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Review Article

A Review of Pharmacological Activity of Nagdantyadi Ghrita

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ABSTRACT

Nagdantyadi Ghrita is a classical Ayurvedic herbal ghee formulation known for its therapeutic use in digestive disorders, parasitic infections, skin diseases, and fevers. This formulation contains herbs like Nagdanti, Trivrit, and Haritaki, all processed in pure cow's ghee. These ingredients provide purgative, anthelmintic, and anti-inflammatory effects. The ghee base plays a crucial role in enhancing the absorption and potency of the herbal components. This review aims to compile classical and modern information about Nagdantyadi Ghrita, covering its plant profile, literature review, method of preparation, therapeutic uses, and future potential. Though widely used in traditional practice, modern pharmacological validation is still limited, making it important to explore this formulation further for wider and safer clinical application.

INTRODUCTION

Ayurveda, the traditional system of Indian medicine, has a long history of using natural ingredients for treating various chronic and acute disorders[1]. Among its many formulations, ghrithas medicated ghee preparations are especially important because of their ability to carry both fat-soluble and water-soluble medicinal compounds deep into body tissues.[2] Nagdantyadi Ghrita is one such well-known formulation found in classical texts like Bhaishajya Ratnavali. It is mainly used to treat disorders like Grahani (a type

of digestive dysfunction), Krimi (worm infestations), skin diseases like eczema and rashes, and chronic fevers. [3] The combination of herbs in this formulation includes powerful purgative, cleansing, and rejuvenating agents. When processed in cow's ghee, these herbs become more bioavailable and easier for the body to absorb and utilize.[4] Although this ghrita has been used for centuries in Ayurvedic practice, especially in Panchakarma therapy, modern scientific studies on its safety, efficacy, and pharmacological actions are still limited.[5] There is growing interest in integrating traditional formulations into evidence-

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based medicine.[6]. Nagdantyadi Ghrita presents a strong candidate for further research and clinical trials.[7] This review article aims to present a holistic view of this formulation from both classical and modern perspectives. The term Nagdantyadi refers to the primary herb Nagdanti (*Baliospermum montanum*), which, along with other herbal ingredients, is processed with ghee to prepare the formulation.[8]

Concept of Medicated Ghee in Ayurveda

The classical Ayurvedic texts such as Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya have detailed procedures and indications for various medicated ghees.[9] These medicated ghees are not only used for oral administration but are also employed in Panchakarma procedures.[10] The therapeutic significance of medicated ghee lies in its capacity to balance all three doshas. However, Ghrita is especially beneficial in conditions caused by Pitta and Vata imbalances. Its[11]

Background of Nagdantyadi Ghrita

Nagdantyadi Ghrita is a traditional Ayurvedic medicine made with ghee and special herbs. It is mainly used for children's health, especially for brain development and nervous system problems.[12] This herbal ghee contains ingredients like Nagdanti, Shankhapushpi, and Vacha, which help improve memory, speech, and learning. It is also used to manage conditions like epilepsy and delayed development in children.[13] The ghee helps carry the herbs deep into the body, making them more effective. Taken in small doses under expert advice, Nagdantyadi Ghrita is a safe and natural remedy with its roots in ancient Ayurvedic texts and practices.[14]

Preparation Methodology 15

- Decoction: Extracts water-soluble active principles of the herbs.
- Paste: Provides the active constituents in a concentrated form and adds bulk.
- Ghee: Acts as a lipophilic vehicle to extract and preserve the fat-soluble constituents and also facilitates deep tissue penetration.

Composition and Preparation

- Nagdanti root
- Trivrit root
- Dravanti root
- Snuhi
- Gomutra (cow's urine)
- Ghee

These ingredients are known for their purgative, anti-inflammatory, and digestive properties, which are believed to help eliminate toxins from the body, particularly those affecting the liver.

Purpose nagdantyadi ghrita

Nagdantyadi Ghrita is a classical Ayurvedic medicated ghee preparation traditionally used to balance the dose particularly vata and pitta, and address various gynecological, psychological, and systemic conditions.[16] It is primarily mentioned in Bhaishajya Ratnavali and other authoritative Ayurvedic texts.[17]

