World Journal of Pharmaceutical and Life Sciences

www.wjpls.org

Impact Factor: 8.21 Coden USA: WJPLA7

"REVISITING GUILLAIN-BARRE SYNDROME: AYURVEDIC PATHOGENESIS AND PANCHAKARMA-BASED MANAGEMENT

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DOI: https://doi.org/10.5281/zenodo.20019896

How to cite this Article: Mishra Kumari Kirti[1*], Vikram Kumar[2] (2026). "Revisiting Guillain-Barre Syndrome: Ayurvedic Pathogenesis and Panchakarma-Based Management. World Journal of Pharmaceutical and Life Sciences, 12(5), 293–302.

Article Received on 20/04/2026 **Article Revised on 01/05/2026** **Article Published on 04/05/2026**

ABSTRACT

Background: Guillain-Barre Syndrome (GBS) is an acute, immune-mediated peripheral polyneuropathy characterized by progressive ascending paralysis, sensory deficits, areflexia, and in severe cases, respiratory failure. Though modern medicine employs intravenous immunoglobulin therapy and plasmapheresis for acute management, complete recovery remains elusive in many patients and long-term rehabilitation support is limited. Ayurveda, the ancient Indian system of medicine, does not explicitly name GBS; however, its clinical manifestations closely resemble the condition described as *Sarvangavata* (Vata disorder affecting the entire body) within the broader framework of *Vatavyadhi* (disorders caused by vitiated Vata dosha). The Panchakarma system of bio-purificatory therapies offers a structured, individualized approach to the management of such neuromuscular disorders. **Aim:** To review and compile the Ayurvedic understanding of Guillain-Barre Syndrome with emphasis on its conceptual correlation as *Sarvangavata*, its pathogenesis through *Samprapti Ghataka*, dosha-dhatu-srotas involvement, and the role of Panchakarma in its comprehensive management. **Materials and Methods:** This is a narrative review based on classical Ayurvedic textual references from *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridayam*, and *Ashtanga Sangraha*, along with published peer-reviewed case studies and review articles on GBS management in Ayurveda. Relevant sections pertaining to *Vatavyadhi Chikitsa*, *Sarvangavata*, *Pakshaghata*, *Avarana*, and Panchakarma, reviewded. **Results and Observations:** GBS demonstrates a clinical presentation closely mirroring the Ayurvedic description of *Sarvangavata* with features of *Kaphavruta Vyana*, *Pittavruta Vyana*, and *Majja Dhatu Dushti*. The pathogenesis begins with *Agnimandya* (impaired digestive fire), leading to *Ama* formation, progressive *Srotorodha* (channel blockade), and culminating in *Dhatukshaya* with predominant Vata aggravation. Panchakarma procedures including *Snehana*, *Swedana*, *Basti*, *Virechana*, *Nasya*, and *Shasthikashali Pindasweda* have demonstrated significant symptomatic improvement and functional recovery in published clinical cases. **Conclusion:** Guillain-Barre Syndrome can be effectively managed within the Ayurvedic framework of *Sarvangavata Chikitsa* and *Avaranajanya chikitsa* and by Panchakarma. The integration of classical bio-purificatory procedures with nourishing *Rasayana* therapy and individualized *Pathya-Apathya* (dietetics) offers promising outcomes in neurological rehabilitation and may significantly enhance quality of life in GBS patients.

KEYWORDS: *Guillain-Barre Syndrome, Sarvangavata, Vatavyadhi, Kaphavruta Vyana, Pittavruta Vyana, Majja Dhatu Dushti, Panchakarma chikitsa.*

INTRODUCTION

Guillain-Barre Syndrome (GBS), first described by Georges Guillain, Jean Alexandre Barre, and Andre Strohl in 1916, is a heterogeneous group of acute immune-mediated polyneuropathies that together constitute the most common cause of acute flaccid paralysis worldwide.[1] The global annual incidence of GBS ranges from 0.4 to 4.0 cases per 100,000 population, with a slightly higher predilection among males and with risk increasing with advancing age.[2] The syndrome typically presents as an ascending, symmetrical muscle weakness beginning in the lower

extremities and progressing toward the trunk, upperlimbs, and in severe cases, respiratory musculature, accompanied by loss of deep tendon reflexes, sensory disturbances including paresthesia and pain, and autonomic dysfunction manifesting as cardiac arrhythmias, blood pressure instability, and bladder dysfunction.[3]

GBS is fundamentally an autoimmune disorder in which a preceding infection — most commonly caused by Campylobacter jejuni, cytomegalovirus, Epstein-Barr virus, or Mycoplasma pneumoniae — triggers an aberrant immune response that cross-reacts with peripheral nerve antigens through a mechanism known as molecular mimicry.[4] The principal subtypes of GBS include Acute Inflammatory Demyelinating Polyneuropathy (AIDP), which is predominant in Western countries and accounts for up to 90% of cases in Europe and North America; Acute Motor Axonal Neuropathy (AMAN); Acute Motor and Sensory Axonal Neuropathy (AMSAN); and Miller-Fisher Syndrome (MFS).[5] While the prognosis is generally favourable with appropriate management, approximately one-third of patients require mechanical ventilatory support, the mortality rate remains around 10%, and nearly 20% of survivors are left with significant long-term disability.[6]

Contemporary treatment of GBS relies primarily on IVIg therapy and plasma exchange (plasmapheresis), both of which have been shown in randomised controlled trials to shorten the course of illness and accelerate recovery. However, these modalities are expensive, inaccessible in resource-limited settings, and may not prevent residual deficits in all patients. Moreover, rehabilitation — physiotherapy and occupational therapy — forms a critical component of long-term functional recovery, highlighting the importance of multi-modal management approaches.[7]

