

**PIPPALI CHOORNA VATI IN TREATMENT OF VATAKAPHAJ  
GRIDHRASI VYADHI (LUMBAGO SCIATICA SYNDROME)- A  
REVIEW ARTICLE**

**Dr. Kabita Kumari Sahoo\*<sup>1</sup> and Dr. Bipin Bihari Khuntia<sup>2</sup>**

<sup>1</sup>Professor, Dept. of Kaumarbhritya, Mahaveer College of Ayurvedic Science, Sundra,  
Rajnandgaon, Chhattisgarh, India.

<sup>2</sup>Principal, Kabiraj Ananta Tripathy Sharma Ayurved College & Hospital, Ankuspur,  
Berhampur, Odisha, India.

Article Received on  
07 February 2025,

Revised on 28 Feb. 2025,  
Accepted on 18 March 2025

DOI:10.20959/wjpr20256-35850



**\*Corresponding Author**  
**Dr. Kabita Kumari Sahoo**  
Professor, Dept. of  
Kaumarbhritya, Mahaveer  
College of Ayurvedic  
Science, Sundra,  
Rajnandgaon, Chhattisgarh,  
India.

### ABSTRACT

Severe low back pain radiating to the toes of one or both of the lower limbs is one of the commonest problems in society today. *Gridhrasi* (sciatica) is one among the *Vataja Nanatmaja Vyadhi* (disease) described in *Ayurveda*.<sup>[1]</sup> It is a painful neuromuscular disorder, posing a serious threat to the quality of life of the most productive group of population in today's India. It indicates a typical gait that resembles a "*Griddha*". *Gridhra* means vulture.<sup>[2]</sup> Vulture is fond of meat and has a particular fashion of eating meat. It pierces its beak deeply in the flesh and then draws it forcefully, causing severe pain. The pain in *Gridhrasi* is also the same kind, hence the name is given. Also, because of the persisting severe pain the patient has a typical gait i.e. slightly tilted towards the affected side and affected leg in flexed position and another leg extended. The cardinal signs and symptoms of *Gridhrasi* are *Ruk* (pain), *Toda* (pricking sensation), *Stambha* (stiffness) and *Muhurspandan* (tremors) in *Sphik* (sacral region), *Kati* (lumbar), *Uru* (thighs), *Janu* (knees), *Jangha* (calf region) and *Pada* (legs) in order and restricted lifting of the legs.<sup>[1]</sup>

In *Kaphanubandha* (association of Kapha) *Tandra* (drowsiness) *Arochaka* (loss of interest), *Gaurav* (heaviness) are present.<sup>[1,3]</sup> The signs and symptoms seen in *Gridhrasi* have resemblance with that of disorder sciatica in modern science. It is a very painful condition in

which pain begins in the lumbar region and radiates along the postero-lateral aspect of thigh and leg due to compression or irritation of the sciatic nerve. Because Gridhrasi is a very painful and chronic condition, it has to be managed with regular treatment. There is a need for certain clinical therapies on various scientific parameters which could be safe, effective and readily available, so this drug, “*Pippali Prayoga*” (*Pippali Choorna, Gomutra, Eranda Taila*) (Ref.Chakradatta 22/47) has been selected.

**KEYWORDS:** *Pippali choorna vati, Gridhrasi, Sciatica, Gait, Tremors, Straight-Leg-Raise (SLR) test.*

## INTRODUCTION

In today's modern day, fast-paced lifestyle, low back pain is a common musculoskeletal complaint in most age groups. Severe low back pain radiating to the toes of one or both of the lower limbs is one of the commonest problems in society today. It is an epidemic in most industrialized countries and it is estimated that most of the population will have some type of back-related pain in their lifetime. *Vata Vyadi* occurs due to *Vata dosha dushti* (vitiation) and *Vridhhi* (aggravated) causing symptoms like *Ruja* (pain), *Graha* (stiffness), among others. According to *Acharya Charak* Gridhrasi is a condition said to be Sciatica, where first the hip and then back, thigh, knee, and calf are gradually affected with stiffness (*stambha*), pain (*ruk*) and pricking sensation (*toda*) and associated with frequent twitching (*spandana*) due to *vata*. According to *Acharya Sushruta* *Vatadosha*, when aggravated, invades the *kandaras* (ligaments/tendons) of the ankles and toes, produces *ksepa* (pain and inability to extend) in the thighs, this disease known as *Gridhrasi*.<sup>[4]</sup> *Gridhrasi* is one of the *Vatavyadhis* in which the pain starts from hip and gradually comes down to waist, back, thigh, knee and foot affecting these parts with stiffness, distress and piercing pain. Not all lower back pain is sciatica, but if not managed in a proper and timely manner will surely lead to it.

