

# Management of Pain in Children through Ayurveda: A Review of Literature

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## ABSTRACT

Pain is the feeling of discomfort, most of the time, it refers to physical discomfort. Children often suffer from various kinds of pain, including abdominal pain and pain due to sports injuries. Unrelieved pain may be detrimental psychologically and physically from the start. A child's quality of life can be significantly impacted by pain if it is not addressed and treated at an early age, affecting their mood, sleep, hunger, attendance at school, academic performance, and extracurricular activities. Pain management in paediatric populations poses unique challenges, necessitating a comprehensive and holistic approach. However, the use of Ayurvedic therapies can be very effective in the management of pain in children, though it is not specifically defined by any authors or researchers. This paper offers a review of the literature with a particular focus on how Ayurveda, an ancient Indian medical system that emphasizes the harmony of the body, mind, and spirit, might be utilised to treat paediatric pain. This study includes the exploration of the historical roots of Ayurveda and its traditional applications for managing pain in children, including dietary guidelines and non pharmacological interventions like Abhyanga (oil massage) and Swedana (sudation therapy).

**Keywords:** Angmardprashaman, Shool, Swedana, Vedanasthapana

## INTRODUCTION

Children are very active as they are always busy playing and engaging in various activities; therefore, the chances of accidents are much greater for them. They have a higher likelihood of experiencing pain and physical injury compared to adults. Additionally, *Agni* (digestive power) in children is *Aniyat* (irregular), hence they might suffer from digestive disorders. *Krumi* (worm infestation) is a common cause of abdominal pain, which is a prevalent type of pain in children [1].

Sports injuries are very common in children, as well as earaches. Headaches also frequently disrupt children's daily routines. Pain may present as an independent symptom, such as migraines or fibromyalgia, or be associated with other diseases, such as pain caused by arthritis, cancer, or infections. According to *Ayurveda*, children have immature *Dhatu*s (body tissues), making them more susceptible to diseases, with a lower tolerance for pain [2]. Immature tissues are less resilient and more prone to dysfunction when exposed to stressors like physical injuries, resulting in a higher susceptibility to pain. This heightened sensitivity can make pain more pronounced, disrupting routines and affecting school attendance. Pain can also impact attention span and limit day-to-day activities.

*Ayurvedic* texts use terms like *ruk*, *ruja*, *vedana*, and *shool* to describe pain. "*Shool*" is considered the most appropriate term, meaning a condition causing discomfort to the body and mind, akin to driving a nail into a person's body [3]. There is a direct relationship between pain and the *Vata dosha*, as "*Vatadrute nasti ruja*" suggests that vitiated *Vata* is primarily responsible for pain [4]. Pain only arises after contact with the *sparshanendriya* (tactile sense organ) and the mind. Due to the *sparshanendriya*'s pervasiveness in all sense organs, *dukha jnana* occurs through *sparshanendriya* in all sense organs. It is understood that the *Vata dosha* resides in the *sparshanendriya*. Because of its *yogavaahitwa* (the ability to combine with other doshas and impart its qualities without losing its own), the *Vata dosha* consistently manifests in pain associated with *pitta* or *kapha* [4].

Vitiation of *Vata* occurs in two ways: through *Dhatukshayjanya* (tissue destruction), such as fractures or tendon injuries, and through *Margavarodhjanya* (obstructive) causes, like sickle cell

crises [5]. Trauma is one of the main causes of *Vata* vitiation. While there have been many studies on paediatric pain management through *Ayurveda*, they have been limited to the management of *udarshool* (abdominal pain) only [6,7]. Therefore, this review focuses on how *Ayurveda*, an ancient Indian medical system emphasising the harmony of body, mind, and spirit, could be used to treat paediatric pain.

## MANAGEMENT OF PAIN IN CHILDREN

According to *Ayurvedic* pathophysiology, it is highlighted that pain occurs mainly due to the vitiation of *Vata dosha*. Therefore, pacifying *Vata dosha* is key to the treatment of pain management in children. The following treatments [Table/Fig-1,2] can be followed to control pain in children [8-16].