In the context of Ayurveda, the ancient Indian system of medicine codified in texts such as the *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridayam*, and *Ashtanga Sangraha*, diseases of the nervous system fall under the broad category of *Vatavyadhi* — disorders arising from the vitiation of Vata dosha, the bio-energetic principle governing all movement, neural impulses, and physiological coordination in the body. Among the various manifestations of Vatavyadhi, *Sarvangavata* — a condition affecting the entire body with progressive weakness, sensory loss, and functional impairment — represents the closest Ayurvedic correlate to GBS based on shared clinical features.[8]

Classical Ayurvedic descriptions across the 28th chapter of *Charaka Samhita Chikitsa Sthana* and the 4th chapter of *Sushruta Samhita Chikitsa Sthana* articulate not only the signs and symptoms of Sarvangavata but also provide detailed therapeutic protocols based on Panchakarma and Rasayana (rejuvenation) therapies.

Panchakarma, the quintessential therapeutic system of Ayurveda, comprises five principal bio-purificatory procedures — *Vamana* (emesis), *Virechana* (purgation), *Basti* (medicated enema), *Nasya* (nasal administration), and *Raktamokshana* (bloodletting) — along with preparatory procedures of *Snehana* (oleation) and *Svedana* (sudation), and post-therapeutic dietary and lifestyle measures.[9] In the management of GBS, Panchakarma therapies specifically targeting Vata pacification, Avarana release, Dhatu nourishment, and neuro-muscular restoration have shown promising results in multiple published case reports and clinical studies, offering relief from paralysis, sensory dysfunction, and autonomic instability.[10] This review synthesizes the Ayurvedic understanding of GBS comprehensively, examining its Nidana (aetiology), Samprapti (pathogenesis), Dhatu involvement.

AIMS AND OBJECTIVES

The primary aim of this review article is to consolidate and critically analyse the Ayurvedic conceptualization of Guillain-Barre Syndrome with reference to its classical correlation as Sarvangavata, to elucidate the Samprapti Ghataka and Dhatu involvement in disease pathogenesis, and to present a systematic overview of Panchakarma-based management strategies including Purvakarma, Pradhankarma, and Paschatkarma as documented in classical Ayurvedic texts and contemporary clinical literature. Additionally, the article aims to correlate modern pathophysiological understanding with Ayurvedic principles, thereby contributing to an integrative therapeutic framework.

NIDANA (AETIOLOGY)

In Ayurveda, the aetiology of any disease is understood through the framework of *Hetu* (causative factors). The causative factors for *Vatavyadhi* as described in classical texts broadly fall into categories of *Aharaja Nidana* (dietary factors), *Viharaja Nidana* (lifestyle and behavioural factors), and *Manasika Nidana* (psychological factors). Dietary causes include excessive consumption of dry, cold, bitter, astringent, and pungent foods (*Ruksha, Sheeta, Tikta, Kashaya, Katu Ahara*) that aggravate Vata dosha and dry out the body tissues. Irregular food habits, excessive fasting, and consumption of foods incompatible with one's constitution further disturb the homeostasis of doshas. Similarly, exposure to excessive cold, overexertion, suppression of natural urges (*Vegavidharan*), prolonged wakefulness, excessive physical activity, and trauma are among the principal viharaja causative factors.

In the context of GBS, the correlation with Ayurvedic Nidana is particularly illuminating. The post-infectious trigger of GBS — most commonly a gastrointestinal or respiratory infection — aligns with the concept of *Agnimandya* (diminished digestive fire) followed by *Ama* production (endotoxins generated by incomplete metabolic transformation). This Ama, when it enters systemic circulation through the *Rasavaha Srotas*

(channels carrying nutritive plasma), lodges in the *Majjavaha Srotas* (channels governing nervous tissue), precipitating an inflammatory cascade that corresponds to the autoimmune demyelinating process in GBS. Furthermore, psychological stress and grief (*Shoka*), fear (*Bhaya*), and anxiety (*Chinta*) are recognized as Vata-aggravating mental factors in Ayurveda, and these are frequently noted as precipitating factors in immune dysregulation leading to GBS.

From a modern perspective, GBS is triggered by preceding infections with organisms including Campylobacter jejuni (most frequently identified), cytomegalovirus, Epstein-Barr virus, Mycoplasma pneumoniae, and more recently, SARS-CoV-2. The mechanism of molecular mimicry — wherein microbial surface epitopes structurally resemble peripheral nerve gangliosides such as GM1, GM1b, GD1a, and GalNAc-GD1a — leads the immune system to inadvertently attack peripheral nerve tissue. This process, when viewed through the Ayurvedic lens, can be understood as a profound disruption in Ojas (vital essence and immune competence), Ama accumulation at the Srotomukha (openings of the neural channels), and consequent Vata vitiation affecting the Majja Dhatu (nerve tissue).[11]

SIGN AND SYMPTOMS OF GBS AND THEIR AYURVEDIC CORRELATION

GBS presents with a constellation of neurological features that evolve rapidly over days to weeks. The cardinal features include bilateral symmetric progressive ascending limb weakness beginning in the lower extremities and ascending toward the upper limbs and respiratory muscles; loss of deep tendon reflexes (areflexia); sensory disturbances including paresthesia manifesting as pins and needles sensations in fingers, toes, ankles, and wrists; severe neuropathic pain that may be aching, shooting, or cramp-like in character and is typically worse at night; autonomic dysfunction including tachycardia or bradycardia, blood pressure fluctuations, urinary incontinence or retention, and sweating abnormalities; cranial nerve involvement in certain variants leading to diplopia (double vision), inability to move the eyes, facial weakness, difficulty swallowing, and difficulty speaking; and in severe cases, respiratory muscle paralysis necessitating mechanical ventilation.

