



A comprehensive review of *Murivenna*, an Ayurveda formulation

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ABSTRACT

Medicated oils prepared according to the process explained in Ayurvedic literatures like Shargandhara samhita are used for internal administration and local applications different ailments. Medicated oils are prepared with sesame oil processed with decoction of herbs and paste of herbs. *Murivenna*, is an Ayurvedic medicated oil used for acute injuries like contusions, fresh wounds and in fracture management. This is an attempt to understand the pharmaceutical, analytical, pharmacological and clinical aspects of *Murivenna* by doing a review of all relevant literature. *Murivenna* is not mentioned in in Brihatrayi and Laghutrayis. This formulation was first explained in Agastyamarma Sastra, a medicine textbook of Siddha medicine. The formulation available in Ayurveda Formulary of India is a modified form of above formulation. *Murivenna* was used for various ailments like fracture, dislocation, sprain, osteo arthritis, plantar fasciitis and also be prescribed as a rectal instillation medicine for inflamed hemorrhoids. There is a scope for future researches of this wonderful formulation by converting it in to patient friendly dosage forms. *Murivenna* can be converted in to other dosage forms like ointment, gel and transdermal anti-inflammatory and analgesic patches.

Keywords: Ayurveda, herbal oil, medicated oils, *Murivenna*, fracture management, taila

INTRODUCTION

In Ayurveda, medicated oils were used widely for various disease conditions both internally and externally^{1,2}. *Murivenna*, is an Ayurvedic medicated oil used for acute injuries like contusions, fresh wounds and in fracture management, while it is seen to be commonly used among Ayurveda physicians in Kerala. No reference was found in Brihatrayi and Laghutrayis regarding this combination. *Murivenna* was first explained in Agastyamarma Sastra, a medicine textbook of Siddha medicine. There are other references of *Murivenna* available in Siddha textbooks. In 1960's eminent Ayurveda academicians and physicians in Kerala developed a new combination by selecting some ingredients from these above mentioned references of *Murivenna* as per the pharmaceutical standards of Ayurveda medicine, which came out to be more cost effective. The reference of *Murivenna* is available in the Pharmacopeia of Government Ayurveda college, Trivandrum, Kerala. The word "muriv" in Malayalam means wound. *Murivenna* contains 9 herbal ingredients along with coconut oil. The same reference of *Murivenna* is quoted in Ayurveda Formulary of India (AFI) Part 3³. Now *Murivenna* is included in the Essential Drug List of Ayurveda by Ministry of AYUSH, Govt. of India. In the present scenario, it is widely used in sports medicine considering its fast effect in acute injuries. It is used for relieving pain and swelling in acute injuries. This herbal oil is used externally for various procedures like *Abhyanga*, *Pichu*, *Dhara*, *Katibasti* and *Bandhana*. Unconventionally this oil is used internally for *Snehapana* and also administered in the form of *Basti* per rectal route. Since there is no single source from which to get all relevant information, here is an attempt to understand the different aspects of *Murivenna* by doing a review of all relevant literature.

A comprehensive review about *Murivenna* available in Ayurvedic classical literature and articles published in reputed journals including those indexed in pubmed and scopus were done. Keywords used for search were 'Murivenna,' Ayurveda, pharmacology.

Murivenna and its Ingredients:

Table 1: Ingredients of Murivenna

S.N	Ingredients	Botanical name/ English name	Parts used	Quantity
Drava Dravya/ Liquid media				
1	<i>Karanja</i>	<i>Pongamia glabra</i> Vent	Leaves	384 ml
2	<i>Nagavalli</i>	<i>Piper betle</i> Linn	Leaves	384 ml
3	<i>Kumari</i>	<i>Aloe vera</i> Linn	Leaves	384 ml
4	<i>Palandu</i>	<i>Allium cepa</i> Linn	Bulb	384 ml
5	<i>Sigru</i>	<i>Moringa oleifera</i> Lam.	Leaves	384 ml
6	<i>Buka</i>	<i>Spermacoce hispida</i> Linn.	Whole plant	384 ml
7	<i>Paribadra</i>	<i>Erythrina indica</i> Lam.	Leaves	384 ml
8	<i>Tandulambu</i>	Sour rice water (<i>Oryza sativa</i>)	-	768 ml
Kalka dravya				
9	<i>Shatavari</i>	<i>Asparagus racemosus</i> Wild.	Rhizome	144 ml
Taila/Oil				
10	<i>Kera Taila</i>	Oil of <i>Cocos nucifera</i>	-	768 ml

