

A CRITICAL EVALUATION OF BALAHATADI TAILA IN THE MANAGEMENT OF SHIRASHULA: CLASSICAL CONCEPTS AND CONTEMPORARY SCIENTIFIC PERSPECTIVES

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ABSTRACT

Background: *Shirashula* is one of the most common disorders described under *Shiroroga* in Ayurveda and is predominantly associated with the vitiation of *Vata Dosha*. *Balahatadi Taila*, described in *Sahasrayoga*, is widely used in *Murdha Taila* procedures, particularly *Shiro Abhyanga*, for the management of *Shirashula*. Although the formulation has been traditionally employed in clinical practice, a comprehensive evaluation integrating classical concepts with contemporary scientific findings is limited. **Objective:** To critically evaluate *Balahatadi Taila* in the management of *Shirashula* by reviewing its classical indications, pharmacodynamic properties, phytoconstituents, pharmacological activities and available scientific evidence. **Materials and Methods:** A narrative review was conducted using classical Ayurvedic texts,

including *Sahasrayoga*, *Chikitsa Manjari* and *Ashtanga Hridaya*, along with published scientific literature retrieved from electronic databases such as PubMed and Google scholar. Information related to the formulation, *Dravyaguna*, phytochemistry, pharmacological properties etc were critically reviewed and synthesized. **Results:** *Balahatadi Taila* comprises *Chandana*, *Kushta*, *Yashtimadhu*, *Bala*, *Amalaki*, *Guduchi*, *Mudga* and *Masha* processed in *Tila Taila* according to the principles of *Sneha Kalpana*. The formulation predominantly exhibits *Vata-Pitta Shamaka*, *Balya*, *Brimhana*, *Rasayana* and *Shothahara* properties.

Phytochemical investigations have identified several bioactive compounds with antioxidant, anti-inflammatory, analgesic and neuroprotective potential. Available clinical studies have also demonstrated significant symptomatic improvement in *Vatika Shirashula* following the administration of *Balahatadi Taila* through *Murdha Taila* procedures. **Conclusion:** The available classical and contemporary literature suggests that *Balahatadi Taila* possesses considerable therapeutic potential in the management of *Shirashula*. Its pharmacodynamic attributes, bioactive phytoconstituents and reported pharmacological activities provide a scientific rationale for its traditional use.

KEYWORDS: *Balahatadi Taila*, *Shirashula*, *Shiro Abhyanga*, *Murdha Taila*, phytoconstituents, pharmacological activities.

1. INTRODUCTION

Sneha Kalpana is one of the fundamental pharmaceutical preparations described in Ayurveda, wherein medicated oils (*Taila*) or ghee (*Ghrita*) are processed with herbal paste (*Kalka*) and liquid media (*Drava*) to extract and incorporate the therapeutic principles of medicinal drugs into a lipid base. Owing to their ability to penetrate deep tissues, enhance drug bioavailability and facilitate both internal and external administration, *Sneha Kalpanas* occupy a significant place in the management of a wide range of diseases.

Balahatadi Taila is a classical Ayurvedic medicated oil described in the *Taila Prakarana* of the *Sahasrayoga*.^[1] Owing to its predominant *Vatahara*, *Balya* and *Brimhana* properties, it is widely indicated in disorders of the head and neck (*Jatrurdhwa Roga*), particularly those associated with vitiated *Vata Dosha*. Traditionally, the formulation is administered externally as *Shiro Abhyanga*, where it is extensively used in the management of *Shiroruja*. In addition to *Shiro Abhyanga*, it may also be employed in other external therapeutic procedures such as *Shiro Pichu* and *Shirodhara*, based on the clinical condition and physician's discretion. The formulation consists of *Chandana*, *Kushta* and *Yashtimadhu* as the *Kalka Dravyas*. The *Kwatha Dravyas* include *Bala*, *Amalaki*, *Guduchi*, *Mudga* and *Masha*, while *Tila Taila* serves as the *Sneha Dravya*. Since *Balahatadi Taila* is intended primarily for external application, particularly in procedures such as *Shiro Abhyanga* and other *Murdha Taila* therapies, the formulation is prepared up to the *Khara Paka* stage. This stage enhances the stability and shelf life of the medicated oil while making it suitable for external therapeutic use.