S. No.	External Management of Pain	Mode of action
1	<i>Bahya snehana</i> i.e., Abhyanga (external oleation massage) i.e., External application of medicated or unmediated <i>Sneha dravya</i> (oleative agent) such as <i>Ghee</i> , Oil [Table/Fig-3]	It pacifies the <i>Vata dosha</i> . As per the pathophysiology of pain, <i>Vata</i> is the main factor to aggravate pain hence oil should be used to pacify <i>Vata</i> . As it is best among <i>sneha dravya</i> to pacify <i>Vata</i> and <i>Kapha</i> . ( <i>snehan</i> ) [8]. <i>Bahya Snehana</i> (external oleation) is congenial to children from birth [9]. Various <i>Samhita</i> describes both external and internal <i>snehana</i> (oleation) for pacifying <i>Vata dosha</i> . external <i>snehana</i> (oleation) to be safe and convenient in children. Peer-reviewed medical researchers already have proven the benefits of massage include pain relief [10,11].
2	<i>Swedana</i> (Sudation) <i>Swedana</i> is steam therapy	<i>Sweda</i> is suggested for many different kinds of pain. It pacifies the <i>Vata</i> by its <i>ushna guna</i> (hot property) and also it dilates the body channels and improves blood flow and oxygenation toward the affected organ. As explained above <i>Vata</i> is the responsible factor for inducing pain [12]. Properties of <i>Vata</i> and <i>Swedana</i> (Sudation) are exactly the opposite. Hence the heat can cause a reduction in pain by reducing the swelling, removing the coldness at the site, and causing perspiration [13]. As per the pain gate theory of Melzack and Wall, heat is a counter irritant for pain threshold [14]. As age increases the delicacy of a child can convert into firmness and more stable <i>dhatu</i> (tissues). At that time intensity of the <i>swedan</i> can be increased [15].

3	Exercise	Because a baby cannot exercise on their own, a carer or doctor must offer the child exercises, one of which is a modified <i>Pavanamuktasana</i> procedure of <i>Pavanmuktasana</i> the baby's legs must first be held straight, and then, starting at the knee must be flexed so that the thighs are pressed up against the belly. By applying pressure to the abdomen, <i>Pavanmuktasana</i> helps to release trapped air through the anal opening, which reduces abdominal pain in infants [16].
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[Table/Fig-1]: External management of pain according to Ayurveda.

## 2.1 External Management of Pain according to Ayurveda

### 2.2 Swedan

The use of *swedan* in a child is mentioned in the *Kashyap Samhita*. There are different protocols of *swedana* (Sudation) for children, such as *Hasta*, *Pradeha*, *Nadi*, *Prastara*, *Sankar*, *Upanaha*, *Avagaha*, and *Pariseka* [17]. The method of application of these *swedana* karma is explained in [Table/Fig-2] [18].

S. No.	Swedana (Sudation) types	Method of application
1	<i>Hasta Sweda</i>	It is specially designed for children according to their body conditions. It is performed by applying the warm hand of a physician or attendant, to the desired part. It can be used from the age of four months to six years.
2	<i>Pradeha sweda</i>	Lukewarm paste of <i>vata</i> pacifying drugs is applied over the affected area.
3	<i>Upanaha sweda</i>	A combination of medicinal drugs is prepared in the form of poultice and it is heated and then applied over the affected site.
4	<i>Nadi sweda</i>	It is a popular method of <i>swedana</i> in which a steam of medicated decoction is passed through tube over the whole body or affected body part of patient. As shown in [Table/Fig-5].
5	<i>Prastara sweda</i>	<i>Swedana</i> is provided by lying a patient on hot bed.
6	<i>Sankar sweda</i>	A bolus of medicated herbs is heated and applied over a affected area.
7	<i>Avagaha sweda</i>	The patient needs to be comfortably sitting in the medicinal decoction-filled tub with his lower body submerged above the level of his umbilicus.
8	<i>Parisheka Sweda</i>	It is the specialty method of inducing <i>swedana</i> through the application of warm medicinal oil in a liquid form on the body or affected part of body.
9	<i>Pata Sweda</i>	In <i>Pata sweda</i> to achieve the <i>sweda</i> effect, a thick cloth should be heated and placed over the baby's tummy. It is specially indicated in children upto age of six years.