When these clinical features are mapped against classical Ayurvedic descriptions, remarkable correspondences emerge. The Charaka Samhita, in its 28th chapter on Chikitsa Sthana, describes the manifestations of Sarvangavata as loss of power and function in all limbs (*Chestanivritti*), pain in affected areas (*Ruja, Toda, Shula*), and involvement of the entire body (*Ekangam Sarvangam Sarvadhehajam*). The progressive ascending motor weakness in GBS beginning in lower limbs and spreading to upper extremities corresponds to the description of *Kuryacchestanivrittim* — progressive curtailment of movement — in Charaka Samhita Chikitsa Sthana 28. Urinary incontinence observed in GBS aligns with Apana Vata abnormality as described in the same reference. The textual reference *"Hatvaekam Marutah Paksham Dakshinam Vamam Eva Va"* from the Charaka Samhita indicates that Vata can affect one part or the entire body in its progressive involvement, directly paralleling the clinical observation that GBS can initially affect a single limb before progressing to quadriplegia. The involvement of *Sira* and *Snayu* (vessels and ligaments/nerves) described in the context of Sarvangavata with features of contracture deformity (*Bahyabhyantaramayamam*) and subsequent pain and loss of sensation (*Suptata*) [Cha.Chi.28/35-36] mirrors the peripheral nerve demyelination and axonal damage seen in GBS leading to sensorimotor deficits and eventual contractures.[12]

The Sushruta Samhita's description of *Mamsamedogata Vata* with features of bodily heaviness (*Gurwanga*), severe pricking pain as if beaten with a rod (*Tudyate Atyartha Dandamushtihatam*), and severe fatigue (*Saruk Shramitam*) [Cha.Chi.28/32] corresponds to the deep muscular pain, chest wall weakness causing respiratory difficulty, and profound fatigue observed in GBS patients. Similarly, the classical description of *Majjasthigata Vata* with features of breaking type pain in bones and joints (*Bhedoasthiparvanam*), loss of muscle and strength (*Mamsabalakshaya*), and constant pain (*Santata Ruk*) [Cha.Chi.28/33] further reinforces the correspondence with GBS symptomatology.[13]

SAMPRAPTI (PATHOGENESIS) AND SAMPRAPTI GHATAKA

Modern Pathogenesis of GBS

The modern pathophysiological understanding of GBS involves two pivotal stages: initiation by an immunological trigger and subsequent immune-mediated disruption of axons and myelin. Following a prodromal infection, activated CD4+ T lymphocytes, macrophages, and autoantibodies target components of the peripheral nervous system. In AIDP — the most common form — immune reactions directed against epitopes on Schwann cells or the myelin sheath result in segmental demyelination, slowing nerve conduction velocity and disrupting saltatory conduction. In AMAN and AMSAN variants, antibodies targeting gangliosides on the motor axolemma cause axonal degeneration, resulting in more severe and sometimes irreversible motor deficits. The disruption of the blood-nerve barrier facilitates lymphocytic infiltration around endoneurial vessels, amplifying the inflammatory cascade. Electrophysiological studies — including nerve conduction velocity studies — reveal characteristic findings of reduced conduction velocity, prolonged distal latencies, conduction block, and reduced or absent F waves, collectively confirming the degree of demyelination or axonal loss.[14]

Ayurvedic Samprapti of GBS (Sarvangavata)

The Ayurvedic understanding of disease pathogenesis (Samprapti) traces the sequential steps of dosha vitiation,

tissue injury, and channel obstruction leading to disease manifestation. In the context of GBS understood as Sarvangavata, the Samprapti unfolds as follows: The initial trigger — typically a post-infectious state — leads to impairment of *Agni* (digestive and metabolic fire), particularly *Jatharagni* (central digestive fire) and subsequent *Dhatwagni* (tissue-level metabolic fire). This impairment generates *Ama* — incompletely digested metabolic by-products that are sticky, heavy, and channel-obstructing in nature. Ama accumulates in the *Pakwashaya* (large intestine, the seat of Vata) and begins its systemic spread through the Srotas.

Concomitantly, the underlying *Kapha* and *Pitta* doshas, aggravated through their respective Nidanas — by the inflammatory response (Pitta) and by the heavy, obstructive properties of Ama (Kapha) — proceed to obstruct the free movement of Vata dosha, particularly *Vyana Vata* (the subtype of Vata governing peripheral circulation, sensation, and motor functions throughout the body). This phenomenon of obstruction of Vata by other doshas is termed *Avarana* in classical Ayurveda and is considered the key pathomechanism in complex neuromuscular disorders like GBS.15 The obstructed Vyana Vata, unable to perform its normal function of coordinating movement and maintaining tissue nourishment, causes progressive neuromuscular dysfunction. Simultaneously, the vitiated doshas travel from the *Amashaya* (stomach/upper gastrointestinal tract) via the Rasavaha Srotas, reach the peripheral nerves (the Vyakti Sthana, or site of manifestation), and produce the clinical disease.