Shirashula refers to pain affecting the head and is one of the most common manifestations of *Shiroroga* described in Ayurveda. The head (*Shiras*) is regarded as the principal seat of *Prana*, *Indriyas* and *Manas*; therefore, disorders affecting this region significantly impair the quality of life. In the *Shiroroga Adhyaya* of the *Ashtanga Hridaya*, various diseases of the head are described based on the predominance of the vitiated *Doshas*. Depending on the involvement of *Vata*, *Pitta*, *Kapha*, *Rakta* or their combinations, *Shirashula* presents with varying clinical features such as severe pain, throbbing, burning sensation, heaviness or piercing pain. Ayurvedic management aims at pacifying the aggravated *Doshas* through *Snehana*, *Nasya*, *Murdha Taila* procedures and appropriate internal medications.

2. MATERIALS AND METHODS

This review was based on an extensive literature search of classical Ayurvedic texts and contemporary scientific literature. *Balahatadi Taila* is described in the *Sahasrayoga* and in the *Shiroroga Chikitsa* chapter of *Chikitsa Manjari*^[2], where it is indicated for the management of disorders affecting the head, particularly *Shiroruja*. While the data regarding phytochemistry, pharmacological properties and clinical studies were retrieved from textbooks, indexed journals and electronic databases including PubMed and Google Scholar.

Table no. 1: Ingredients and quantities used for the preparation of *Balahatadi taila*.

Sl No.	Ingredients	Scientific name	Part used	Quantity	
1	Kalka	Chandana	Santalum album	Heartwood	1 part
2		Kushta	Saussurea lappa	Stem	
3		Yashti	Glycyrrhiza glabra	Root	
4	Kwatha	Bala	Sida cordifolia	Whole plant	16 parts
5		Amalaki	Emblica officinalis	Fruit	
6		Guduchi	Tinospora cordifolia	Stem	
7		Mudga	Vigna radiata	Seed	
8		Masha	Phaseolus radiatus	Seed	
9	Tila Taila		Sesamum indicum	Seed oil	4 parts

According to the classical principles of *Sneha Kalpana*, medicated oils are prepared by combining *Kalka*, *Sneha* and *Drava Dravya* in the ratio of 1:4:16 respectively. In *Balahatadi Taila*, *Chandana*, *Kushta*, and *Yashtimadhu* constitute the *Kalka Dravyas*; *Bala*, *Amalaki*, *Guduchi*, *Mudga* and *Masha* constitute the *Kwatha Dravyas*; and *Tila Taila* serves as the *Sneha Dravya*. According to the classical method of *Kwatha* preparation for *Sneha Kalpana*, one part of the coarse powder (*Yavakuta Churna*) of the prescribed drugs is boiled with four parts of water and reduced to one-fourth of its original volume. The prepared *Kwatha* serves as the *Drava Dravya* for the preparation of *Balahatadi Taila*.

As *Balahatadi Taila* is intended for external application, it is classically prepared up to the *Khara Paka* stage of *Sneha Siddhi*. This stage is characterized by the complete evaporation of the aqueous component, with the *Kalka* becoming firm, coarse and capable of being rolled into a wick without adhering to the fingers. The medicated oil is then removed from the fire, filtered while warm, and stored in suitable airtight containers for therapeutic use.

3. RESULTS

3.1 Pharmacodynamic properties of *Balahatadi taila*^[3]

Table no. 2: Pharmacodynamic properties of *Balahatadi taila*.