These symptoms are of *Vata* but when disordered is caused by *Vata* and *Kapha* causing drowsiness, heaviness and anorexia. The signs and symptoms of *Gridhrasi* resemble that of Sciatica. To maintain the present lifestyle, one's routine often becomes irregular, disrupting the natural life cycle. In the present civilized area, the travelling is increasing day by day and due to uneven roads, obstacles cause injury to the vertebral column. Malnutrition also destroys the tissues that result in compression of sciatic nerve and also aggravates *Vatadosha*.<sup>[5]</sup> Low back pain is encountered more frequently in younger patients below 40 years of age but, in contrast, it is more severe in older age groups. It is found that up to 84%

of adults experience LBP at some point of time during their life but approximately 2% to 8% of these individuals will develop chronic disability. Disc degenerative disease is found to be the most common cause of low backache, being present in 72% of the cases.<sup>[6]</sup> Over 90% of lumbar disc herniation most commonly occurs at the L4-L5 or L5-S1 levels.<sup>[7]</sup> The Prevalence of disease is about 30% of the population. Though there has been immense research for the cure of this disease in various systems of medicines, the disease still remains a challenge to the medical world. Modern Science is unable to provide a cure to Sciatica, except giving temporary relief through Analgesics, epidural steroid injection and surgical treatment. So modern medicines provide symptomatic relief and those treating root causes are costly and can cause side effects. *Ayurveda* accepts this disease as *Kricchhra Sadhya* (very difficult to cure) but effectively checks the ongoing pathogenesis of the disease. There is a need for evaluation of certain *Ayurvedic* clinical therapies on various scientific parameters which could be safe, effective and readily available. So this drug study had been selected.

1. *Pippali choorna* (powdered *Piper longum*) with its *Ushna* (hot) and *Tikshnaguna* (penetrating) leads to *Shoolanashana* (pain relief) and *Vyadhiprashaman* (disease cure) in *Gridhrasi vyadhi*.<sup>[8]</sup>
2. *Erand taila* (seed oil of *Ricinus Communis*) is *Madhura* (sweet), *Tikta* (bitter) rasatmak(taste) with *Madhur Vipak* leading to *vataksaya* (alleviation) property. Also useful in managing constipation by promoting bowel movements due to its laxative property.<sup>[8]</sup>
3. *Gomutra* (cow's urine) is good digestive, laxative and neutralizing agent against toxin and Tridosha Dushti nashan and decreases *Vata* disorder.<sup>[9]</sup>
4. Pharmacology of *Pippali* is antibacterial, anti-inflammatory, antimalarial, hepatoprotective anti-cancer, antioxidant, CNS stimulant, anti-tubercular, anti-helminthic, hypoglycemic, antispasmodic, cough suppressor, anti- giardial, antiulcerogenic. analeptic, Immunomodulatory, Bioavailability-enhancing, Larvicidal, Radioprotective ,Melanin-inhibiting , Cardioprotective , Antidepressant , Antifungal, Antiamoebic.<sup>[10]</sup>

### Chemical constituents of *Pippali*

The host of natural compounds in *Pippali* includes glycosides, **eugenols**, alkaloids, **terpenoids**, resins, sugar, saturated fat, essential oil, volatile oil, and active constituents like **piperine**, **piperlatine**, **piperlongumine**, **myrcene**, **triacontane**, **quercetin**, and **sylvatine**. Two alkaloids, **piperlongumine** and **piperlonguminine**, are characterized as **N-(3,4,5-trimethoxycinnamoyl) piperidin-2-one** and **isobutylamide of piperic acid**, respectively.

