



REVIEW ARTICLE

A Scoping Review on Guillain -Barré Syndrome and its Management - An Ayurvedic Perspective

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Abstract

Guillain-Barré Syndrome (GBS) is a serious neurological condition that involves the immune system attacking the peripheral nerves, leading to muscle weakness, paralysis, and sensory disturbances. It is often preceded by an infection which triggers the immune response that mistakenly targets nerve tissues, leading to damage through either demyelination or axonal degeneration. The treatment for GBS involves intravenous immunoglobulin or plasma exchange. These treatments are often effective when administered early in the course of the disease, especially in individuals with rapidly progressing symptoms. As immunoglobulin treatments are expensive, cost effectiveness of the Ayurvedic treatment seems promising. As per Ayurveda, GBS is conceptualized as a condition related to *Sarvangavata* (a form of *Vata dosha* disturbance affecting the entire body). Guillain-Barré Syndrome can be managed through Ayurvedic interventions based on the principles of *Vatavyadhi Chikitsa*, which include therapies such as *Abhyanga* (oleation therapy), *Swedana* (fomentation), *Parisheka* (douching with medicated decoction), *Pinda sweda* (fomentation with poultices), *Kashaya vasthi* (decoction enema), *Anuvasana vasthi* (transrectal administration of medicated oil), and *Shirovasthi* (therapeutic retention of medicated oil over the scalp) etc according to condition of the patient and disease. The Panchakarma therapies, along with oral administration of Ayurvedic medicines, offer symptom relief, minimal side effects, and significant improvement in the patient's quality of life. This article is a comprehensive review of various interventions used in managing Guillain-Barré Syndrome (GBS) compiled from various case studies published in different articles, encompassing internal medications, external therapies, and Panchakarma treatments in Ayurveda.

Introduction

Guillain-Barré Syndrome (GBS) is one of the most prevalent severe acute paralytic neuropathy. It is a heterogenous illness that progresses quickly. GBS is often non-relapsing and has a monophasic post-infection course. About 20-30% of individuals may be associated with potentially fatal respiratory failures. The annual prevalence is 2.7 per one million.¹ Its prevalence is more in men than women and has seasonal fluctuations also.

In most cases, GBS is preceded by an infection that triggers immune stimulation, which causes a molecular mimicry between microbial and nerve antigens, resulting in an abnormal autoimmune response that targets peripheral nerves and their spinal roots.² Clinical manifestations usually start with a rapidly developing flexic motor paralysis, with or without sensory disturbances, one to two weeks after immune stimulation. Usually, weakness is ascending paralysis, which develops over hours to a few days, with lower limbs more frequently affected than upper limbs. It may involve the cranial nerves. Respiratory failure, autonomic disruption, and tingling dysesthesias are other symptoms. Peak presentations occur between two to four weeks.³ Acute inflammatory demyelinating polyneuropathy and acute motor axonal neuropathy are the two main manifestations of GBS, depending on whether the disease affects the myelin sheath or the nerve axon respectively.

A close observation and supportive care are necessary for all GBS patients. It has been demonstrated that early initiation of plasma exchange or intravenous immunoglobulins is advantageous, particularly in patients whose condition is rapidly worsening. Despite these treatments, patients experience a protracted course of the disease, pain, exhaustion, extreme weakness, and a partial recovery. Despite the advances in treatment strategies, the mortality rate in GBS is about 4-7%.⁴ As per Ayurveda, this condition can be correlated with *Sarvangavata vyadhi* (*vata* disorder affecting all parts of the body).⁵ *Sarvangavata* can affect one or more limbs or the entire body and manifests as severe aching and pricking pains, speech derangement, and motor deficiencies. Treatment of *sarvangavata* depends on pathological state of *vata dosha*. Ayurveda offers a cost-effective treatment approach with minimal risk of side effects, contributing to an enhanced quality of life.

Material And Methods

For this scoping review, relevant articles were selected from PubMed, Google Scholar using the searching option using keywords Guillain-Barré Syndrome, Ayurveda. Then, a comprehensive review of therapeutic interventions for Guillain-Barré Syndrome (GBS) was conducted, aggregating data from different case studies. The compiled interventions encompassed internal medications, external therapies, and panchakarma treatments, providing a holistic understanding of the treatment modalities employed in managing GBS.

