

**SHOOLHARAN YOGA IN MANAGEMENT OF PAIN A REVIEW**

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**ABSTRACT**

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. *Shoolaharan yoga*, an ayurvedic polyherbal formulation, consists of *strychnos nux-vomica* and other seven ingredients in *vati* (tablet) form.<sup>[1]</sup> It is mentioned in AFI taken from *Rasendra Saar Samgrah*, for several therapeutic uses. It is one of the most widely used ayurvedic product indicated for pain/colic, malabsorption syndrome, diarrhea, abdominal lump and digestive impairment. All the ingredients present in this yoga have proven to be efficacious in different types of pain. In this article pharmacological actions related to pain have been discussed.

**KEYWORDS:** Antispasmodic, analgesic, anti-inflammatory, pain, *shoolharana yoga*.

**INTRODUCTION**

Pain is an unpleasant sensory and emotional experience allied with actual or potential tissue damage, or described in terms of such damage.<sup>[2]</sup> Pain is of various kinds in nature like inflammatory pain, spasmodic pain, excruciating pain, etc. Among them one of the most common pain is spasmodic in nature. It occurs due to increased incidence of muscle spasm especially those of smooth muscle such as in bowel wall, and the kind of medicine that are preferred in such kind of pain are called as antispasmodics.<sup>[3]</sup> In Ayurveda, pain may be compared with *Shool*. Acharya *Sushrut* has described *Shool* in context of complication of *Gulma* He defined it

as excruciating pain like piercing of a conical object or a pin like structure is referred as pain. This type of perception may be felt in any part of body and may be given different names according to its site of origin like *Sirahshool*, *Karnashool*, *Bastishool*,<sup>[4]</sup> etc. *Shoolaharan Yoga*, an ayurvedic polyherbal formulation, consists of *strychnos nux-vomica* and other seven ingredients in *Vati* (tablet) form. It is mentioned in AFI,<sup>[5]</sup> taken from *Rasendra Saar Samgrah*,<sup>[6]</sup> for several therapeutic uses. It is one of the most widely used ayurvedic product indicated for pain/colic, malabsorption syndrome, diarrhea, abdominal lump and digestive impairment

**DRUG REVIEW**

**Rasapanchaka**

Ingredients	Rasa	Guna	Virya	Vipaka	Doshakarma
Haritaki(Terminalia Chebula) <sup>[7]</sup>	Panchrasa, (except lavan)	Laghu, Ruksha	Ushana	Madhur	Tridosahara
Sunthi (Zingiber Officinale) <sup>[8]</sup>	Katu	Laghu, Snigdha	Ushna	Madhur	Kapha-Vatashamak
Maricha (Piper Nigrum) <sup>[9]</sup>	Katu	Laghu, Teekshna	Ushna	Katu	Kapha-Vatashamak
Pippali (Piper Longum) <sup>[10]</sup>	Katu	Laghu, Snigdha, Teekshna	Anushana Sheeta	Madhur	Kapha-Vatashamak
Kuchla (Strychnos Nuxvomica) <sup>[11]</sup>	Tikta Katu	Ruksha, Laghu, Teekshna	Ushna	Katu	Kapha-Vatashamak
Hingu (Ferula Asafoetida) <sup>[12]</sup>	Katu	Snigdh, Laghu, Teekshna	Ushna	Katu	Kapha-Vatashamak Pittavardhak

Saindhav (Rock Salt)	Lavana	Snigdha, Ushna, Teekshna	Anushna Sheeta	Madhur	Tridosahara
Gandhak (Sulphur) <sup>[13]</sup>	Madhur, Katu	Sara	Ushna	Katu	Kapha-Vatashamak

### Chemical Constitution & Pharmacological Action

Ingredients	Chemical composition	Rogagnata <sup>[14]</sup>	Pharmacological action
Haritaki	Chebulinic acid, chebulic acid, corilagin, gallic acid <sup>[6]</sup>	Vedhnastaphak, Shothahara, Vranashodhak, Anuloman	Treating Flatulence, Constipation, Diarrhoea, <sup>[15]</sup>
Hingu	Ferulic acid		
Pippli	Piperine, pipartine, sesamin, pipastrol <sup>[7]</sup>	Jantughana, Shoolprashaman, Plehavridhdihar, Mutral	Carminative, Appetizer, <sup>[16]</sup>
Maricha	Piperine, piperdine, pipretine, <sup>[8]</sup>	Vataanulomaka, Shoolhara, Krimihara, Ajeernanashak	Carminative, Anticholerin, Flatulence, Indi-Gestion, <sup>[17]</sup>
Shunthi	Zingiberene, zingiberol, shogaol, lingerol <sup>[9]</sup>	Deepana, Pachana, Shothahara, Vedhanastaphak,	Antiflatulent, Anti-Inflammatory, Antispasmodic, <sup>[18]</sup>
Kuchla	Strychinine, loganin, brucine <sup>[10]</sup>	Shoolprashamana, Shothara, Putihara, Vedhnastaphak,	GIT Disorders, Colic, Acute Dysentery <sup>[19]</sup>
Saindhav	Sodium chloride		Digestive Stimulant, Carminative <sup>[20]</sup>
Gandhak	Sulphur	Deepan, Pachana, Vishaghna, Krimighana, Pleehagana And Aamdoshanashyak	