Samprapti Ghataka (Components of Pathogenesis)

Dosha: The primary dosha involved is Vata (specifically Vyana Vata in its Avrita — obstructed — state), with Pitta and Kapha functioning as Avaraka (obstructing) doshas. Pitta aggravation is responsible for the inflammatory and demyelinating component of GBS (corresponding to the immune-mediated neural inflammation), manifesting as burning sensation (*Daha*), fever preceding the neurological symptoms, and neuropathic pain [Su.Ni. 38: *Vyane Pittaavrite Daho Gatravikshepan Klamah*]. Kapha obstruction of Vyana Vata leads to heaviness of limbs (*Gurunisarvagatrani*), stiffness in joints (*Stambhanam*), and impaired movement (*Cheshtastambha*) [Cha.Chi.28/39], corresponding to the motor weakness and areflexia characteristic of GBS.[16]

Dushya (Tissues Affected): The primary tissues (Dhatus) involved in GBS-Sarvangavata are Rasa Dhatu (plasma/lymph), Mamsa Dhatu (muscle tissue), and Majja Dhatu (nervous tissue/bone marrow). Rasa Dhatu vitiation corresponds to the systemic immune activation and production of circulating autoantibodies. Mamsa Dhatu involvement manifests as progressive muscle wasting, weakness, and eventual atrophy. Majja Dhatu — which encompasses the nervous system, including peripheral nerves in Ayurvedic understanding — is the principal site of pathological change, directly correlating with the peripheral nerve demyelination and axonal damage central to GBS pathophysiology.[17]

Adhisthana (Site of Disease): The Adhisthana, or principal seat of the disease, is Sarvanga — the entire body. This corresponds to the widespread, bilateral, symmetrical distribution of neurological deficits in GBS involving all four limbs, trunk musculature, cranial nerves, and autonomic nervous system.

Srotas (Channels Involved): The primary Srotas involved are Mamsavaha Srotas (channels nourishing muscular tissue), Majjavaha Srotas (channels of the nervous system), and Rasavaha Srotas (channels of nutritive plasma and immune factors). The obstruction and contamination of these Srotas by Ama and vitiated doshas leads to progressive tissue damage, corresponding to the progressive neurological deterioration seen in GBS. Sira (blood vessels and nerves) and Snayu (ligaments and nerve sheaths) are also structurally affected, explaining the neuropathic pain, sensory deficits, and eventual contractures observed in chronic GBS.[18]

Agni (Metabolic Fire): Dhatwagni Mandya — specifically the impairment of Majja Dhatwagni (metabolic fire at the nervous tissue level) — is central to the pathogenesis. Impaired Majja Dhatwagni prevents proper nourishment and maintenance of nervous tissue, leading to progressive demyelination and neuronal dysfunction analogous to the pathological processes in GBS.

Ama: Agnimandya-janya Ama (endogenous toxins generated by impaired digestive and metabolic fire) represents the Ayurvedic equivalent of the immune complexes, autoantibodies, and inflammatory cytokines that drive the pathological process in GBS. Ama obstructs the Srotas, creates an inflammatory milieu in the Majjavaha Srotas, and precipitates the autoimmune attack on peripheral nerve tissue.

Udbhava Sthana (Origin): The Kostha (gastrointestinal tract), specifically the Pakwashaya (large intestine), serves as the Udbhava Sthana — the site of origin of the pathological process. This corresponds to the well-established clinical observation that the most common antecedent of GBS is gastrointestinal infection with Campylobacter jejuni.

Sanchara Sthana (Site of Transit): The vitiated doshas and Ama travel through the Rasavaha Srotas — the channels of nutritive plasma — to reach distant tissues. This corresponds to the hematogenous dissemination of autoantibodies and immune cells from their site of production to the peripheral nervous system in GBS.

Vyakti Sthana (Site of Manifestation): The peripheral nerves constitute the Vyakti Sthana — where the disease manifests clinically. The Majja Dhatu housed within the

peripheral nerve sheaths (Snayu) is the principal tissue undergoing pathological change, manifesting as the characteristic sensorimotor deficits and autonomic dysfunction of GBS.

Rogamarga (Disease Channel): The Bahya Rogamarga (external disease channel encompassing skin, muscles, and peripheral structures) combined with Madhyama Rogamarga (involving bones, joints, nerves, and vital organs) characterizes the disease pathway in GBS, explaining its complex multi-system involvement.

AVARANA AND DHATU INVOLVEMENT IN GBS

The concept of *Avarana* — obstruction of one dosha or dhatu by another — is critical to understanding the complex pathomechanism of GBS in Ayurvedic terms. In GBS, the primary Avarana is *Kaphavritta Vyana Vata* (Kapha obstructing Vyana Vata) and *Pittavritta Vyana Vata* (Pitta obstructing Vyana Vata). Classical texts describe Kaphavritta Vyana as producing heaviness of all body parts (*Gurunisarvagatrani*), stiffness at bony junctions (*Stambhanam Chasthi-parvanam*), and impaired movement (*Cheshtastambha*) [Cha.Chi.28/39]. These correspond precisely to the limb heaviness, joint stiffness, and progressive motor weakness hallmark of GBS. Pittavritta Vyana is described as causing burning sensation (*Daha*), limb flailing and weakness (*Gatravikshepana*), and fatigue (*Klama*) [Su.Ni. 38], corresponding to the neuropathic burning pain, uncoordinated muscle activity, and profound fatigue seen in GBS.[19]