[Table/Fig-2]: Swedana (Sudation) types and its method of application [18].

### 2.3 Basti (Medicated Enema)

It is the procedure in which drugs are administered in the form of medicated ghee, oil, and *kashaya* (decoctions) through the anal canal. *Basti* therapy is considered the best pacifier of *Vata*, *Basti chikitsa* as it can pacify *Vata* located in any region of the body [19]. *Acharya Kashyap* explains the proper age criteria to initiate the *Basti* karma in a child as follows:

- 1) A child completing the neonatal period;
- 2) Children who crawl, stand, and walk without support;
- 3) A child who has started weaning from food. [15].

### 2.4 Ahara (Diet)

Ayurvedic science focuses on dietary changes in the management of diseases. According to *Dosha Dushya*, each disease involves specific *Dosha*, and *Ayurveda* recommends incorporating specific *Rasas* (tastes) in the diet for *Dosha* pacification. Since *Vata Dosha* is involved in pain, *Ayurveda* advises including *Vata shamak Rasas* in the diet. *Vata shamak Rasas* include *Madhur* (sweet), *Amla* (sour), and *Lavan* (salty) tastes, as they help pacify the *Vata Dosha*, making them beneficial for chronic pain. *Madhura Rasa* is *alhadakar*, *Amla*



[Table/Fig-3]: *Upanaha sweda*.

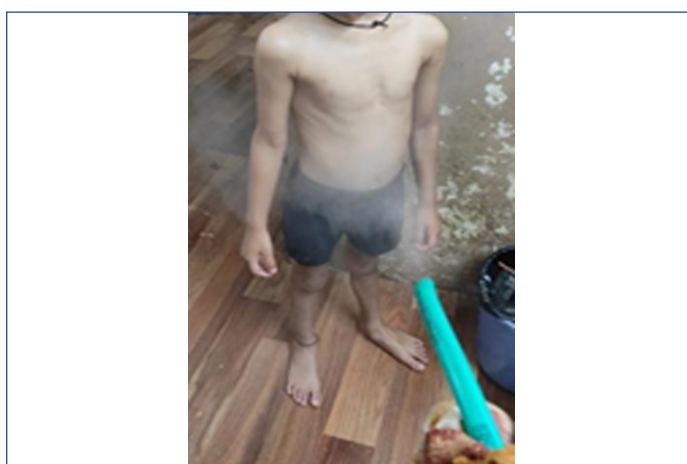
(Source: Balpanchakarma Department of Ayurved Hospital)



[Table/Fig-4]: *Abhyanga (Bahya snehana)*.

(Source: Balpanchakarma Department of Ayurved Hospital)

*Rasa* is *manaprasadana* [20], and the qualities of *Lavan* (salty) *Rasa* are *Snigdha* (unctuous), *Ushna* (hot), and *Guru* (heavy), which are opposite to *Vata's* properties, thus aiding in *Vata Dosha* pacification [21] [Table/Fig-5].



[Table/Fig-5]: *Nadisweda Basti* (Medicated enema).

The aforementioned procedures are very effective in pain management, but it is not possible to perform every procedure, such as *Shodhan Chikitsa*, on every child, and it cannot be continued for the long-term [22]. Therefore, *Shaman Chikitsa* has its importance in pain management for children. It might be said that it is the most preferred way to relieve pain in children. As discussed earlier, vitiated *Vata* is the main root cause of pain, so pacifying *Vata dosha* is important. *Ayurvedic* literature contains various drugs under the *Angmard Prashamana* [Table/Fig-6] and *Shool Prashamana* [Table/Fig-7] groups, which may be beneficial for children [23]. The drugs in the *Angmard Prashamana* group have properties like *Madhura Rasa* and hot potency, which pacify *Vata dosha* and help alleviate pain [24].