A review on Guillain-Barré Syndrome

Guillain-Barré Syndrome is an autoimmune polyradiculopathy that is acute, often severe, and fulminant. It is a rare disorder which makes the immune system target the peripheral nerve system.⁶ Usually, an infection that triggers immunological activation comes before it. This results in an abnormal

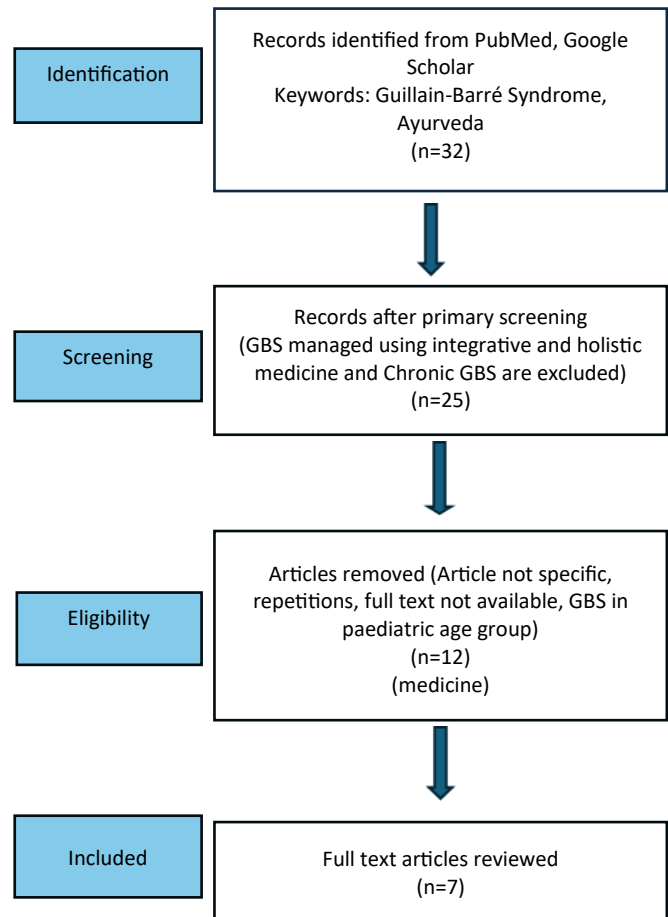


Fig. 1. Flow chart showing the review process

immunological reaction that targets peripheral nerves and their spinal roots by causing molecular mimicry between bacteria and nerve antigens.⁷ Many infections can trigger GBS. Commonly implicated infections are *Campylobacter jejuni* infection, cytomegalovirus, Epstein-Barr virus, and human immunodeficiency virus (HIV).⁸ Clinical signs start with rapidly developing flexic motor paralysis, with or without sensory disruption, 1-2 weeks after immunological stimulations. Typically, weakness is ascending, paralysis evolves over hour to a few days. Lower limb affliction is more prevalent than upper limb affliction. Additional symptoms that may be related to the cranial nerves include tingling, dysesthesias, autonomic disruption, and respiratory failure; these symptoms often peak between 2-4 weeks. Main phenotype of GBS are Acute inflammatory demyelinating polyneuropathy (AIDP) and Acute motor axonal neuropathy (AMAN) based on pathology involved in myelin sheath or nerve axon respectively. Acute motor-sensory axonal neuropathy (AMSAN) and Miller Fisher syndrome (MFS) are the other axonal variants of GBS. Nerve conduction studies (NCS) and electromyography (EMG) are used to confirm the diagnosis and also to know the type of GBS.⁹ Other investigations include CSF analysis and testing of antibodies. Even while plasma exchange and intravenous immunoglobulins are helpful, they have been linked to a lengthy course of the disease, significant weakness, discomfort, weakness, and an incomplete recovery.¹ Also, high expense of these treatments is another barrier,

particularly in developing and underdeveloped nations. Autonomic dysfunctions, pulmonary problems, ventilatory insufficiency, and decline in overall health are the main causes of death. *Sarvanga vatavyadhi* is a clinical disease mentioned in Ayurveda which symptomatically relates with GBS. *Sarvangavata* can affect one limb or the entire body and manifest as intense aching and pricking pains, speech impairment, and motor deficiencies etc.

Results

Ayurvedic treatments has found to be effective in the management of Guillain-Barré Syndrome (GBS). The treatment regimen adopted is given in table no:1 and table no: 2.