(Stem and roots) **n-hexadecane, n-heptadecane, n-octadecane, n-nonadecane, n-eicosane, n-heneicosane,  $\alpha$ -thujene, terpinolene, zingiberene, p-cymene, p-methoxyacetophenone, traces of dihydrocarveol, phenylethyl alcohol, and two sesquiterpenes (essential from the dried fruit), triacontane, dihydrostigmasterol, an unidentified steroid, reducing sugars, glycosides aesculin and methyl 3,4,5-trimethoxycinnamate (roots); major alkaloid piperine and sesamin (stem and fruits); sesquiterpene hydrocarbon, caryophyllene, a sesquiterpene alcohol, carbonyl compound (essential oil); N-isobutyldeca-trans-2, trans-4-dienamide, and a lignan d-sesamin, two piperidine alkaloids: piperonaline and piperundecalidine (fruit), sylvatine, sesamin, and diauxedesmin.**

It also contains important minerals like **iron, calcium, zinc, and vitamins A, C, E.**<sup>[10,11]</sup>

### **Preparation of Castor oil**

Castor oil can be prepared with two different methods, the first belongs to the crushing of whole or decorticated seeds in power driven hydraulic processes and the second one known as *Ghani*, which consists of manually operated, screw press driven by bullocks. For commercial extraction, the first method is adopted. The oil produced is a non medicinal castor oil. The seeds are graded and made free of impurities like metallic pieces of iron and sand. The seeds are decorticated and hells are removed. If the seeds are not decorticated, the manorial value of the cake increases. But for medicinal purposes, it is desired that the seeds should be decorticated, as it improves the color of the oil and also helps in controlling its acid value. Decorticated seeds are pressed under hydraulic press with a pressure of 2 tons per square inch which helps in extracting out 30% of the oil present in the seeds at room temperature. The oil is known as cold drawn oil. Rest of the oil from the seeds is removed by further increasing the pressure and sometimes by hot pressing or even by solvent extraction process. The oil thus processed is not suitable for medicinal purposes. The cold drawn oil is then steamed at 80 degree Celsius to destroy the enzyme lipase and Ricin (toxic protein). It is then bleached and de-acidified with sodium carbonate to remove the free fatty acid. It is necessary that oil is washed with hot water before steaming to remove the mucilaginous matter present in the oil. Finally it is treated with animal charcoal to remove the impurities by adsorption and filled into the containers.

### Description of organoleptic characters

**Table 1: Organoleptic characters of Caster oil.**

Particulars	Characters
Color	Pale yellow or almost colorless, viscous, transparent liquid
Odor	Slight and characteristic
Taste	First it is bland but afterwards slightly acid and usually nauseating
Solubility	Soluble in alcohol (an exception to the category of fixed oils), miscible in chloroform, solvent ether, glacial acetic acid, and petroleum ether. It is insoluble in mineral oil.

### Chemical Constituents Castor oil

The composition of castor oil is mainly composed of 90 percent of fatty acids are Ricinoleates 4% linoleic, 3% oleic, 1% stearic, and less than 1% linolenic fatty acids and neutral lipids (triglycerides).<sup>[12]</sup> Other minor biological active compounds that consist of not-saponifiable fractions such as carotenoids, phenolics, phospholipids, phytochemicals, phytosterols, tocopherols, and tocotrienols. Other glycosides are also present in the drug, where the fatty acids are represented by isoricinoleic, linoleic, stearic and isostearic acids. The viscosity of the castor oil is due to ricinoleic acid.

### Uses

Castor oil is useful in cases of lumbago, Sciatica and fungal infections. Castor oil (60 ml) is given orally alone or with quinine at term. The oil can be used as a vehicle for parenteral administration of steroidal hormones as a bland emollient. In the form of 5-10% ointment in seborrheic dermatitis and cutaneous infections. Medicines such as atropine, cocaine, etc. are often suspended in the oil for ophthalmic application. Sodium ricinoleate solutions are used as injection in sclerosing treatment of varicose veins. Sodium ricinoleate and sulpho ricinoleate have strong bactericidal action and are used in tooth formulations.

### Chemical composition of Gomutra(cow urine).<sup>[13]</sup>

1. Gomutra contains 95% water, 2.5% urea, minerals, 24 types of salts, hormones, and 2.5% enzymes.
2. It also contains iron, calcium, phosphorus, carbonic acid, potash, nitrogen, ammonia which is antiseptic and blood purifier
3. Manganese, sulfur, phosphates, potassium, urea, uric acid, amino acids, enzymes, cytokine and lactose (when the cow is lactating).
4. Sodium, copper, carbonic acid, silicon, chlorine, magnesium, citric, vitamins like A, B, C, D, E, creatinine, uric acid, hormones, gold acids, etc.