Sl No.	Ingredients	Rasa	Guna	Virya	Vipaka	Dosha karma	Karma
1	Chandana	Tikta, Madhura	Ruksha, Laghu	Sita	Katu	Pitta Kapha samaka	Angamarda, Ahladakara, Sramahara
2	Kushta	Tikta, Katu, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	Kapha Vata samaka	Sirasula, Sotha, Kasa, Lekhaniya
3	Yashti	Madhura	Guru, Snigdha	Sita	Madhura	Tridosha samaka	Rasayana, Kanthya
4	Bala	Madhura	Snigdha, Guru	Sita	Madhura	Vata Pitta samaka	Balya, Brhmana, Sothahara, Rasayana, Hrdya
5	Amalaki	Lavana Varjita 5 rasa	Ruksha, Laghu	Sita	Madhura	Tridosha samaka	Cakshusya, Rasayana
6	Guduchi	Tikta, Kashaya	Laghu	Ushna	Madhura	Tridosha samaka	Balya, Raktha shodhaka Dipana,
7	Mudga	Madhura	Laghu, Ruksha, Visada	Sita	Katu	Kapha Pitta samaka	Drshiti prasada, Pushti balaprada
8	Masha	Madhura	Guru, Snigdha	Ushna	Madhura	Vata hara	Tarpana, balya, Brhmana

3.2 Phytoconstituents and pharmacological properties of *Balahatadi taila*^[3]

Table no. 3 Phytoconstituents and pharmacological properties of *Balahatadi taila*.

Sl No	Ingredients	Phytoconstituents	Pharmacological Properties
1	Chandana	Sesquiterpene, alcohols, Santalol, Teresantol, Santalene	Antimicrobial, Antioxidant, Cooling, Blood purifier, Antipyretic, Diuretic
2	Kushta	Kusthin, Inulin-betulin, Friedelein, Stigmasteral, Saussureal, Costunolide	Antibacterial, Antiinflammatory, Spasmolytic, Hypotensive
3	Yashti	Glycyrrhizin, Quercetin, Kaempferol, Liquiritigenin,	Antimicrobial, Antiviral, Spasmolytic, Antipyretic, Antioxidant, Antiulcer,

		Isoliquiritigenin, Licochalcone A, Liquiritin	Anti mutagenic, Anti inflammatory, Expectorant
4	<i>Bala</i>	Ephedrine, Hypaphorine, Vasiscinone, Choline, Betaine, Mucin, Steroids	Antiinflammatory, Analgesic, Tonic, Embollient, Deflatulent, Diuretic
5	<i>Amalaki</i>	Ellagic acid, Gallic acid, Ascorbic acid, Chebulagic acid, β -Sitosterol, Kaempferol, Rutin	Immunomodulator, Antioxidant, Antimicrobial, Antiulcerogenic
6	<i>Guduchi</i>	Tinosporide, Codifolide, Unosporin, Tinosporon, Codifol	Antipyretic, Alterative, Diuretic
7	<i>Mudga</i>	Flavonoids, Phenolic acid, Cinnamic acid, Vanillic acid, Ascorbic acid, Thiamine, Niacine	Antiinflammatory, Antioxidant, Analgesic, Antimicrobial, Antipyretic
8	<i>Masha</i>	Starch, Albuminoid, Fibres	Nervine tonic, Aphrodisiac

3.3 Clinical evidence

A comparative clinical study evaluating the effect of *Shirodhara* and *Shiropichu* using *Balahatadi Taila* in patients with *Vatika Shirashoola* (chronic tension-type headache) demonstrated significant clinical improvement following 7 days of treatment, with the therapeutic benefits largely maintained during the follow-up assessment on the 45th day. Both treatment modalities produced statistically significant improvements in the assessed clinical parameters when pre- and post-treatment scores were compared.^[4]

Another comparative clinical study evaluating *Nasya* with *Rasnadi Taila* and *Balahatadi Taila* in patients with *Vatika Shirashoola* included 44 patients who were randomly allocated into two groups. Group A received *Rasnadi Taila Nasya*, while Group B received *Balahatadi Taila Nasya* for a duration of 7 days. The results demonstrated that both treatment modalities produced statistically significant improvement in the clinical symptoms of *Vatika Shirashoola*, suggesting that *Balahatadi Taila* administered through *Nasya* is effective in the management of tension-type headache.^[5]

3.4 Phytochemical profiling

GC–MS analysis of *Balahatadi Tailam* extract revealed the presence of several primary bioactive compounds that are likely responsible for its therapeutic effects. The identified compounds include 15-hydroxypentadecanoic acid, vaccenic acid, trans-13-octadecenoic acid, β -eudesmol trimethylsilyl ether, N-methyl-1-adamantane acetamide and γ -sitosterol. These compounds have been reported to possess a wide range of pharmacological activities, particularly antioxidant and anti-inflammatory properties, which are considered important in the management of neurological disorders such as vertigo, migraine and insomnia.^[6]