Discussion

In Guillain-Barré Syndrome (GBS), there is an ascending paralysis characterized by weakness beginning in the feet and hands, gradually migrating toward the trunk. From an Ayurvedic perspective, GBS is diagnosed as *Sarvangavata vyadhi*, a disorder caused by the vitiation of *vata* affecting all parts of the body, as it aligns with the symptoms and progression observed in GBS like pricking pain, stiffness, tingling sensation etc.

It is understood that *Vata* is the primary dosha responsible for governing the nervous system. The manifestation of *Vata vyadhi* (disorders of *Vata*) can be classified into two types: *Upastambhita* (obstructed) and *Nirupastambhita* (non-obstructed). If symptoms associated with *Kaphavruta Vyana* are present, such as *Vedana* (pain),

Table 1. Internal medications given

Sl .no	Medicines	Dose	Frequency	Duration
1.	<i>Chitrakadivati</i>	500 mg	bd after food	15 days
2.	<i>Vishmushtivati</i>	500 mg	bd with lukewarm water	"
3.	<i>Balaashwagandha arista</i>	20 ml	bd with lukewarm water after food	"
4.	Cap Palsineuron	-	twice daily	-
5.	Tab <i>Ekanaveera Rasa</i>	-	"	-
6.	Tab <i>Vishatinduka Vati</i>	-	"	-
7.	<i>Dhanadanayadi Kashaya</i>	-	thrice daily	-
8.	<i>Mashabaladi Kashaya</i>	-	"	-
9.	<i>Brihatvatachintamani kalpa</i>	-	twice daily	-
10.	<i>Gardabha paya</i>	100 ml	empty stomach in the morning, once in a day	-
11.	<i>Brihat Chagalyadi Ghrita</i>	-	-	6 days

Table. 2 *Shodhana* and other external therapies

Sl .no	Procedure	Medicines used	Duration
1.	<i>Udwartana</i>	<i>Kolakulathadi Choorna</i>	7 days
2.	<i>Sarvanga abhyanga</i>	<i>Kottamchukkadi taila /Narayana taila/bala taila</i>	3 days
3.	<i>Sarvanga bashpa swedana /nadi swedana</i>	<i>Dashamoola Kwatham</i>	7 days
4.	<i>Virechana</i>	<i>Trivrit lehyam-60 g and triphala kwatham-100 ml</i>	1 day
5.	<i>Snigdha choorna pinda sweda</i>	<i>Kolakulathadi Churna and Dhanwantaram taila</i>	7 days
6.	<i>Shastika shali pinda sweda</i>	<i>Shastika shali, Bala, satavari, aswagandha, milk</i>	7 days
7.	<i>Shirovasthi</i>	<i>Ksirabala tailam</i>	7 days
8.	<i>Nasya</i>	<i>Kshirabala tailam 101 Avarti (20drops)</i>	7 days
9.	<i>Shirothalam</i>	<i>Balamoola, amalaki, musta, guduchi powder and karpasasthyadi taila</i> made into paste and kept over vertex of the patient for 2 hours	7 days
10.	<i>Vasthi</i>	<i>Niruha vasthi(decoction enema)-Erandamooladi vasthi / musta, guduci, dasamoola</i>	6 days
		<i>Anuvasana vasthi(oil enema)-Panchatikta Guggulu Ghrita /Kalyanaka ghrita / Brihat Chagalyadi Ghrita</i>	9 days
11.	<i>Pizhichil</i>	<i>Dhanwantaram taila</i>	7 days

Sarvagatra Guruta (generalized heaviness), *Sarva Sandhi Asthi Ruja* (joint and bone pain), *Gati Sanga* (impaired movement), and *Klama* (fatigue), the treatment protocol is selected accordingly. In conditions where there is *Avarana* (obstruction), the treatment begins with addressing the obstructing dosha, primarily *Kapha*, through the use of *Shamana oushadhis* (palliative medications). Once the *Kapha* dosha is balanced, the treatment focuses on the *Avruta dosha*, which in this case is *Vata*. For *Vatavyadhi* (Vata disorders), *Brimhana* (nourishing or strengthening treatments) is highly recommended. This is followed by the general line of treatment for *Vatavyadhi*, which includes therapies such as *Abhyanga* (oil massage), *Swedana* (sudation), *Vasthi* (medicated enemas) etc along with the internal administration of Ayurvedic medicines tailored to pacify *Vata*.

