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A CASE STUDY OF GUILLAIN-BARRE SYNDROME WITH AYURVEDIC MANAGEMENT

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ABSTRACT

Guillain-Barre syndrome is a post infectious rapidly progressive symmetric polyneuropathy involving mainly motor but sometimes also sensory and autonomic nerves. This syndrome is a common cause of acute flaccid paralysis (AFP) in children. A 8 yr old male child presenting sudden onset loss power of lower limb, unable to walk, stand brought by relative tout door patient department of government Ayurvedic Hospital Nanded. He was provisionally diagnosed as a case of acute flaccid paralysis previously patient admitted and treated at one of the private hospital in Nanded, but did not show any sign of improvement so patient was admitted and treated with Ayurvedic treatment for about 30 days. As per Ayurvedic classics, this condition can be correlated with *sarvangagatavatvyadhi* (*vata dosha* affecting all part of the body) which preceded by *jvara* (H/O fever before onset of GBS).Hence, the principle of treatment is *vatashamak chikitsa* it include *abhyanga* (oleation therapy), *shashtishalikapindsveda* (sudation using a hot *shashtika* rice), *karmabasti* (medicated enema), *sirodhara* (gentle pouring of medicated liquid over forehead) and *jvaraghna chikitsa* (treatment of fever). Using various Ayurvedic herbo-mineral compounds remarkable results observed in the form of improvement in the muscle power two to five in both lower limbs. There was no difficulty post treatment in standing and walking a now patient has near to normal movements.

Keywords: GBS, AFP, *sarvangagatavatavyadhi, abhyanga, karmabasti, jvaraghna chikitsa*

INTRODUCTION

Guillain-Barre syndrome is a post-infectious polyneuropathy involving mainly motor but sometimes also sensory and autonomic nerves. This syndrome affects people of all ages and is not hereditary. The paralysis usually follows a non-specific viral infection by about 10 days. The original infection might have caused only gastrointestinal (especially *Campylobacter jejuni,* but also *Helicobacter pylori*) or respiratory tract (especially *Mycoplasma pneumoniae*) symptoms. West Nile virus also can cause Guillain-Barre-like syndrome, but more often it causes motor neuron disease similar to poliomyelitis.[1]

Weakness usually begins in the lower extremities and progressively involves the trunk, the upper limbs, and finally the bulbar muscles, a pattern known as **Landry ascending paralysis.** Proximal and distal muscles are involved relatively symmetrically, but asymmetry is found in 9% of patients. The onset is gradual and pro-

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gresses over days or weeks. Particularly in cases with an abrupt onset, tenderness on palpation and pain in muscles is common in the initial stages. Affected children are irritable. Weakness can progress to inability or refusal to walk and later to flaccid tetraplegia. Paresthesias occur in some cases. **Bulbar involvement** occurs in about half of cases. Respiratory insufficiency can result. Dysphagia and facial weakness are often impending signs of respiratory failure. They interfere with eating and increase the risk of aspiration. The facial nerves may be involved. Some young patients exhibit symptoms of viral meningitis or meningoencephalitis. Tendon reflexes are lost, usually early in the course, but are sometimes preserved until later. This variability can cause confusion when attempting early diagnosis.[2] As per Ayurvedic classics this condition can be correlated with *sarvang gatavatavyadhi* (*vata vyadhi* affecting all parts of the body).[3] Hence, the choice of treatment is *vatashamak chikitsa* [4] it include *abhyanga* (oleation therapy) by *chandanbalalakshadi tail* [5] and *shashtishalikapindsveda*[6] (sudation using a hot shashtika rice) along with *karmabasti*[7] *(pittanghna* drugs processed in *kshira*) *sirodhara* (gentle pouring of medicated liquid over forehead) and *brihatvatachintamani kalpa*[8] whose main ingredient include *guduchi* (*Tinospora cordifolia*) *sttva, rajatbhashma*[9] and *sutshekhra rasa.*[10]

CASE REPORT-

A 8 year old male child (OPD No.-60320-4/07/2016) presented with sudden onset loss power of lower limbs. There was inability to walk, stand since 15 days. He was treated as a case of acute flaccid paralysis at one of the private Hospitals in Nanded and the symptoms of patient not shown any improvement and hence his condition was deteriorating. He was brought by his relative at govt. Ayurvedic Hospital Nanded. Patient was admitted in indoor patient department (IPD No.-4262-4/07/2016). He did not have any history of diabetes, hypertension, asthma, tuberculosis, or any major surgical procedure.

PAST HISTORY-

Patient was healthy a month before presentation of symptoms but had fever for which he had taken medication form a local practitioner and even then the fever did not subside. He developed gradual weakness in both lower limbs with ascending progression. For these he admitted to private hospital and investigated for electromyelogram and nerve conduction velocity (EMG NCV) and diagnosed as GBS on 28/06/2016 Treatment received by patient in private hospital (over a seven day period) included Inj. Ceftriaxone (900mg BD), Inj. Amikacine (160mg BD), Pregabalin (75 mg) with methyl cobalamine and Vitamin B complex.