The ingredients of *Shoolprashaman Mahakashaya* consist of *Katu* (pungent taste) and *Tikta Rasa* (bitter taste), *Laghu* (light), *Tikshna* (sharpness), *Ruksha* (dryness) and *Snigdha guna* (unctuousness), *Ushna Virya* (hot potency), and *Katu Vipaka* (bio-transformed taste),

S. No.	Ayurvedic name	Botanical name	Part used	Dose [27,28]
1	Vidarigandha	<i>Desmodium gangeticum</i> DC	Roots, Bark, Leaves, flowers and fruit	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
2	Prushniparni	<i>Uraria picta</i> Desv	Root	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
3	Bruhati	<i>Solanum Indicum</i> Linn.	Root and Fruit	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
4	Kantakari	<i>Solanum surattense</i> Burm.f	Fruit	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
5	Eranda	<i>Ricinus communis</i> Linn.	Root, Leaves, Fruits	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
6	Chandana	<i>Santalum album</i> Linn.f.	Bark	Powder- 125 mg per month age
7	Ushira	<i>Vetiveria ziznioides</i> Linn.	Root	Powder- 125 mg per month age
8	Ela	<i>Elettaria cardamomum</i> Maton.	Seed	0.5 gram/day in divided doses
9	Madhuka	<i>Madhuka indica</i> J.F. Gmel.	Bark and Flowers	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
10	Kakoli	<i>Roscoea procera</i> Wall.	Root	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.

**[Table/Fig-6]:** Angamardaprashaman [23] (group of plants to treat body ache).

S. No.	Ayurvedic name	Botanical name	Parts Used	Dose [27,28]
1	Gandira	<i>Achyranthus aquatic</i>	Root	Decoction- 0.5 mL per month of age upto a maximum dose of 24 ml.
2	Ajaji	<i>Nigella sativa</i>	Fruit	Powder- 125 mg per month of age
3	Ajagandha	<i>Gynandropsis gynandra</i>	Leaves	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
4	Ajmoda	<i>Apium graveolens</i>	Fruit	Powder- 125 mg per month of age
5	Maricha	<i>Piper nigrum</i>	Fruit	Powder- 125 mg per month of age
6	Shrungvera	<i>Zingiber officinale</i>	Root	Powder- 125 mg per month of age
7	Chitraka	<i>Plumbago zeylanica</i>	Root	Powder- 125 mg per month of age
8	Chavya	<i>Piper chaba</i>	Root and Fruit	Powder- 125 mg per month of age
9	Pippalimoola	<i>Piper longum</i>	Root	Powder- 125 mg per month of age
10	Pippali.	<i>Piper longum</i>	Fruit	Powder- 125 mg per month of age

**[Table/Fig-7]:** Shoolprashamana (plants for colic pain) [23].

which, due to their nature, have an obvious alleviating action on *Vata dosha*, enabling them to actively address pain [25].

## 2.5 Internal Management (Abhyantara Chikitsa) to the baby/Children

Abdominal colic is a common concern causing pain or discomfort in babies. Due to various physiological limitations of babies, physicians should be very careful when administering medications [Table/Fig-8] [22]. In cases of abdominal colic, medications with *Deepana* (metabolism-enhancing), *Pachana* (digestive), and *Anuloma* (proper functioning of *va*–*yu*) actions are typically prescribed for internal administration in palatable formulations containing drugs like

S. No.	Ayurvedic name	Botanical name	Parts used	Dose [27,28]
1	Sala	<i>Shorea robusta</i>	Bark	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
2	Katphala	<i>Myrica esculanta</i>	Bark	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
3	Kadamba	<i>Anthocephalus cadamba</i>	Bark and Fruit	Powder- 125 mg per month of age
4	Padmaka	<i>Prunus cerasoides</i>	Seeds and Bark	Powder- 125 mg per month of age
5	Tumba	<i>Lagenaria siceraria</i>	leaves, fruits, stems, and flowers	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
6	Mochrasa	<i>Bombex ceiba</i> Linn.	Gum	125 mg per month of age, maximum upto 1 gram/day.
7	Jalbet	<i>Salix caprea</i> Linn	Leaf, Root and Bark	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
8	Elavaluka	<i>Prunus cerasus</i> Linn.	Fruit	Powder- 125 mg per month of age
9	Ashoka	<i>Saraca asoca</i> (Roxb.)	Bark	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
10	Shirisha	<i>Albizia lebbeck</i> (Linn.)	Bark	Powder- 125 mg per month of age

**[Table/Fig-8]:** Vedanasthapana (analgesic group of plants) [22].

*Ajamoda*, *Shunthi*, *Jeeraka*, *Vacha*, *Shatapushpa*, and *Hingu* [26]. Additionally, drugs can be given by placing a *Lepa* (covering of the body) on the mother's breast before nursing [22].