On internal medications

Medications given for internal use and external therapies in each patient were different, since each patient had shown a different presentation of symptoms and individual differences in *doshadushya involvement*. *Chitrakadivati* has a significant role in the digestion of *Ama* (the toxic byproducts of incomplete digestion) and the stimulation of *Agni* (digestive fire).¹⁰ It helps in improving digestive function, thus aiding in the purification of the body by promoting proper digestion and elimination of toxins. *Vishmushtivati* is beneficial in treating conditions where *Vata* is predominantly vitiated. It helps pacify *Vata*, addressing the symptoms associated with *Vata* disorders such as pain, stiffness, and nervous system imbalances. *Balaashwagandha Arista* is a combination that helps in the alleviation of *Vata* dosha, improves overall strength, and nourishes the body. It is known for its ability to enhance *Agni* (digestive fire) and promote vitality, making it highly effective in restoring balance in individuals with *Vata*-dominant conditions.¹¹ The use of *Bala* (*Sida cordifolia*) and *Ashwagandha* (*Withania somnifera*) together strengthens the body and boosts immune function, supporting recovery and vitality.

Snehapana (internal oleation) was done with *Brihat Chagalyadi Ghrita*. It was given as *shodhana purva snehapana*. It is used in all types of *Vata* disorders including emaciation, lack of strength, pain, and stiffness and it helps in strengthening immunity.¹²

Capsule *Palsineuron* contains *Mahavatavidhwansa*, *Samirapannaga*, *Ekgavira rasa*, *Lajjalu* (*Mimosa pudica* Linn.) etc. It mainly works on neuromuscular disorders. *Mahavatvidhwansa* improves metabolic processes in CNS and PNS, activates neuromuscular communication, *Sameerapannaga* improves tissue oxidation and regulates blood supply in affected areas, *Ekgaveer Rasa* promotes healing of damaged nerves and blood vessels, *Sootashekhara Rasa* provides nutritional support for faster healing of damaged tissues, *Lajjalu* has regenerative effect on neuro-lesions.¹³ *Dhanadanayanadi*

Kashaya and *mashabaladi kashaya* cure *vata dosha* and is useful in neuromuscular conditions.

Gardabha Paya (donkey's milk) is rich in proteins such as α -lactalbumin, β -lactoglobulin, and lysozyme, which have antimicrobial and immune-boosting properties.¹⁴ Additionally, it contains essential fatty acids like n-3 α -linolenic acid and linoleic acid, which are beneficial for conditions involving muscle atrophy, loss of strength, and general debility. In Ayurvedic texts, *Gardabha Paya* is referred to as *shakha vatahara* in Charaka Samhita, indicating its effectiveness in conditions involving weakness and muscle degeneration.

On external therapies

Kolukulathadi choorna helps to reduce pain and stiffness of joints, does *amapachana*, *Dosha vilayana* (liquefaction of vitiated *doshas*), and *Srotoshodhana* (cleansing of *Srotas*), which helps in removing *margavarodha* (obstruction) of *Vata*.¹⁵

Bala Taila and *Mahanarayana Taila* both possess *Santarpana* (nourishing) qualities, making them useful for *Balya* (strengthening) and *brimhana* (nourishing) therapies. These oils are specifically indicated for doing oil massage for strengthening the tissues (*Dhatus*) and pacifying *Vata*. These oils also help in rejuvenating the body by enhancing overall vitality and supporting the structural integrity of tissues. *Kottamchukadi taila* being *ushnavirya* have potentially aided in relieving neuromuscular pain, numbness, and stiffness, when combined with *swedana* (sudation therapy).¹⁶

Nadi sweda (type of sudation therapy) is highly effective in relieving blockages in the nervous system. It facilitates the opening of obstructed channels in the nerves, aiding in the restoration of proper nerve conduction. This therapy supports the remyelination of nerve fibers, improving the ability to transmit nerve impulses with minimal stimulus, thereby aiding muscular contraction and overall muscle function.

Dashamoola Kashaya used for *parisheka* and *bashpa sweda* has an anti-inflammatory effect.¹⁷

Virechana is the treatment modality mentioned for weakness and loss of strength as per *Pakshavadha chikitsa vidhi*. *Trivrit lehya* was given for *virechana* along with *triphal kwatha*.