EXAMINATION ON ADMISSION-

General Examination-

The general condition of patient was moderate, afebrile and his pulse was 100/min, respiratory rate- 24/min, blood pressure 110/70 and Weight-28kg.

Physical Examination-

There was diffuse weakness of both lower extremities, muscle tone was decreased and vibratory sensation was diminished in the distal lower extremities.

Systemic Examination-

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

Deep Tendon Reflexes-

Ankle- absent, knee- absent, superficial planter reflexes- absent

Muscle power grade on admission-

	Rt	Lt
Upper limb-	5/5	5/5
Lower limb-	2/5	2/5

Ashtavidha parikshan-

The patient's pulse was *v tapitta* predominant, tongue was *s ma* (coated), was of *madhyam kr. ti* (medium built) had no difficulty in speaking. *Malabaddhat* (constipation) was also present.urine output chart was maintained

Vikrutastrotas parikshana-

Masavahasrotovikrti was presented as *ubhayap da daurbalya* (weakness over both lower limbs). While *majj vahastrotas* showed paraplegi

Investigation-

Routine studies of blood and urine were within normal limits. CT-Scan of brain was normal. MRI LS Spine-was within normal limits. EMG-NCV showed sub-acute demyelinating sensory motor polyneuropathy involving both lower limbs and distal and proximal segment was affected. This EMG-NCV was done in private child hospital Nanded; directing the diagnosis towards GBS.

Management-

After confirming presence of intestinal motility *basti* started. Around 30 ml of indirectly heated *chandanabalalakshadi-tailam* [6] was applied in *anuloma gati* (downward) for 15 min (*bahya snehana*) and *nadiswedana by nirgundi* (*vitex nigundo*) *and dashamula siddha kvatha* (decoction) for a period of 15 minutes. 10 g of *bala mula* (root of *Sida cordifolia*) 10 g of *asvagandha* (*Withania somnifera*) *churna* and 10 g *satavari* (*Asparagus racemosus*) was processed with 500 ml of *kshira* (milk) wherein milk was boiled to reduce the quantity to half with 25 g of *sastikasali* (processed *sastika* rice) was cooked very soft and made like paste with above filtrate of *kshira*. This paste was applied with gentle circular movements for 20 min in *anuloma gati*. Patient was treated for a total of 36 days.[7] *Sirodhara* was done using *tila tailam* (lukewarm sesame oil) for a period of 15-20 min for 16 days.[11] *Kshira* processed with *pittahara dravya* in the form of *basti* was used and *tila taila basti* (sesame oil enema) was given on alternate days.[8] *Basti* was administered between from 6th july 2016 to 22th July 2016. *basti* retention time increased gradually after starting the treatment and with the improvement in basti retesion time clinical condition also improved. *Brihatvatachitamani kalpa* which is composed of *brihatvatachitamani*,[8] 1 g; *guduchi*(*Tinospora cordifolia*) *sattva,* 30 g; *rajata bhasma*[9] 5 g and *sutasekhara rasa*[10] 30 tab each of 250 mg powdered together and divided into 60 divided doses BD was given as internal medicine.

Result-

As Ayurvedic treatment progressed, the patient got beneficial effects. On admission patient was unable to walk, sit without support. After treatment with various *pancakarma* procedures such as *snehana*[12] (using *chandanbalal ksadi tailam), nadisvedna* Initially for three days followed by *pindasveda, basti, sirodhara, balya cikitsa* (Nourishing treatment) and administration of a formulation containing *svarna* (Gold) *bhasma, brihatvatacintamani* and *sutasekhara rasa* helped improve the symptoms of patient

DISCUSSION

In the demyelinating forms of GBS, the basis for flaccid paralysis and sensory disturbance is conduction block. This finding, demonstrable electro physiologically, implies that the axonal connections remain intact. Hence, recovery can take place rapidly as remyelination occurs. In severe cases of demyelinating GBS, secondary

