however , the Immune system starts to Destroy the Myelin Sheath that surrounds the Axons of Many Peripheral Nerves, or even the Axons themselves . The disease damages Parts of Nerves. This Nerve Damage causes Tingling , Muscle Weakness and Paralysis . GBS most often affects the nerves covering the Myelin Sheath . Such damage is called Demyelination , Because it's function is to help Promote Conduction of Nerve Impulses , it's Integrity is Essential for Proper Functioning of the Peripheral Nervous System and it causes Nerve Signals to Move More Slowly . Damage to other parts of the Nerve can cause the Nerve to stop working Altogether .

In Ayurveda , as it can be compared to Kaphavruta Vyana , Role of Vata is indispensable as the Entire Nervous System is under the Control of Vata. Hence , correction of Vata is very important so as to bring Normalcy to the Body. Basti is one of the Important Therapies amongst all the Treatments hence Acharya Charaka Described that , “Sarvam Chikitsamapi Chikitsardhimiti Bruhanti” .

Basti especially Yavana Basti is indicated in Avarana Condition . Extensive Description Regarding Yavana Basti is found in Cha.Siddhi.Sthana . There it has been Quoted that Yavana Basti is that form of Basti which can be Administered to Atura and Swastha as well , without much complications , especially in this disease Raja Yavana Basti is given , which has properties of

Mamsa Balajanana , Shulahara , Janu , Uru , Jangha, Graham , Tridosahara , Sadyo Balajanana , Rasayana . Yapan Basti is indeed Rasayana type of Basti , it's Role in Regeneration of Lost Myelin / Axon can be Expected . The Drugs used in Raja Yapan Basti like Madhu , Ksheera , Mamsa Rasa , Guduchi , Bala , Rasna , Usher , Laghu Panchamula contains Anti- Oxidants , Higher Amount of Flavonoids (which have Neuro Protection Action) . This Confirms to their Rasayana , Sanjeevana Property.

Gardabha Paya - It contains 3 Proteins – Alpha-lactalbumin , Beta – Lactoglobulin , Lysozyme acts on Infectious Conditions , Essential Fatty Acids – PUFA n – 3 – Alpha – Linolenic Acid (ALA) and Linoleic Acid (LA) – Atrophy Conditions , Loss of Strength and it is Mentioned in Charaka as Kapha Vata Hara. Donkey's Milk is Rich in Immuno-globulin which helps human body from many Viral and Bacterial Infections.

Shashtika Shali Pinda Sweda – Madhura , Kashaya Rasa , Laghu , Snigdha , Mridu , Sheeta Veerya , Madhura Vipaka , Tridosha Hara , Brihmana , Balya. Shashtika Shali contains Amino Acids – Methionine , Tyrosine , Vitamin B , Manganese , Anti- oxidant Property and Mainly used in Neuro muscular Disorders , Muscular Wasting , improves Muscle Strength.

Nasya with Ksheera Bala Taila – It's a Type of Brihmana Nasya which Mainly acts on Vata Dosha

Conclusion

After Follow up period of 5 days , the patient is managed by Shamanoushadhi's , there is Drastic Improvement in Signs and Symptoms , Patient is able to walk without Support along with improvement in Fine Movements also . Patient is able to perform his Daily Routine Activities Without Difficulty . It is Observed that More Improvement is seen After Raja Yapan Basti as it Contains Drugs having Neuro protective , anti-oxidant properties . Further Studies are to be conducted on this as the present paper is a Single Case Study . Trial in a Larger Sample is Required to Generalize the outcome

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