**Bio- chemical constituents of *Gomutra*****Table 2: Bio- chemical constituents of *Gomutra*.**

Particulars	Units
Protein	0.1037 gm/lit
Uric acid	135.028 mg/lit
Urea	5.5418 milli mole/lit
Creatinine	0.9970 gm/lit
Lactate	3.7830 milli mole/lit
Phenol	4.7580 mg/100ml Free volatile phenol - 0.7130 mg/100ml Mixed volatile phenol - 1.3420 mg/100ml Aromatic hydroxyl acid - 2.7030 mg/100ml
Vitamin	Vit C - 2.16 mg /lit Vit B1 -444.125 microgram /lit Vit B2 - 0.6339 mg/lit
Enzymes	Lactate dehydrogenase 21.780 unit/lit Alkaline phosphatase 110.11 k.a. unit Acid phosphatase 456.620 k.a. unit Amylase 90.236 unit
Minerals	Calcium 5.735 milli mole/lit Phosphorous 0.4805 milli mole/lit

**Properties of *Gomutra* (Cow Urine)—**

Cow urine acts as a **bio-enhancer**,<sup>[14]</sup> promotes the **antimicrobial**<sup>[15]</sup> which acts as an antibiotic. Cow urine contains all substances, which are naturally present in the human body. *Thus*, consumption of cow urine maintains the balance of these substances and this helps manage incurable diseases like cancer, autoimmune disorders, **Immunomodulatory**<sup>[16]</sup>, AIDS and benefits in case of antibiotic resistance infectious diseases.<sup>[12]</sup>

**DISCUSSION****Benefits of Pippali Choorna**

Pippali Choorna has therapeutic properties in the management of *Gridhrasi* due to its *Ushna* (hot) and *Tikshnaguna* (penetrating) qualities, alleviates pain and inflammation of the sciatica nerve. It acts as *Vatanulomana*, *Shulaprashamana*, *Mriduvirecana*, *Krimighna*, *Raktokleshaka*, *Jantughna*, *Shroviorecana*, *Kasahara*, *Shvasahara*, *Hikkanigrahana*, *Rasayana Medhya*, *Vatahara*, *Mutrala*, *Dipana*, *Plihavridhhihara*, *Yakriduttejaka*, *Vishamajvara*, *Raktokleshaka*, *Vrishya*, *Balya*, *Garbhashyasamkocaka*.<sup>[17]</sup>

**Benefits of *Erand Taila* (Castor Oil)**

*Erand Taila*, alleviates *vata doshas* in Sciatica due to its *Tikta Rasa* & *Madhur vipaka*. Due to *Tikta* & *Katu Rasa* with *Ushna Virya* pacifies the *Ama*. Also due to its *Sukshma Guna*, it can



enter into minute pores, and *Srotovishodhana* property enables it to cleanse the channels. It enhances *Medha Kanti Bala Arogya Smriti* (improves cognitive and memory functions and augments general health and *Rasayana* Property.<sup>[12]</sup> It is used in *Ayurveda* for its anti-inflammatory, analgesic, and laxative effects, contributing to the treatment of *Vata* disorders also helps in promoting digestive health and providing a soothing effect on the affected areas, contributing to a holistic approach in managing *Gridhrasi*. The therapeutic aspect of *Eranda Tail* is much more and can be given in various disorders.

### Benefits of *Gomutra* (Cow Urine)

*Gomutra*, or cow urine, alleviates *Vata, Kapha* doshas due to its *Katu* and *Tikhta* properties in the management of *Gridhrasi*. It also has essential nutrients and compounds such as nitrogen, potassium, Calcium, copper and various vitamins and enzymes that give nutrition to the sciatica nerve and Strengthens to the bone. In *Ayurveda* treatments, *Gomutra* acts as a detoxifying agent, supporting digestion and restoring metabolic balance. Recent research shows that cow urine also has various pharmacological potentials which include anti-oxidant, immunomodulating, bio-enhancing, lipid lowering, anti-diabetic, anti-carcinogenic, anti-microbial, anthelmintic, etc. effects.<sup>[13]</sup> It helps to alleviate the *Tridoshas* (*vata, pitta, kapha*) in the management *Gridhrasi*.