Shashtika Shali Pinda Sweda is known for its *tridoshahara* (balancing all three doshas) properties, particularly effective in *Vata Vyadhi* and has *Brimhana* (nourishing) and *Balya* (strengthening) qualities. *Shashtika Shali* is rich in amino acids like methionine and tyrosine, vitamin B, and manganese, with significant antioxidant properties. This makes it particularly useful in treating neuromuscular disorders, muscular wasting, and conditions associated with muscle weakness.¹⁴

Nasya (nasal administration of medicines) with *Kshirabala taila* 101 *Avarthi* is a specialized therapy known for its ability to enhance sensory functions (*Indriya Prasadaka*),

particularly in cases of *Vataroga*.¹⁸ It helps in nourishing the nervous system, alleviating *Vata* imbalances, and supporting brain and nerve function. *Kshirabala* taila was used for *shirovasthi* (therapeutic retention of medicated oil over the scalp) which could serve the same benefits as mentioned before.

The role of *Vata* is critical in Ayurvedic medicine, as it governs the entire nervous system, and thus, its correction is essential for restoring normalcy to the body. In this context, *Vasthi* (medicated enema therapy) is considered one of the most important and effective treatments for *vata* disorders.

In the study conducted by Shilpasree et al., *Rajayapana vasthi* was done in the patient which has nourishing and rejuvenating qualities. It is also *tridoshahara* (balances all three doshas) and is particularly beneficial in regenerating lost myelin and axons, which can aid in the recovery of nerve function. The medicinal herbs used in *Rajayapana Vasthi* such as *Madhu* (honey), *Kshira* (milk), *Mamsa rasa* (meat juice), *Guduci*, *Bala*, *Rasna*, *Ushira*, and *Laghu Panchamula* are known for their antioxidant properties, which help combat oxidative stress and promote overall health. *Vasthi* with *Kalyanaka Ghrita* is *tridoshara* act as *varna ayu balakara*.¹⁹ *Erandamooladi Niruha vasthi* is used for treating *vata* disorders which are either *avruta janya* or *dhatukshaya janya*.²⁰ *Panchatikta Guggulu Ghrita anuvasana vasthi* was intended for nutrition and stability to *Asthi* and *Majjadhatu*.²¹

Pizhichil (drizzling of oil over the body) is highly beneficial in tackling *kevala vata vikara*. *Dhanvantaram Taila* used for *pizhichil* helps to pacify *Vata* and *Pitta dosha* and strengthen the muscles.²⁰

Numerous clinical studies on Ayurvedic interventions for Guillain-Barré Syndrome (GBS) have shown a promising role in managing its symptoms. However, several gaps have been identified that warrant further investigation. Future research should focus on:

1. Exploring a broader range of Ayurvedic interventions, including dietary and lifestyle modifications.
2. Investigating the potential benefits of *yoga*, *pranayama*, and meditation techniques in managing GBS symptoms and enhancing the quality of life.
3. Examining the efficacy of *Rasayana* preparations, which may help boost cellular immunity and support the recovery of GBS patients.

Conclusion

Guillain -Barré Syndrome (GBS) is a severe, rapidly progressing acute paralytic neuropathy typically triggered by infections, which aligns with the symptoms of *Sarvangavata vyadhi* in Ayurveda. While immunoglobulin therapy is an expensive option, the cost-effectiveness of Ayurvedic treatment appears

promising. Neuromuscular disorders like GBS can be effectively managed through Ayurvedic interventions, including Panchakarma therapies and oral administration of Ayurvedic medicines, offering symptom remission, minimal side effects, and significant improvement in the patient's quality of life.