Table 2: Properties of Ingredients of Murivenna ⁴

S. N	Ingredients	Rasa	Guna	Virya	Vipaka	Karma
1	Karanja	Tikta, Katu, Kashaya	Laghu, Ruksha, Teekshna	Ushna	Katu	Kapha vata shamana
2	Nagavalli	Tikta, Katu	Vishada, Teekshna, Ushna	Ushna	Katu	Kapha hara
3	Kumari	Tikta	Guru, Sookshma	Seetha	Katu	Vata Pitta shamana
4	Palandu	Madhura, Katu	Guru, Sookshma	Ushna	Madhura	Kapha pitta shamana
5	Sigru	Tikta, Katu	Laghu, Ruksha, Teekshna	Ushna	Katu	Kapha hara
6	Madanagandhi	Katu, Tikta	Laghu, Rooksha	Anushna seetha	Katu	Kapha pitta shamana
7	Paribadra	Katu, Tikta	Laghu	Ushna	Katu	Kapha hara
8	Shatavari	Madhura, Tikta	Guru, Snigdha	Seetha	Madhura	Kapha pitta shamana
	Tandulodaka	Madhura, Kasaya	Laghu, snigda	Seetha	Madhura	Tridosha shamana
9	Kera taila	Madhura	Brimhana	Seetha	Madhura	Vata Pitta shamana

*Madhura (Sweet), Tikta (Bitter), Kasaya (Astringent), Katu (Pungent), Ushna (hot), Seetha (cold)

Method of preparation: In *Murivenna* preparation, *Shatavari* is used as *Kalka Dravya*, *Tila Taila* as *Sneha Dravya* and *Drava Dravya* like *Swarasa* of *Karanja*, *Nagavalli*, *Kumari*, *Palandu*, *Sigru*, *Madanagandhi*, *Kimsuka* and *Tandulambu*. The medicine was prepared as per the guidelines of *Taila paka vidhi* by *Sharangadhara Samhita*.

Indications: *Murivenna* is mainly used in *Salya tantra pradhana* diseases. It is used in *Abhigatajanya shopha* (inflammation due to acute injuries), *Vrana* (wound/ulcer), *Sopha* in *Sandhi* (Joint inflammation), *Asthi bhagna* (fracture) and *Sandhi chyuti* (dislocation). It can be used in various treatment procedures like *Abhyanga* (*Mmassage*), *Bandhana* (*bandage*), *Kati Basti*, *Dhara* etc.

RESULTS AND DISCUSSION

Pharmaceutical studies: According to the study conducted by *Dhanya et al* on the pharmaceutical preparation of *Murivenna*, it was found that the final product is greenish in colour with characteristic pleasant smell of onion. The product was collected in *khara paka* and 2% loss was observed. The whole process was conducted as per the guidelines of *Sharangadhara Samhita*⁵. *Iontophoresis* with modified dosage form of *Murivenna* (*kwatha* prepared with ingredients of *Murivenna*) was conducted in a case report which found effective in *plantar fasciitis*⁶.

Analytical studies: According to the study conducted by Hepsibah *et al*, *Murivenna* is green in colour, pleasant smell, viscous and clear. The final product was having 0.92 specific gravity at room temperature, 2.17 mg/g acid value, 293.8 mg/g saponification value, 10.58 gm/100 gm iodine value and six spots (0.12, 0.27, 0.38, 0.46, 0.54, and 0.85 Rf values) in TLC analysis were found⁷.

Pharmacology studies: Anti-inflammatory study using Carrageenan induced paw oedema method and cotton pellet granuloma method conducted by Vaishali *et al* (2020) found that *Murivenna* showed significant (P<0.05) anti-inflammatory effect in acute inflammatory phase in Wistar albino rats. It showed non-significant anti-inflammatory effect in chronic inflammation⁸. Sareena *et al* (2014) found significant anti-MRSA (Methicillin resistant Staphylococcus aureus) activity for *Murivenna*. MRSA infections are very fatal as it leads to amputation and death in diabetic foot ulcer cases. *Murivenna* showed some promising results against this drug resistant bacteria⁹. U.S.Jijit *et al* (2021) *Murivenna* ointment showed a significant anti-inflammatory effect when compared with the standard drug¹⁰.

Clinical studies:

Table 3: Clinical studies on *Murivenna*

S.N	Author	Study type	Condition	Medicine	Outcome
1	Koriya. H <i>et al</i> (2022) ¹¹	Case Report	Post Fracture Stiffness	<i>Murivenna Taila Parisheka</i>	Post-fracture stiffness can be successfully managed with <i>Murivenna Taila Parisheka</i>
2	Sreerag, M. V. <i>et al.</i> (2021) ¹²	Pilot study	<i>Parikart hika</i> (Acute Fissure in Ano)	<i>Murivenna Ointment</i>	A significant relief in symptoms like pain in ano and bleeding per rectum in all patients after 30 days of treatment. The anal sphincter tonicity became normal in 21 patients (95.45%) after 30 days of treatment. Ulcer in ano was completely healed in 19 patients (86.36%) after 30 days of treatment.
3	Keerthy P <i>et al</i> (2020) ¹³	Single blind comparative clinical study with 15 patients in Group A and Group B	Episotomy wound		<i>Murivenna</i> possess statistically better pain relieving and tenderness diminishing properties compared to <i>Jatyadi Taila</i>
4	Parvathy <i>et al</i> (2016) ¹⁴	Case study	Avascular necrosis	<i>Murivenna</i> was given for <i>Abhyanga</i> with other medicines	Improved the quality of life (QOL) of the patient
5	Dhudhmal	Case study	Achillitis	<i>Parisheka</i>	<i>Murivenna oil Parisheka</i> is