Vidarigandhadi gana comprises a group of 20 medicines, including vidadrigandha, vidadri, Vishwadeva, and others, as described in the Sushrut Samhita [23-28]. Vidarigandhadi gana is used for conditions such as gulm (gastritis), body aches, fractures, particularly when *vata dosha* is aggravated and *bala* (strength) is diminished. Varunadi gana includes 22 medicines such as Varuna, Shigru, Agnimanth, Bruhati, and others, and is utilised for headaches and gastritis. *Virtarvadi gana* comprises 19 medicines including Veertaru, Shwet Sahachar, Nala, and others, specifically indicated for pain in burning micturition and calculi. *Brihatyadi gana* comprises a group of five medicines, including Brihati, Kantakari, Kutaja Phala, Patha, and Madhuka, which are indicated for pain relief [29] [Table/Fig-9].

S. No.	Herbs	Indication
1	Vidarigandhadi Gana	Angamarda (Body ache)
2	Varunadi Gana	Shirashoola (Headache)
3	Virtarvadi Gana	Pain
4	Brihatyadi Gana	Pain

**[Table/Fig-9]:** Groups of herbs given by *susruta* for pain [29].

All these drugs can be used to alleviate pain. These herbs can be used in palatable formulations for children to relieve pain. Various other books of *Ayurvedic* literature also mention different formulations for pain management [27-42].

1. *Sahastra yoga*: This well known book contains 1000 medicinal formulations, including those mentioned in the following formulations [Table/Fig-10] for pain management.
2. *Arogya raksha kalpadrum*: Another well known reference book used by physicians to treat children. It lists the drugs used to treat pain in children as follows [Table/Fig-11,12] [27,28,32-42].
3. *Anupana* (Adjuvants) in *shool* (pain) [Table/Fig-13] [41].
4. **Dose calculation in children**: When treating paediatric patients with *Ayurvedic* treatment, most doctors encounter complexity. General guidelines for the dosage of Ghrita, Kashaya (decoction), Churna (herbal powder), and Kalka



S. No.	Formulation	Contents	Indications	Doses [27,28]
1	Shoolhara kashaya	Erاند, Guduchi, Bala, Shatavari, Sahachar, Shunthi	Pain in heart, chest, bladder, back	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
2	Shoolhara kashaya	Erاند, Sahachar, Kantkari, Devdaru, Shunthi, Lashun	Pain In Heart, Abdomen, Testis, Chest	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
3	Shool hara choorna	Sauvarchal Lavana, Yavakshar, Trikatu, Yavani, Gandhak, Kunniikkmul, Kajjali Jiraka Dvay, Saindhav, Palandu, Granthi Tagar, Chavya, Hing.	All types of pain	125 mg per month of age

**[Table/Fig-10]:** Formulations mentioned in Sahastrayoga for pain management [30].

S. No.	Drug formulation	Indication	Dose [27,28]
1	Saptarasa Kashaya	Pain in bladder, abdomen, backache, testis.	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
2	Kaidarya, Pallava, Yavakshara, Ajmoda with hot water	For abdominal pain.	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
3	Dashamoola processed milk	Used for all types of pain.	Decoction- 0.5 mL per month of age upto a maximum dose of 24 mL.
4	Pushkar mool powder with butter	Local application in chest pain.	local application
5	Ghee medicated with Dashamoola	Used in ear ache	0.5 mL per month of age upto a maximum dose of 24 mL.
6	Dhanyamla swed	Used in ear ache.	Local application
7	Sailusha Madhukadi oil	For ear ache.	1-2 drops in ear
8	Vilvadi oil-	For headaches.	1-2 drops in ear
9	Masha oil-	For headaches.	Local application
10	Abhiru Mustadi Ghrita	For headache.	0.5 mL per month of age upto a maximum dose of 24 mL.