At the Dhatu level, *Majja Dhatu Kshaya* (depletion of nervous tissue) is the most significant Dhatu involvement in GBS. This manifests as loss of myelin (the Ayurvedic equivalent of Snehansa — the unctuous component — of Majja Dhatu) and progressive axonal degeneration. The Acharya Charaka specifically states that conditions located in the Majja and Asthi (bones) should be treated with both internal and external oleation (*Bahyabhyantaratah Sneha*) [Cha.Chi.28/93], directly providing the rationale for the Snehana-based therapies central to GBS management in Ayurveda. *Mamsa Dhatu Kshaya* contributes to progressive muscle wasting and weakness, while *Rasa Dhatu Dushti* (vitiation of nutritive plasma) underpins the systemic immune dysregulation. The involvement of Sira (vessels/nerves) and Snayu (ligaments/nerve sheaths) as structural components adds to the clinical picture of sensory deficits, pain, and eventual contracture deformity observed in chronic GBS.[20]

TEXTUAL REFERENCES — CLASSICAL AYURVEDIC CORRELATIONS

The principal classical Ayurvedic texts containing detailed references relevant to GBS management include the Charaka Samhita Chikitsa Sthana 28th chapter on Vatavyadhi Chikitsa, Sushruta Samhita Chikitsa Sthana 4th chapter, Ashtanga Sangraha Chikitsa Sthana 23rd chapter, and Ashtanga Hridayam Chikitsa Sthana 21st chapter. These texts collectively describe the spectrum of Vatavyadhi manifestations including Sarvangavata, Pakshagata (hemiplegia), Ekangaroga (monoplegia), and various Avarana conditions, and provide systematic chikitsa (treatment) guidelines for each.

The correlation between GBS presentations and classical shloka (verse) descriptions is documented across multiple dhatu-gata vata conditions. The shloka *"Hatvaekam Marutah Paksham Dakshinam Vamam Eva Va"* from Charaka Samhita describes Vata affecting one side or all limbs, correlating with GBS which can begin in a single limb and spread to the entire body. The description *"Kuryacchestanivrittim"* (progressive cessation of movement) corresponds to the ascending motor weakness that is the hallmark of GBS. The presence of *"Ruja" (pain), "Toda" (pricking sensation), and "Shula" (stabbing pain)* in Sarvangavata corresponds to the severe neuropathic pain described in GBS. The shloka *"Ekangalogam Tam Vidyat Sarvangam Sarvadehajam"* from Charaka Samhita [Cha.Chi.28] specifically describes that when Vata affects a single part it is Ekangaroga and when it affects the entire body it is Sarvangaroga, precisely paralleling the GBS presentation that begins focally and progresses to affect the entire body including all four limbs and the respiratory musculature.[21]

Furthermore, the description of Siragata Vata from Charaka Samhita [Cha.Chi.28/36] with features of mild pain and swelling (*Mandaruksopha*), loss of pulsation in vessels (*Suptanihspandah*), twitching (*Spandate*), and emaciation (*Sushyati*) corresponds to the peripheral neuropathy with sensory loss, muscle fasciculations, and progressive muscle wasting seen in GBS. Siradusti causing pain and Suptata (loss of sensation) [Cha.Chi.28/36] precisely mirrors the sensory neuropathy — paresthesia and hypoesthesia — characteristic of GBS. The Snayugata Vata description [Cha.Chi.28/35] with Bahyabhyantaramayamam (extension and flexion deformities), Khalli (shooting pain in extremities), and Kubjatva (hunched posture) maps onto the later stages of GBS with contractures and deformities developing in inadequately managed cases.[22]

The Sushruta Samhita [Su.Ni. 1/58-62] describes Pakshagata and Sarvangavata in the context of aggravated Vata entering the Dhamanis (blood vessels/nerves) and producing inaction (*Akarmanya*) and loss of sensation (*Acetana*) in the affected parts, perfectly corresponding to the flaccid paralysis and sensory loss of GBS. The Ashtanga Hridayam [A.H.Ni.15/17-20] provides a detailed description of Apatantraka — a convulsive Vatavyadhi involving the Hridaya (heart), Siras (head), and Sankha (temporal regions) — some features of which, particularly autonomic dysregulation and cranial nerve involvement, find parallels in the autonomic dysfunction and Miller-Fisher variant of GBS.

PANCHAKARMA MANAGEMENT IN GBS

Panchakarma-based management of GBS follows a three-phase protocol: Purvakarma (preparatory procedures), Pradhankarma (principal therapeutic procedures), and Paschatkarma (post-therapeutic measures). This systematic approach addresses the disease at multiple levels — eliminating the Avaraka doshas, restoring Vata normalcy, nourishing depleted Dhatus, and rehabilitating neuromuscular function.

Purvakarma (Preparatory Procedures)

The preparatory phase is essential to make the body receptive to the principal Panchakarma procedures and to mobilize the pathogenic doshas from the tissues toward the gastrointestinal tract for elimination. Purvakarma in GBS consists principally of *Snehana* (oleation therapy) and *Svedana* (fomentation/sudation therapy). Snehana is administered both internally (*Abhyantara Snehana*) and externally (*Bahya Snehana*). Internal oleation involves the administration of medicated ghee preparations such as *Mahatiktaka Ghrita*, *Dhanwantaram Ghrita*, or *Ashwagandha Ghrita* in gradually increasing doses over several days. These preparations, rich in lipid-soluble bioactive compounds, penetrate deep into the tissues, lubricate the neural channels (Majjavaha Srotas), dissolve the adherent Ama, and facilitate its mobilization. External oleation involves full-body massage (*Abhyanga*) with medicated oils such as *Dhanwantaram Taila*, *Ksheerabala Taila*, *Mahanarayana Taila*, or *Bala Taila*, which have documented neurotropic, anti-inflammatory, and neuro-regenerative properties.[23]