### Pharmacological activities of its ingredients

#### 1 GINGER

##### Anti-Spasmodic Effect

Ex vivo studies with the rat stomach fundus have shown that the hydro methanolic extract of dried ginger was effective in reversing the spasmogenic effects.<sup>[21]</sup>

##### Anti-Inflammatory Effect

Ginger and its compounds have been studied in detail for its anti-inflammatory effects and studies have shown it to suppress synthesis of prostaglandin by inhibiting COX-1, COX-2 and the biosynthesis of leukotriene by inhibiting 5-LOX.<sup>[22,23]</sup>

The phytochemicals 8-paradol and 8-shogaol are also reported to possess strong inhibitory effects on COX-2 enzyme activity in vitro.<sup>[24]</sup>

##### Antinociceptive Effect

To determine the effect of ginger on morphine analgesia, before a sub effective dose of morphine (2.5 mg/kg i.p.) ginger extract (200, 400, and 600 mg/kg i.p.) was injected. The radiant heat tail-flick test was used to assess the nociceptive threshold before and at different times after drug administration, results showed that ginger extract elicited a significant antinociceptive effect.<sup>[26]</sup>

##### Analgesic Effect

The ginger oil (0.25, 0.5, and 1.0 g/kg, ig) significantly decreased the number of acetic acid induced writhes in

mice compared to the animals that received vehicle (1% tween 80) only.<sup>[26]</sup>

In a research 2 g of ginger supplementation was used for 11 days on 36 participants to cure muscle pain. It was proved that daily consumption of raw and heat-treated ginger resulted in moderate-to-large reductions in muscle pain.<sup>[27]</sup>

#### 2 Piper Longum

##### Analgesic Activity

An aqueous suspension of *P. longum* root powder was given orally to rat and mice. The study accomplished that *P. longum* root have weak opioid but potent NSAID type of analgesic activity.<sup>[28]</sup>

##### Anti Inflammatory Activity

A marked anti-inflammatory activity of decoction of *Piper Longum* fruit has been reported using carrageen induced rat oedema.<sup>[29]</sup>

##### Antamoebic Activity

The fruits of *P. Longum* were tested for their efficacy against *Entamoeba histolytica* in vitro and against experimental cecal amebiasis in vivo. The ethanolic extract and isolated piperine improved cecal amebiasis by 90% and 40% respectively, in rats.<sup>[14]</sup>

#### 3 PIPER NIGRUM

##### Anti Inflammatory Action

GMCSF, IL-6, TNF- $\alpha$  and IL-1 $\beta$  which are pro-inflammatory cytokines were dramatically reduced by the administration of piperine.<sup>[31]</sup>

**Antispasmodic Effect**

The hexane and ethanol extracts of piper nigrum showed maximum analgesic effect by writhing method at all doses of 5, 10 and 15 mg/kg as compared to control (piperine) and standard (acetyl salicylic acid).<sup>[32]</sup>

**4 Ferula Asfoetida****Antispasmodic Effect**

Exposure of the precontracted ileum by acetylcholine (10 microM) to *Ferula Asafoetida* gum extract caused relaxation in a concentration-dependent manner.<sup>[33]</sup> The analgesic activity of asafoetida (25, 50 and 100 mg/kg) was compared with that of sodium diclofenac (30 mg/kg) by using acetic acid induced writhing tests. The number of writhes in all three doses of asafoetida was significantly less than the control group.<sup>[34]</sup> Fluid extract of the resin is claimed to be a powerful antispasmodic in United State.<sup>[35]</sup>

**5 Terminalia Chebula****Analgesic Activity**

The petroleum ether, chloroform, ethanol and water extracts of *T. Chebula* fruits was evaluated for its analgesic activity using the tail immersion model in mice. The ethanolic extracts exhibited analgesic response at 200, 400 and 800 mg/kg. The study was further carried for 15 days to evaluate effect of this extracts in chronic pain and maximum analgesic response was observed on 14th day.<sup>[36]</sup>

**Anti Inflammatory Activity**

The standardized extract at 250 mg/kg, p.o. dose caused 69.96% reduction in carrageenin-induced rat paw oedema and demonstrated 96.72% protective effect on human RBC membrane stability.<sup>[37]</sup>

Hydro alcoholic extract of *T. Chebula* produced a significant inhibition of joint swelling as compared with control in both formaldehyde-induced and CFA-induced arthritis.<sup>[38]</sup>

**Laxative Effect**

Extracts of *T. Chebula* increased the laxative effect in constipation at a dose of 200 mg/kg.<sup>[39]</sup>

**6 Strychnos Nux Vomica****Analgesic Effect**

Both brucine and brucine N-oxide revealed significant protective effects against thermic and chemical stimuli in hot-plate test and writhing test.<sup>[40]</sup>