*Gridhrasi*, referred to as Sciatica in modern science, is a painful neuromuscular disorder characterized by symptoms like localized pain, stiffness, and pricking sensations and tremors in the lumbar region, thighs, knees, calves, and legs. This condition is predominantly attributed to *Vata dosha* vitiation in *Ayurveda* leading to significant discomfort and impaired mobility. The prevalence of *Gridhrasi* is affecting approximately 30% of the population of modern lifestyles leading to poor posture, malnutrition, and increased mobility on uneven terrains.

### CONCLUSION

The combination of *Pippali Choorna*, *Eranda Taila*, and *Gomutra* shows a comprehensive and integrative approach to the treatment of *Gridhrasi*. Modern medicine emphasizes symptomatic relief, but in *Ayurveda* science emphasizes treating the root cause as well as the symptoms. So, these traditional remedies present an opportunity for safe, effective, and accessible treatment alternatives, underscoring the need for further scientific evaluation of such therapies within the healthcare landscape.

## REFERENCES

1. Pandit Shastri K., Vataavyadhi Chikitsa Adhyaya, Charak Samhita Uttarardha, Chaukhambha Bharati Academy, 12th ed, 1984; 28: 787.
2. Raja Radha kant deva, Shabdakalpa druma vol. 04 edition 1967 Chaukhambha Sanskritseries Varanasi, page 348.
3. Agnivesha, Charaka Samhita, Ayurveda Deepika Comm. of Chakrapani, edited by Yadavji Trikamji Acharya, Chaukhambha Surabharati Prakashana, Varanasi, Ed., Vataavyadhi chikitsa, 2000; 28/106-107: 621.
4. Shastri AD, Vataavyadhi Nidan Adhyaya, Sushrut Samhita Nidan sthana Part 1, Chaukhambha Bharati Sansthan, 2012; 303.
5. www.wjpr.net. Vol 9, Issue 14, 2020. | ISO 9001: 2015 Certified Journal | Chauhan et al. World Journal of Pharmaceutical Research 642
6. An epidemiology study of low back pain in a tertiary care hospital of jammu, india international journal of research in medical sciences Gupta R et al international research medical science, 2017; 5(3): 835-839.
7. Norman S. Williams et al, Baily & Love's short practice of surgery, Great Britain, Edward Arnold publishes, 2013; 26: 474.
8. Shastri K, Annapana Vidhi Adhyaya, Charak Samhita Poorvardha Sutrasthana, Chaukhambha Bharati Academy, 2008; 27: 560.
9. Shastri AD, Dravadravyavidhi Adhyaya, Sushrut Samhita Sutrasthana Chaukhambha Bharati Academy, 2012; 45: 280.
10. Pharmacognostical and phytochemical analysis of Pippali (*Piper longum* Linn.) Sadhana Singh, et, all ISSN (E): 2277- 7695 ISSN (P): 2349-8242 NAAS Rating: 5.03 TPI 2018; 7(6): 286-289
11. Database on Medicinal Plants Used in Ayurveda, by PC Sharma, MB Yelne and TJ Dennis, Central Council For Reseach In Ayurveda & Siddha, Reprint Janakpuri, New Delhi, Part I, 2005; II(3): 472
12. .Therapeutic aspects of *Eranda Tail* (Oil of *Ricinus Communis*) Ramraj Singh .et .all Journal of Ayurved and Integrated medical science ,ISSN 2456—3110, April 2023 Review article
13. Biochemical appraisal of Gomutra (Cow urine) Satyapal Singh E-ISSN: 2278-4136 P-ISSN: 2349-8234 JPP 2019; 8(3): 4089-4092, Journal of Pharmacognosy and Photochemistry, www.Phytojournal.com



14. Randhawa GK. Cow urine distillate as bioenhancer. *Ayurveda Integr Med.* 2010; 1: 240–1. doi: 10.4103/0975-9476.74089. [DOI] [PMC free article] [PubMed] [Google Scholar]
15. Jarald E, Edwin S, Tiwari V, Garg R, Toppo E. Antioxidant and antimicrobial activities of cow urine. *Glob J Pharmacol.* 2008; 2: 20–2. [Google Scholar]
16. Chauhan RS, Singh BP, Singhal LK. Immunomodulation with Kamdhenu ark in mice. *J Immunol Immunopathol.* 2001; 3: 74–7. [Google Scholar]
17. *Dravyaguna Vigyana* by Dr. Gyanendra Pandey, Chaukhambha Krishanadas Academy, Varanasi, Reprint 2004; 3: 116-122.