Svedana (sudation) is administered following Snehana to further mobilize the vitiated doshas and open the Srotas. In GBS, mild forms of Svedana are preferred due to the debilitated state of the patient. *Parisheka* (continuous pouring of medicated warm decoctions or medicated milk over the body) using preparations such as *Dashamoola Kwatha* or *Ksheera Parisheka* (warm medicated milk) provides simultaneous oleation and sudation, making it ideal for patients with severe weakness. *Pindasweda* (fomentation using boluses of medicated materials — particularly Shashtikashali Pinda Sweda, utilizing boluses of a special rice variety cooked with Bala decoction and milk) provides deep sudation along with nourishment to the depleted Mamsa and Majja Dhatus, and has been specifically documented as effective in GBS management.[24] Classical texts specifically recommend that before principal therapies in Apatanaka and Vata-related conditions, the patient should be made Snigdha (well-oleated) and Svinna (well-fomented) [A.H.Chi.21/25].

Pradhankarma (Principal Therapeutic Procedures)

Following adequate Purvakarma, the principal Panchakarma procedures are administered. In GBS management, the key Pradhankarma procedures include *Basti*, *Nasya*, *Virechana*, and specialized local therapies.

Basti Karma (medicated enema therapy) is considered the most important therapeutic procedure in all Vatavyadhi and is specifically indicated in Sarvangavata and GBS management. Charaka Samhita [Cha.Chi.28] states that Basti is the principal treatment (*Ardhachikitsa* — half of all therapy) for Vatavyadhi. Two types of Basti are administered: *Kashaya Basti* (Niruha Basti — decoction enema using herbal decoctions of Dashamoola, Bala, Erandamula etc., combined with honey, salt, medicated oils, and ghee) and *Taila Basti/Anuvasana Basti* (unctuous enema using medicated oils such as Bala Taila, Dhanwantaram Taila, or Ksheerabala Taila). These are administered in a specific sequence known as *Yoga Basti* or *Kala Basti* — alternating cycles of Niruha and Anuvasana Basti — to achieve comprehensive Vata pacification, tissue nourishment, and channel cleansing. Classical texts [Su.Chi.5/19] specifically describe the sequence of Snehana, Svedana, mild Shodhana (purification), followed by Anuvasana Basti and Asthapana Basti for Pakshagata, with Mastishkya Shirobasti for cranial involvement, Abhyanga with Anu Taila, and Upanaha (poultice), to be continued for three to four months.[25]

Nasya (nasal administration of medicated preparations) addresses the disease through the Shirah (head) and Siras (cranial vessels), influencing the central nervous system directly. Tiksna Nasya (using sharp/penetrating nasal preparations) is indicated to clear the Kapha Avarana from the Srotomukha (channel openings) and restore normal Vata function. The classical reference [A.H.Chi.21/25-27] specifically recommends Tiksna Nasya for Srotovishodhana (channel purification) in Apatanaka, the Vatavyadhi most closely resembling acute GBS with autonomic involvement. *Mastishkya Shirobasti* — a specialized procedure involving oil pooling at the cranial vertex — specifically addresses the central nervous system component of GBS and is described in Sushruta Samhita [Su.Chi.5/19] as part of the treatment protocol for Pakshagata. Shirotala (application of medicated paste over the scalp) using preparations containing Bala, Amalaki, Musta, and Guduchi in appropriate carriers provides sustained neuroprotective benefits.[26]

Virechana (therapeutic purgation) is administered specifically as *Mridu Virechana* (mild purgation) in GBS to eliminate the Kapha-Pitta Avarana . Charaka Samhita [Cha.Chi.28/100] specifically states: *"Svedanam Snehayuktam Pakshaghate Virechanam"* — in Pakshagata and Sarvangavata, Svedana combined with Sneha-based Virechana should be administered. Mild purgatives such as Eranda Taila (castor oil) are preferred, as they simultaneously pacify Vata while eliminating the obstructing doshas.[27]

Specialized local procedures play a complementary but significant role. *Sarwanga Abhyanga* (full body therapeutic massage) with Vatahara medicated oils pacifies Vata, improves peripheral circulation, reduces

neuropathic pain, and prevents muscle wasting. *Upanaha* (medicated poultice application) with Vata-pacifying formulations reduces local pain and stiffness. *Padabhyanga* (foot massage) specifically targeting Talahridaya Marma (vital point at the sole) improves sensory perception in the lower extremities.[28]

Paschatkarma (Post-Therapeutic Measures)

Following the principal Panchakarma procedures, the Paschatkarma phase focuses on Dhatu nourishment, functional rehabilitation, and prevention of recurrence. This phase incorporates *Samsarjana Karma* — a graduated dietary regimen beginning with light, easily digestible foods and progressively transitioning to a regular nourishing diet. Rasayana therapy (rejuvenative medicines) forms a crucial component of Paschatkarma in GBS, with formulations such as *Ashwagandha Rasayana*, *Balaashwagandha Taila* (internally), and *Chyavanaprasha* providing adaptogenic, neuroprotective, and neurotrophic benefits. *Balaashwagandha Arista* helps in Vata alleviation, improves muscular strength, and nourishes all body tissues, making it particularly valuable in the recovery phase of GBS.[29]

Oral medications in the Paschatkarma phase include classical Ayurvedic formulations such as *Maharasnadi Kwatha* (for Vatavyadhi and muscular rehabilitation), *Dashamoolarishta* (for general Vata pacification and strength restoration), *Yogaraja Guggulu* or *Mahayogaraja Guggulu* (for deep tissue Vatahara action and anti-inflammatory effects), *Ksheerabala Capsule* or *Ksheerabala 101 Avartita Taila* for its potent neuroprotective and neuromuscular regenerative properties, and *Saraswatarishta* for cognitive and neurological restoration. The Pathya (wholesome diet) as described in Yoga Ratnakara [Yo.Ra.25/414-417] includes Kulattha (horse gram), Masha (black gram), Godhuma (wheat), Raktashali (red rice), Patola, Shigru (drumstick), Vartaka (brinjal), Dadima (pomegranate), Ghrita (ghee), Dugdha (milk), Lasuna (garlic), Draksha (raisins), and lean meats from Jangala (arid region) animals — all of which support Vata pacification and tissue nourishment essential for recovery.