**[Table/Fig-11]:** Formulations mentioned in Arogya raksha kalpadrum for pain management [31].

S.N	Yog	Indication	Dose [27,28]
1	Saindyavadya Leha [32]	Vataj shool	125 mg per month of age
2	Nagaradi kalk [33]	Parinamshool, (abdominal pain after ingestion of food)	125 mg per month of age
3	Lavan bhaskrar churna [34]	Abdominal Pain	125 mg per month of age
4	Bal kutajavaleha [35]	Abdominal Pain in diarrhea	125 mg per month of age
5	Sudarshan churna [36]	Back ache and chest pain	125 mg per month of age
6	Amrutadi kwath [35]	Painful micturition	0.5 mL per month of age upto a maximum dose of 24 mL.
7	Bala oil [37]	Pain	Local application
8	Laxmi Vilas ras [35]	Pain	125 mg per month of age
9	Sitopaladi churna [38]	Intercostal neuralgia	125 mg per month of age
10	Dashmool tail (abhyanga) [39]	Headache	Local application
11	Nagaradi nasya [40]	Headache	2 drops in nose
12	Shoolraj loh [41]	Pain	125 mg per month of age
13	Saptamrut loha [42]	Pain	125 mg per month of age

14	Triphala loha [41]	Pittaja Shool (pain caused by vitiated Pitta )	125 mg per month of age
15	Shankhadi churna [42]	Shlemaja shool (pain caused by vitiated Kapha )	125 mg per month of age
16	Dhatri loha [41]	Tri doshaja Pain (pain caused by vitiation of all dosha )	125 mg per month of age

**[Table/Fig-12]:** Formulations for pain management in other Ayurveda treatise [27,28,32-42].

S. No.	Shool	Anupana
1	Vataj shool (pain caused by vitiated Vata)	Shunthi and Errand root Decoction, Sendhav, Kanji, Bel Root, Nimbu Root Decoction, Ajwain Choorna, Yavakshar, Sauvarchal Lavan, Krushna Jeera.
2	Pittaj shool (pain caused by vitiated Pitta)	Puran Gud, Ghrit, Patol bark, Neem bark Decoction, Amalaki Choorna, Vidari Kand Swarasa, Gular and Munakka Decoction, Trun Panchmool Kwath, Satavari Swarasa, Mulhati Churna, Triphala and Amaltas Decoction.
3	Kaphaja shool (pain caused by vitiated Kapha)	Panchkol Decoction, Haritaki Churna, Vacha Churna, Yavakshar and Dashamool Decoction, Sunthi Churna and Hing, Shankh Bhasma.
4	Aamshool (pain caused by Ama)	Ajwain Churna, Motha Churna, Haritaki Churna, Saunth Churna.
5	Parinamshool (Peptic ulcer)	Madhu Ghrit, Shatavari Rasa, Haritaki Mulethi, Pippal Giloy Decoction, Motha Swarasa, Hing, Sendhav Lavan, Jeerak Churna, Jambiri Nimbu Swarasa, Saunth, Erandmool Kwath.

**[Table/Fig-13]:** Anupana (Adjuvants) in shool (pain) [41].

(paste) have been provided by Acharyas or ancient Ayurvedic physicians, as given in [Table/Fig-14] [43].

S. No.	Age	Formulation	Dose
1	1 month	Churna, Kalka, Avaleha	1 Ratti=125 mg
2	2 month to 1 year		Increase 1 Ratti= 125 mg by each month
3	1 year to 16 year		Increase 1 Masha (1.5 gram) per year
4	1 month to 16 year	For Kwatha (Decoction)	Four times the above-calculated dose according to age should be administered. For example, a one-year-old child's dosage of Nagaradi Kashaya is 6 gm (6 mL).

**[Table/Fig-14]:** Dose calculation as per Sharangdhara [43].

## CONCLUSION(S)

Ayurvedic treatises provide many drugs for effectively managing pain in children with fewer adverse effects and long-term safety. It is essential to focus on modifying these drugs into palatable forms for effective use. Many of these drugs are readily available at home and are cost-effective. Therefore, applying Ayurvedic principles and drugs in managing pain in children would be beneficial for society. It is a timely need to explore and conduct research on these drugs.

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