**Anti Inflammatory Effect**

At a dose of 200 mg/kg-1 by weight for 7, 15 and 30 days 40%, 72% and 95% inhibition in paw oedema formation was found respectively. It shows that *S. nux vomica* is effective to check the inflammation on long term use.<sup>[41]</sup>

**7 Sulphur****Analgesic Effect**

*Triphala Guggulu* and *Gandhak Rasayan* both showed sufficient analgesic effect as compared to diclofenac sodium in management of post operative pain in inguinal hernia.<sup>[42]</sup>

pain in post-operative cases of hydrocele can be effectively managed by a combination treatment protocol including *Triphala Guggulu*, *Gandhak Rasayana* and *Balataila Matrabasti*.<sup>[43]</sup>

**8 Saindhav Lavana**

*lavana* has *Dipana* (enhances digestive power) and *Pachana* (aids in digestion particularly of ama - undigested food and toxins) properties.<sup>[44]</sup> Rock salt is widely used as an ingredient in many stomach care products like *Hingwastak Churna*,<sup>[45]</sup> because it improves digestion without causing Stomach Irritation without worsening gastritis.

It aids in digestion by stimulating digestive fire, balances natural production of HCl, and is prescribed for laxative and digestive disorders. It improves appetite, removes intestinal and abdominal gases, cramps, and soothes heartburn.

*Narikela Lavan*,<sup>[46]</sup> is useful in treating *Amlapitta* (hyperacidity), *Vatikka - Paittikka - Kaphaj - Sannipataj Shula* (here pain in abdomen due to G.I. tract disorders) and *parinamshula* (duodenal ulcer) and because of presence of *Sauvarchala Lavan*, *Saindhav Lavan* it can also be useful in *Gulma*, *Anaha*, *Udarshula* etc.<sup>[47]</sup>

**Researches Done On Shoolharana Yoga**

Research was done in *Rasashastra Evum & Bhaishajya Kalpana Vibhaga* at Rishikul Campus on *Shoolharana Yoga* (SHY) where it was potentiated with bhavana of *Shoolprashamana Mahakashya*,<sup>[48]</sup> (SHYB) and myorelaxant effect of SHY sample was observed 28.79% and SHYB sample was observed 72.73% of to that of standard (Atropine). Antispasmodic effect of SHY sample was observed 36.17% and in SHYB sample it was observed 70.91% to that of standard (Mefenamic acid).<sup>[49]</sup>

Another research was done in *Rasashastra Evum Bhaishajya Kalpana Vibhaga At Rishikul Campus* on *Shoolharana Yoga* where it was compared with *Shankh Bhasma*,<sup>[50]</sup> for its analgesic activity and it was seen that *Shoolharana Yoga* and *Shoolharana Yoga + Shankh Bhasma* was found significant and sample of *shankha bhasma* was not at the level of significance.<sup>[51]</sup>

**DISCUSSION**

Pain is a warning signal, primarily protective in nature but causes discomfort and sufferings. shoolharana yoga comprises of ingredients like haritaki, trikatu, suddha kuchla, hingu, saindhava lavana and shuddha gandhaka. These ingredients possess actions like udarshoolahara,

parinaamshoolhara, gulmahara etc. There may be various causes for pain other than surgical causes like inflammation, spasm, constipation, bloating, worm infestation, gastric problems etc. Most of the ingredients present in shoolharana yoga possess anti-inflammatory action which may help in reducing the arthritic pain in joints which is caused mainly due to inflammation. Haritaki possess carminative and laxative action and will act on pain caused due to constipation and flatulence. Drugs present in shoolharana yoga are mostly of ushna virya and as pain is believed to be due to prakopa of vata dosha,<sup>[52]</sup> ushna virya drugs will help to combat vata dosha and decrease the pain. Ingredients of this yoga act on cholinergic receptors and decreases the spasmogenic activity thus decreasing spasmodic pain like menstrual cramps. Piper longum works against the entamoeba histolytica and may have significant action in pain due to amoebiasis. Work has been done on this yoga to increase its potency by potentiating it with bhavana of shool prashamana mahakashya. As pain needs an immediate cure, there is a need to develop a fast acting painkiller in our ayurvedic system. There is a lot of scope for research in this field by which we can improve the action of the drug as well as decrease the dose, extraction being one such technique. By isolating the extracts of shoolharana yoga in different solvents we can increase the potency of the drug and may decrease the dosage.

## CONCLUSION

Shoolharana yoga is of the most widely used ayurvedic product indicated for pain/colic, malabsorption syndrome, diarrhea, abdominal lump and digestive impairment. Based upon the researches done individually on its ingredients it proved that all the drugs present in shoolharana yoga possess pain pacifying properties. Recent research done on shoolharana yoga proved that we can improve efficacy of shoolharana yoga by triturating it with shoolprashaman mahakashaya (SHYB). Further studies are going on isolating the extracts of SHYB in different solvents which may be more potent and its dose may be less.

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