Apathya (unwholesome diet and lifestyle) to be strictly avoided in GBS management includes excessive physical exertion, sleeping on uncomfortable surfaces, excessive psychological stress (Chinta), fasting (Anashana), day sleep, exposure to cold and wind, and consumption of dry, cold, light, bitter, and astringent foods that further aggravate Vata. These recommendations align with modern lifestyle modifications recommended for GBS patients, including avoiding physical overexertion during recovery, maintaining adequate nutrition, and managing psychological stress that can impair immune recovery.[30]

DISCUSSION

The present review establishes a compelling convergence between the modern pathophysiological understanding of Guillain-Barré Syndrome (GBS) and its classical Ayurvedic conceptualization as Sarvangavata — a systemic Vatavyadhi characterized by progressive ascending motor weakness, sensory loss, areflexia, and autonomic dysfunction. This convergence is not superficial but extends deep into the mechanisms of disease initiation, tissue-level pathology, clinical manifestation, and therapeutic response. When the Samprapti of Sarvangavata is compared systematically with the modern immunopathology of GBS, a point-by-point correspondence emerges: post-infectious Agnimandya mirrors the antecedent gastrointestinal or respiratory infection that initiates molecular mimicry in GBS; Ama production parallels the generation of cross-reactive autoantibodies against peripheral nerve gangliosides; and the progressive obstruction of Vyana Vata by Kapha and Pitta doshas corresponds precisely to the immune-mediated demyelination and axonal degeneration that disrupts saltatory nerve conduction and neuromuscular transmission. This framework, articulated in the Charaka Samhita Chikitsa Sthana 28th chapter and Sushruta Samhita Chikitsa Sthana 4th chapter centuries before the germ theory of disease, reflects a sophisticated empirical understanding of neuro-immunological dysfunction that deserves rigorous contemporary study.

In the acute phase, Pittavritta Vyana Vata — obstruction of the peripheral motor-sensory Vata subtype by inflammatory Pitta — corresponds to the active immune assault on myelin and axons, manifesting clinically as the rapid ascending paralysis, neuropathic burning pain, and autonomic instability characteristic of early GBS. As the disease transitions to its plateau and recovery phase, Kaphavritta Vyana Vata becomes predominant, generating the heaviness (Gurutvam), stiffness (Stambha), and persistent motor deficit that characterize the subacute phase and that are most amenable to the deeply nourishing, channel-opening therapies of Panchakarma. This Avarana-based differentiation provides Ayurvedic clinicians a dynamic, stage-specific framework for therapy selection that parallels the modern practice of phase-specific GBS management — immunotherapy in the acute phase followed by rehabilitation in the recovery phase — while adding the dimension of tissue nourishment and Srotas restoration absent from conventional protocols.

The Dhatu involvement in GBS warrants particular analytical attention. Majja Dhatu Kshaya — depletion of the nervous tissue component — is the primary and most critical Dhatu pathology in GBS, directly corresponding to the peripheral nerve demyelination and axonal loss that underlie its clinical deficits. Classical Ayurveda specifically positions Majja Dhatu as encompassing all medullary and neural structures, and its Kshaya manifests as loss of the Snehansa (unctuous lipid-rich component) that maintains nerve sheath integrity — an elegant functional parallel to the loss of myelin, whose high lipid content enables rapid saltatory conduction. The involvement of Rasa Dhatu, as the medium of systemic immune activation and autoantibody

circulation, connects the gut-based Ama (corresponding to post-infectious immune dysregulation) to the peripheral nerve as the Vyakti Sthana of disease. Mamsa Dhatu Kshaya, manifesting progressively as the disease evolves, explains the muscle wasting and weakness that deepen during the plateau phase and that respond most dramatically to the protein-rich, nourishing diet and Rasayana therapies prescribed during Paschatkarma. Critically, the Ayurvedic recognition that Majja and Asthi Dhatu disorders require both internal and external Snehana — as specifically stated by Charaka — provides the classical rationale for the administration of lipid-based Basti preparations that penetrate the neural tissue, supplemented by Abhyanga with medicated oils, in GBS management.

Among the Panchakarma procedures, Basti Karma occupies a position of primacy in GBS management that is fully justified by both classical textual authority and emerging biomedical evidence. The classical designation of Basti as Ardhachikitsa — half of all therapy — Ayurveda's recognition of the large intestine (Pakwashaya) as the primary seat of Vata. In GBS, where Campylobacter jejuni enteritis is the single most common antecedent event, the gut-nerve axis assumes particular significance: post-infectious enteric immune activation drives the systemic autoimmune response that attacks peripheral nerves. Basti therapy, by directly influencing the enteric nervous system through the colonic mucosa, may modulate this gut-derived immune dysregulation, suppress residual inflammatory signalling via the Rasavaha Srotas, and restore the homeostatic Vata balance in the Pakwashaya that is foundational to systemic Vata regulation. The Anuvasana Basti formulations employing Bala Taila, Ksheerabala Taila, and Dhanwantaram Taila deliver lipid-soluble neuroprotective bioactives — particularly the alkaloids of Sida cordifolia and the withanolides of Withania somnifera — via enteric absorption, supplementing the topical delivery achieved through Abhyanga. The alternating Yoga Basti protocol of Niruha and Anuvasana Basti, as described in Sushruta Samhita for Pakshagata, achieves both Shodhana (elimination of Avarana-causing doshas) and Brimhana (tissue nourishment), addressing the two-phase therapeutic imperative in GBS: removing the obstructing pathology and rebuilding the depleted neural tissue.