axonal degeneration usually occurs; its extent can also be estimated electro physiologically. More secondary axonal degeneration correlates with a slower rate of recovery and a greater degree of residual disability. When a severe primary axonal pattern is encountered electro physiologically, the implication is that axons have degenerated and become disconnected from their targets, specifically the neuromuscular junctions, and must therefore regenerate for recovery to take place. In motor axonal cases in which recovery is rapid, the lesion is thought to be localized to preterminal motor branches, allowing regeneration and reinnervation to take place quickly. Alternatively, in mild cases, collateral sprouting and reinnervation from surviving motor axons near the neuromuscular junction may begin to re-establish physiological continuity with muscle cells over a period of several months.[13] In GBS there is ascending paralysis, weakness beginning in the feet and hand and migrating towards the trunk, this was considered as *mansa, rakta* and *majja dhatu duhti* along with *vata, majjadharakala* and *pittadharakala* involvement. Hence while treating this patient, we decided to use *pittadharakala* and *majjdharakala sahacharya*.[14] Constipation of patient is indication that *Anuloma gati* of *vata* is affected. Nourishment of nerves is also important. Considering all the above facts we decided to use *sutasekhararasa, guduchi sattva* and *brihatvatacintamani*. *Guduchi* acts on *majja* and *jvara*. It is also antinflamatory, antioxidant.[15-16] Massage with *asvagandha, bala, satavari pindasveda* (rice processed with milk and *withania somnifera asparagus racemosus*, *sida cordifolia*) was performed. All ingredients of the *pindasveda*, *kshira* (milk), *sastikasali* and *balamula* possess *santarpana* qualities (Antioxidantant nourishing)with *prithvi* and *aapa mahabhutas* (subtle elements of earth and water, which are nourishing in nature) and is indicated for *balya*, *brimhana* (nourishing), strengthening *dhatus* (building blocks) and *vata* pacification. *Abhyanga*, mitigates *vatadosa*, it is *pustikara* (promotes strength) and it is *Jarahar* (prevents aging). *Abhyanga* using *chandanbalalaksadi tailam* and *sastikasalipindasveda* were performed in *anuloma gati* because the *dosa* involvedis *vata* and the disease is caused due to the reduction in its *chalaguna* causing inability to transmit nerve impulses. Considering the *dosa* and *dhatu* involvement *vataniyantrana* and *balya* treatments were selected and movements were performed in *anuloma gati*. *Sasthisalipindasveda* facilitates opening up of blocks in nerve conduction and facilitates remyelination of nerves; thereby helps transmit nerve impulses with minimum amount of stimulus for muscular contractions. *Basti* (medicated enema) is an effective treatment for *vata*. It also brings about *anulomana* of *vata*. When we use this route of administration we can facilitate rapid absorption action of medicated oils and decoctions for *vata* disorders. The patient came with history of *jvara* which was *pittapradhana*. Hence we have used this route of administration for *vataghna* and *pittaghna* medicines i.e. *pittaghnaganasiddhaksirabasti*. We were expecting action of drugs on *majjadharakala* through *pittadharakala*. We know that GBS is autoimmune in nature which means that there is hypersensitivity of immune system. There are two major phenomenons in the pathogenesis of Auto-immune disorders. •Mistaken judgement about body tissue • Attack of immune system on the body tissues to destroy them.[17] Mistaken judgement about body tissue occurs by the virtue of *sighra guna*. While explaining

vataprakrti Charaka states that by virtue of this *sighra guna* we can found *alpa smruti* (~lesser remembrance) and *sighra grahita* (~Early identification) in persons. *Alpa smruti* when occurs at the level of WBC their recognition of body tissues is disturbed. Hence treatment which reduces this *sighraguna vata* is also very important while treating auto immune disorders.[18] Attack of immune system- while describing *pitta praktilaksana* Charaka[18] has mentioned that *tiksna guna* of *pitta* is responsible for *tiksnagni* and *tiksnaparakrama* (~Increasedappetite and increased tendency to fight). When we correlate this effect of *tiksnaguna* with respect to immune system, increase in *tiksnaguna* causes destruction of external pathogen. *Tiksnaguna* of *pitta* along with *sighra guna* of *vata* at immune system level bring about misjudgement and hypersensitivity and causes destruction of the body tissue and we can postulate that this is how autoimmune disorders occur. Hence consideration of *tiksna guna* of *pitta* and its treatment is very important while treating various autoimmune disorders. Charaka has also stated importance of *kshira* in the treatment of *vatpittaja jvara.* Hence *pittaghna dravya siddha kshira basti* is used. Treatment of *vata* can be used while treating various auto immune disorders. In short, *vata pittaghna chikitsa* is important in treatment of autoimmune disorders. Various *vata* and *pittaghna dravyas* can be used according to *samata or niramata* in the treatment of autoimmune disorders. Considering all this *pittaghna gana sidhha kshira* (Milk processed with herbs of *pittaghnagana*) was used for *basti*.[7] *Sutasekhara rasa* is a drug which classically acts on *pitta* while *guduchi* and *raupya bhasma* acts on *majjadhara kala*. Ayurvedic concept of *pittadhara kala* and *majj dhara kala sahacharya* also shows resemblance with molecular mimicry theory for C. Jejuni and nerve involvement in GBS pathology.[19] Considering all this *s ta ekhara rasa* was given along with *guduchi* and *raupya bhasma* and *brihatvatcintamani*. According to biomedicine, patients with GBS achieve full functional recovery within several months to year.[20] In this patient recovery was seen in one and half months, which is suggestive of quicker beneficial effects of Ayurvedic treatment.

CONCLUSION

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. This case study also confirms that Ayurvedic *kriya* and Ayurvedic diagnosis is very important in terms of *dosa*, *sthana* (~status) and *udgama* (~etiology). *Pittadharakala* and *majjadharakala* relation and clinical understanding of basic concepts of *guna* in treatment of *anukta vyadhi* form the important bridge between modern diagnostic methods and Ayurvedic treatment of GBS

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