	T <i>et al</i> ¹⁵ (2017)		tendinopathy	with <i>Murivenna</i> for 15 days	found effective in the management of Achillis tendinopathy.
6	Raiby paul <i>et al</i> ¹⁶ (2015)	Case study	<i>Janu Sandhigata Vata</i>	<i>Pichu</i> with <i>Murivenna</i>	Significant result in relieving the symptoms of <i>Janu sandhigata vata</i>
7	Huda A <i>et al</i> ¹⁷ (2018)	10 patients in two groups Group A: Splinted bandage with <i>Murivenna</i> Group B: Plaster of paris bandage	Colle's Fracture	Bandage with <i>Murivenna</i>	Splinted bandage with <i>Murivenna</i> has shown encouraging result on the case of Colles fracture by providing relief to symptoms like pain, tenderness, swelling and also improved range of movement of wrist joint when compared to the application of plaster of paris.

Murivenna can be used as local application in acute injuries like first degree burns and localized trauma. *Murivenna* can be used with bandaging in conditions like fracture, dislocation, sprain, osteo arthritis and plantar fasciitis. It can also be prescribed as a rectal instillation medicine for inflamed hemorrhoids.

Murivenna is helpful in reducing the inflammation may be by promoting the microcirculation by the property of the ingredients⁸. It is applied directly even into fresh wounds and in fractures and dislocations. While analyzing the properties of individual ingredients of *Murivenna*, most of them were *Tikta*, *Katu* and *Madhura Rasa* predominant and are *Kapha Pitta Shamana* also. While analyzing the properties of the single ingredients from various published research works, we can substantiate the claims of traditional *Vaidhyas* regarding the use of *Murivenna* in various clinical conditions. Coconut oil is the main ingredient of *Murivenna* which consists of various FFA's like capric acid (7%), oleic acid (6%), linoleic acid (2%), lauric acid (49%), myristic acid (18%), palmitic acid (8%), caprylic acid (8%), and stearic acid (2%). An animal study conducted by Nevin K G *et al* proved neovascularization, fibroblast proliferation, pepsin-soluble collagen synthesis, and turnover of collagen in wounds^{18,19}. Aloe vera is rich with minerals, amino acids, various enzymes and Vitamins like A,B,C and E. *P. pinnata* showed significant antimicrobial and wound healing property in experimental study²⁰. It posses higher breaking strength and the wound healing property by its angiogenic as well as mitogenic potential. *P. pinnata* down regulates TNF- α and IL-6 by increasing the serum IL-10 concentration^{21,22,23}.

Piper betel leaves extract showed significant wound healing in induced diabetic rats. This may due to the property to decrease the oxidative stress markers like malondialdehyde (MDA) and 11 β HSD-1 levels and increase superoxide dismutase (SOD) levels^{24,25}. Experimental study showed that onion extract gel has significant effect to improve the appearance of scars like redness, softness and texture over excision site^{26,27}. The wound healing property (invitro) of ethyl acetate fraction of *Moringa* leaves showed that it promotes wound healing by the proliferation and migration (wound closure rate) in human normal dermal fibroblast cells^{28,29}. According to the study conducted by Plangsombat N *et al* (2016) revealed liposomes of *Asperagus racemosus* have potent anti-inflammatory effect in the monocytic leukemia cell line THP-1 when used as transdermal and topical application^{30,31}. Study conducted by Aranya Manosroi *et al* (2011) revealed the antioxidant activity and skin

hydration enhancement activity of gel and cream containing the rice bran extracts entrapped in niosomes in experimental animals. Wound healing property of rice bran is mainly due to the presence of cationic peptides like RBP-LRR, RBP-EKL, and RBP-SSF^{32,33}. The cell line anti-inflammatory studies of the ethanolic extracts of *E. variegata* bark showed effect in acute and chronic inflammation by inhibitory effect on PGE2 and TNF- α release respectively and having antimicrobial and anti-inflammatory properties^{34,35}.

CONCLUSION:

Murivenna is a very popular formulation in southern part of India. Since the formulation is very effective in acute injuries, it should be popularized throughout the country especially in northern part of India also. There is a scope for future researches of this wonderful formulation by converting it into patient friendly dosage forms. *Murivenna* can be converted into other dosage forms like ointment, gel and transdermal anti-inflammatory and analgesic patches. Future studies can be carried out to find the effectiveness of *Murivenna* in various these modified dosage forms. Effectiveness of *Murivenna* for internal administration (*Snehapana* or *Basti* or *Nasya*) by changing the *Sneha paka* should also be a subject of research interest.

Conflict of interest: The authors have no conflicts of interest.

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