The pharmacological basis of Panchakarma therapies in GBS is increasingly supported by modern phytochemical and neurobiological research. Shashtikashali Pinda Sweda, which employs a special variety of rice cooked with Bala decoction in milk, provides simultaneous thermal stimulation, mechanical pressure, and lipid-mediated nutrient delivery to the peripheral musculature and nerves. The thermal component improves peripheral microvascular circulation, enhancing oxygen and nutrient delivery to ischaemic nerve sheaths; the mechanical component through gentle massage stimulates neurotrophic signalling analogous to the sensory feedback employed in modern physiotherapy; and the milk-based nutrient medium provides essential amino acids, growth factors, and lipids necessary for myelin resynthesis. Ksheerabala Taila, prepared from Bala in sesame oil and milk, contains ephedrine alkaloids with documented neuromuscular transmission-enhancing properties, alongside sesame lignans (sesamol, sesaminol) that exert potent antioxidant and anti-neuroinflammatory effects, suppressing the reactive oxygen species that amplify nerve damage in the acute phase of GBS. Ashwagandha preparations, central to the Rasayana phase, have been shown to promote nerve growth factor (NGF) synthesis, enhance myelinogenesis, and reduce pro-inflammatory cytokines including TNF-α and IL-6 — cytokines that are elevated in GBS and contribute to Schwann cell injury. Mahatiktaka Ghrita, employed in internal oleation during Purvakarma, delivers bitter glycosides and terpene compounds that modulate immune cell activation and have demonstrated anti-complement activity relevant to the complement-mediated nerve damage seen in GBS. The cumulative pharmacological profile of these classical formulations thus addresses GBS pathology at multiple molecular targets simultaneously — an advantage over the single-mechanism approach of IVIg or plasmapheresis.

The three-phase Panchakarma framework — Purvakarma, Pradhankarma, and Paschatkarma — demonstrates a structural and functional correspondence with the phases of modern GBS management that is both intellectually striking and clinically instructive. Purvakarma, through Snehana and Svedana, accomplishes the dual physiological imperatives of tissue preparation and dosha mobilization that parallel the supportive care phase of modern GBS management: respiratory monitoring, autonomic stabilization, prevention of secondary complications, and physical therapy to prevent contractures prior to active recovery. The graduated Abhyanga protocols during Purvakarma simultaneously serve as early physiotherapy, stimulating peripheral sensory receptors and maintaining muscle tone during the period of maximum weakness — a function recognized but often inadequately implemented in resource-limited modern GBS care. Pradhankarma, encompassing Basti, Nasya, and Virechana, corresponds to the phase of active immunomodulatory therapy in modern GBS, addressing the Avarana (autoimmune obstruction) directly while preventing further Dhatu Kshaya. Paschatkarma, with its Rasayana-centered rehabilitation, addresses the dimension of functional recovery and residual disability prevention that modern GBS management, focused primarily on acute immunotherapy, often inadequately addresses. Ayurvedic Rasayana therapy in the recovery phase of GBS significantly improved functional outcomes, aligning with the increasing recognition in modern neurology that targeted neurotrophic and neuroprotective interventions in the recovery phase can substantially reduce long-term disability in GBS survivors.

CONCLUSION

Guillain-Barré Syndrome, though a modern diagnostic entity defined by contemporary neuropathology, finds its conceptual roots firmly embedded in the classical Ayurvedic nosology of Sarvangavata — a Vatavyadhi of the entire body characterized by progressive weakness, sensory loss, and functional impairment. The Samprapti of GBS in Ayurvedic terms involves post-infectious Agnimandya generating Ama, subsequent Kaphavritta and Pittavritta obstruction of Vyana Vata, progressive Majja Dhatu Kshaya, and manifestation of disease in the peripheral nervous system through compromised Majjavaha and Mamsavaha Srotas. This pathomechanism elegantly parallels the modern understanding of molecular mimicry-driven autoimmune demyelination central to GBS pathophysiology.

The Panchakarma management framework — encompassing preparatory Snehana and Svedana, principal procedures of Basti (particularly Anuvasana and Niruha Basti), Nasya, Virechana, and specialized local therapies (Greeva Basti, Shirobasti, Shashtikashali Pinda Sweda, Parisheka, Abhyanga, and Upanaha), followed by Rasayana-based Paschatkarma — addresses GBS at multiple levels: eliminating Avarana, restoring Vata normalcy, nourishing depleted Dhatus, regenerating nervous tissue, and rehabilitating neuromuscular function.

This review article establishes that Ayurveda, with its sophisticated understanding of neural disorders expressed through the framework of Vatavyadhi and Sarvangavata, and its rich therapeutic armamentarium of Panchakarma and Rasayana, offers a scientifically coherent, clinically effective, and economically accessible framework for GBS management. Integrating Ayurvedic Panchakarma with modern rehabilitative care holds significant promise for improving patient outcomes in GBS, and systematic clinical research is warranted to generate robust evidence for this integrative therapeutic paradigm.

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