4. DISCUSSION

Headache disorders are among the most common neurological conditions worldwide and represent a major cause of disability. In India, the burden of headache disorders has increased substantially over the past three decades. The disease burden is higher among females than males and predominantly affects individuals in the economically productive age group. Migraine and tension-type headache contribute significantly to years lived with disability (YLDs), making headache disorders an important public health concern in the country.^[7]

According to the *Shiroroga Adhyaya* of the *Uttarasthana* of the *Ashtanga Hridaya*, *Vataja Shirashula* is one of the principal types of *Shiroroga* and arises predominantly due to the aggravation of *Vata Dosha*. The causative factors include exposure to smoke (*Dhuma*), excessive sunlight (*Atapa*), snow or cold (*Hima*), excessive sleep (*Atinidra*), night vigil (*Ratri Jagarana*), excessive sweating (*Atisweda*), exposure to strong winds (*Pravata*), excessive intake of water and alcohol, lack of *Abhyanga* and excessive physical exertion. These factors vitiate *Vata*, which localizes in the head and produces characteristic symptoms.^[8]

Clinically, *Vataja Shirashula* is characterized by severe pricking or piercing pain, particularly in the bilateral temporal regions, throbbing headache, marked pulsations of the cranial vessels (*Sira Spandana*), stiffness of the lower jaw and shoulders and intolerance to light. The pain is typically relieved by therapies that pacify *Vata*, such as *Abhyanga* (oil massage), *Snehana* and *Swedana*. The predominance of *Vata* in the pathogenesis of *Vataja Shirashula* forms the basis for the use of *Murdha Taila* procedures, including *Shiro Abhyanga* with *Vatahara* medicated oils such as *Balahatadi Taila*.^[8]

In Ayurveda, *Sneha Kalpana* is considered as an ideal pharmaceutical dosage form for disorders caused predominantly by aggravated *Vata Dosha*, as *Sneha* possesses inherent *Snigdha*, *Mridu* and *Vatahara* properties that are antagonistic to the *Ruksha*, *Laghu* and *Chala* attributes of *Vata*. The use of *Tila Taila* as the *Sneha Dravya* further enhances the therapeutic efficacy of the formulation because of its *Sukshma*, *Vyavayi* and *Vikasi* properties, which facilitate deeper penetration of the active principles into the tissues during *Shiro Abhyanga*. The lipid medium also serves as an efficient carrier for extracting and delivering both lipophilic and certain hydrophilic phytoconstituents, thereby improving the bioavailability of the formulation.

The majority of the ingredients of *Balahatadi Taila* exhibit *Madhura*, *Tikta* and *Kashaya Rasa*, with predominance of *Sita Virya* and *Madhura Vipaka*. Collectively, these properties contribute to *Vata-Pitta Shamana*, while the *Balya*, *Brimhana*, *Rasayana* and *Shothahara* actions help nourish the tissues, reduce inflammation and restore physiological balance. Drugs such as *Bala* and *Yashtimadhu* impart *Balya* and *Brimhana* effects, promoting tissue nourishment and strengthening, whereas *Guduchi* and *Amalaki* provide *Rasayana* and antioxidant activities that may protect neural tissues from oxidative stress. *Kushta*, possessing *Ushna Virya* and *Tikshna Guna*, is traditionally indicated in *Shirashula* and may facilitate *Srotoshodhana* while alleviating pain. *Chandana*, with its cooling and soothing properties, helps pacify aggravated *Pitta*, which may accompany *Vata* in certain headache conditions.

The therapeutic efficacy of *Balahatadi Taila* in the management of *Shirashula* may be attributed to the diverse phytoconstituents present in its constituent drugs and their reported pharmacological activities. The formulation contains a wide spectrum of bioactive compounds, including flavonoids, phenolic acids, sesquiterpenes, triterpenoids, glycosides, alkaloids, sterols, vitamins and other polyphenolic compounds, which act synergistically to produce multiple therapeutic effects.