References

1. Willison Hugh J, Jacobs Bart C, van Doorn Pieter A. Guillain-Barre syndrome. *Lancet*. 2016;388:717e27.
2. Van den Berg B, Walgaard C, Drenthen J, Fokke C, Jacobs BC, van Doorn PA. Guillain-Barre syndrome: pathogenesis, diagnosis, treatment and prognosis. *Nat Rev Neurol*. 2014;10:469e82.
3. Fokke C, van den Berg B, Drenthen J, Walgaard C, van Doorn PA, Jacobs BC. Diagnosis of Guillain-Barre syndrome and validation of Brighton criteria. *Brain* 2014;137:33e43.
4. Van den Berg B, Bunschoten C, van Doorn PA, Jacobs BC. Mortality in Guillain Barre syndrome. *Neurology* 2013;80:1650e4
5. Mahadevan L, Srividya S, Jeyalakshmi B. Dr. L. Mahadevan's Guide to Ayurvedic Clinical Practise Neurology. Vol. 2. Kanyakumari, Tamil Nadu, India: Sarada Mahadeva Iyer Ayurvedic Educational and Charitable Trust Derisanamscope. 2011.p.300-1.
6. Longo DL, Fauci AS, Kasper DL, Jameson JL, Hauser SL, Loscalzo J. Vol. 2. New York, NY: McGraw Hill; 2010. Harrison's Principle of Internal Medicine; p.3473.
7. Van den Berg B, Walgaard C, Drenthen J, Fokke C, Jacobs BC, van Doorn PA. Guillain Barre syndrome: pathogenesis, diagnosis, treatment and prognosis. *Nat Rev Neurol*, 2014;10:469e82.
8. Manthappa M. Manipal Prep Manual of Medicine. Edtion 2nd. CBC Publishers & Distributors; 2015.p.366.)
9. Abhilasha, Vyas O.P. A Critical Review on Guillain Barre Syndrome (Acute Inflammatory Demyelinating Polyneuropathy- AIDP) and their Management. *International Journal of Ayurveda and Pharma Research*. 2020;8(11):64-68.)
10. Dr. Harishchandra Singh Kushwaha, editor. Commentary Agnivesha of Charaka Samhita, Sutra Sthana. Vidhishonitiya Adhyaya Chapter 15, Verse 96. Varanasi: Chaukhamba Orientalia. 2018.p.401.
11. Prof. Siddhi Nandan Mishra, editor. Kaviraj Govind das Sen, Bhaisajyaratnavali, Vatvyadhirogaadhikar: chapter 26 Verse 572-575. Varanasi: ChaukhambaSurbharathi Prakashan, 2021; 570)
12. J Ayu Pharm Chem Role of Snehana and Svedana in Vatavyadhi [Internet]. https://www.researchgate.net/publication/344069663_
13. Sadhana Misar Wajpeyi, Role of Ayurveda in the Management of Guillain-Barré Syndrome Role of Ayurveda in the Management of Guillain-Barré Syndrome Case Study; DOI-10.13140/RG.2.2.14773.83689)
14. Shilpa sree, Swati S. Deshpande, Baidyanath Mishra. Ayurvedic Management of Guillain Barré Syndrome. *AYUSHDHARA*. 2014;1(1):50-54
15. Thomas V. Ayurveda approach in the treatment of type 2 diabetes mellitus - A case report. *J Ayurveda Integr Med* 2023;14:100744)
16. Kottamchukkadi Taila: A theoretical analysis [Internet]. Available from: https://www.researchgate.net/publication/329949676_KOTTAMCHUKKADI_TAILA_A_THEORETICAL_ANALYSIS_

17. Parekar RR, Bolegave SS, Marathe PA, Rege NN. Experimental evaluation of analgesic, anti-inflammatory and anti-platelet potential of Dashamoola. *J Ayurveda Integr Med.* 2015;6:11e8.
18. Dr. K. Nishteswar, Dr. R. Vidyanath, English translation, Sahasrayogam, Parisisthaprakaranataila, Nalpamaraditaila. Varanasi: Chowkhamba Sanskrit series office, 3rd edition. 2011.p.111.
19. Kaviraja Atrideva Gupta, Vidyotni Hindi Commentary, Astangahrdayam, Uttarsthan. Unmadapratishedam Adhyaya chapter 6, Verse 26. Varanasi: Chaukhamba Prakashan. 2016.p. 644.
20. Aswathy YS, Therokar S, Dahiya A, Dharmarajan P. An effective Ayurveda management of Sarvangavata W.S.R. to Guillain-Barre syndrome: A case report. *J Res Ayurvedic Sci.* 2024;8:137-42)
21. Akhtar B, Mahto RR, Dave AR, Shukla VD. Clinical study on Sandhigata Vata w.s.r. to Osteoarthritis and its management by Panchatikta Ghrita Guggulu. *Ayu.* 2010;31:53-77.

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