Headache disorders are increasingly recognized to involve complex mechanisms such as neurogenic inflammation, oxidative stress, vascular dysregulation, peripheral and central sensitization and muscular spasm. The presence of antioxidant phytoconstituents such as santalol, quercetin, kaempferol, ellagic acid, gallic acid, ascorbic acid, rutin, flavonoids and phenolic acids may help neutralize reactive oxygen species and reduce oxidative damage associated with neuronal dysfunction. Similarly, anti-inflammatory compounds including costunolide, glycyrrhizin, licochalcones, ephedrine, hypaphorine and various phenolic compounds may suppress inflammatory mediators involved in pain generation and neurogenic inflammation.

Several ingredients of *Balahatadi Taila* also exhibit analgesic and spasmolytic activities, which may contribute to the reduction of headache intensity by relieving muscle spasm and decreasing pain perception. The antimicrobial and antiviral properties of drugs such as *Chandana*, *Yashtimadhu*, *Amalaki* and *Mudga* may further aid in preventing or controlling inflammatory conditions associated with infections. In addition, the immunomodulatory activity of *Amalaki* and the tonic and restorative properties of *Bala* and *Masha* may promote tissue repair and improve the functional integrity of the nervous system.

5. CONCLUSION

Balahatadi Taila demonstrates significant therapeutic potential in the management of *Shirashula* owing to its predominantly *Vatahara*, *Balya*, *Brimhana*, *Rasayana* and *Shothahara* properties. The *Sneha Kalpana* dosage form, together with the pharmacodynamic attributes and diverse phytoconstituents of its ingredients, provides a rational basis for its analgesic, anti-inflammatory, antioxidant and neuroprotective effects. The convergence of Ayurvedic principles with contemporary pharmacological findings supports its potential role in the management of *Shirashula*. However, further experimental and well-designed clinical studies are required to substantiate its efficacy and establish a stronger scientific basis for its therapeutic application.

6. REFERENCE

1. Rao M, translator. *Sahasrayogam: Sanskrit text with English translation*. New Delhi: Central Council for Research in Ayurveda and Siddha (CCRAS); 2011. *Taila Prakarana*; *Balahatadi Taila*.
2. Namboothiri DS. *Chikitsa Manjari*. 12th ed. Alappuzha: Vidyarambham Publishers; 2015. *Shiroroga Chikitsa*, p.553.
3. Hegde PL, Harini A. A textbook of dravyaguna vijñāna. Vol. II. Revised ed. New Delhi: Chaukhambha Publications, 2022.
4. John S. *The effect of shirodhara and shiropichu in vatika shirashoola (chronic tension headache) a comparative clinical study* (Doctoral dissertation, Rajiv Gandhi University of Health Sciences (India)).
5. Kumar M, Sukusen S, Sindhu C, Munzni RN. Effect of Baladi Thalam in the management of Ardhavabhedaka (Migraine). *J Ayurveda Integr Med Sci*, 2019; 4(4): 46-51. doi:10.21760/jaims.v4i04.643.
6. Queen E, Mohammad H, Janaki CS, Balakrishnan D, Kishore D. Evaluation of GC-MS and anti-inflammatory activity of one Ayurveda oil, *Balahatadi Tailam*. *J Neonatal Surg*, 2025; 14: 195-202. doi:10.52783/jns.v14.3105.
7. Satapathy P, Chauhan S, Gaidhane S, Bishoyi AK, Priya GP, Jayabalan K, Mishra S, Sharma S, Bushi G, Shabil M, Syed R, Kundra K, Dev N, Ansar S, Sah S, Zahiruddin QS, Samal SK, Jena D, Goh KW. Trends in migraine and tension-type headaches in South Asia: findings from the Global Burden of Disease Study 2021 (1990–2021). *Front Neurol*, 2025; 16: 1514712. doi:10.3389/fneur.2025.1514712.

8. Astanga Hrdayam. Translated by K.R. Srikantha Murthy. Vol. 3, Uttara Sthana. Varanasi: Krishnadas Academy; 2014. Śiroroga Vijñānīya Adhyaya (Chapter 23).