Literature Review

Nagdantyadi Ghrita is mentioned in Bhaishajya Ratnavali, one of the classical Ayurvedic compendiums, under the Grahani Chikitsa chapter.[18] The herbs used in this formulation are described in ancient texts for their strong purgative, digestive, and detoxifying properties. [19] Nagdanti and Trivrit are known for clearing intestinal blockages and eliminating toxins, while Haritaki and Amalaki strengthen digestion and rejuvenate gut tissue.[20] Modern research has



confirmed several pharmacological activities of these herbs. Studies suggest that *Baliospermum montanum* has purgative, antimicrobial, and anthelmintic actions.[21]. Trivrit shown hepatoprotective and anti-inflammatory effects. Haritaki and Amalaki possess strong antioxidant and immunomodulatory properties.[22] Despite these findings, there is a lack of systematic clinical trials that study Nagdantyadi Ghrita as a compound formulation.[23] More preclinical and clinical studies are necessary to validate its benefits and safety profile, especially in the context of modern healthcare and chronic gastrointestinal conditions.[24]

Plant Profile & Taxonomical Classification

Nagdanti[25]

- Botanical Name: *Croton oblongifolius*
- Family: Euphorbiaceae
- Common Names: Nagdanti, Nagdanti
- Parts Used: Roots, leaves, seeds
- Medicinal Properties: Purgative, anthelmintic, diuretic
- Uses: Treatment of constipation, skin disorders, and as a mild laxative

Trivrit [26]

- Botanical Name: *Operculina turpethum*
- Family: Convolvulaceae
- Common Names: Trivrit, Turpeth
- Parts Used: Roots
- Medicinal Properties: Mild laxative, purgative
- Uses: Treatment of constipation and digestive disorders

Danti [27]

- Botanical Name: *Baliospermum montanum*
- Family: Euphorbiaceae
- Common Names: Danti, Wild Castor
- Parts Used: Roots, leaves, seeds

- Medicinal Properties: Purgative, anthelmintic, diuretic
- Uses: Treatment of constipation, skin disorders, and as a mild laxative

Dravanti [28]

- Botanical Name: *Jatropha curcas*
- Family: Euphorbiaceae
- Common Names: Dravanti, Purging
- Parts Used: Roots, leaves, seeds
- Medicinal Properties: Purgative, anthelmintic, diuretic
- Uses: Treatment of constipation, skin disorders, and as a mild laxative

Snuhi [29]

- Botanical Name: *Euphorbia neriifolia*
- Family: Euphorbiaceae
- Common Names: Snuhi, Sehund, Thor
- Parts Used: Stem, latex
- Medicinal Properties: Purgative, anti-inflammatory, analgesic
- Uses: Treatment of swelling, cough, rhinitis, and piles

Madanphala [30]

- Botanical Name: *Randia dumetorum*
- Family: Rubiaceae
- Common Names: Madanphala, Kadamba
- Parts Used: Fruits, seeds
- Medicinal Properties: Purgative, anthelmintic
- Uses: Treatment of constipation and digestive disorders

Ghee [31]

- Botanical Source: Derived from the milk of buffaloes, and milk of cow.
- Uses: Used in Ayurvedic formulations

Cow Urine [32]



- Source: Urine of cows
- Uses: Used in traditional medicine and Ayurvedic practices



Pharmacological Activities

1. Anti-inflammatory and Analgesic Action:[33]

- Ghee itself has anti-inflammatory properties.
- When combined with herbs that have anti-inflammatory effects
- it may help in conditions like arthritis, muscular pain, or joint pain.
- It may also reduce swelling and inflammation in tissues.

2. Nervine Tonic (Brain Health):[34]

- Medicated ghees are often used in Ayurvedic treatments to promote brain health.
- They support memory, cognition, and overall neurological health.
- This is especially true for formulations like NagdantyadiGhirita, which are traditionally used in treatments related to nervous system disorders.

3. Antioxidant Activity:[35]

- Many of the herbs used in such formulations possess antioxidant properties.
- These antioxidants help neutralize free radicals in the body, thus preventing cellular damage and promoting longevity.

5. Digestive Benefits:[36]

- Ghee itself is known to improve digestion and absorption of nutrients. It has a role in balancing digestive fire (Agni).
- The herbs in NagdantyadiGhirita may support this action further by stimulating digestion or treating digestive issues like bloating or gas.

6. Antimicrobial and Antibacterial Properties:[37]

- Some of the herbs used in Ayurvedicghees have antimicrobial and antibacterial properties.
- This can aid in improving skin health, healing wounds, or treating infections.

7. Support for Joint and Bone Health:[38]

- In some cases, specific herbs used in these ghee formulations may support joint health by promoting cartilage regeneration and alleviating symptoms associated with arthritis or joint pain.

8. Hepatoprotective:

- Studies have demonstrated NG's efficacy in mitigating liver damage induced by toxins like paracetamol in animal models.[39]

9. Cardioprotective:

- The formulation supports heart health by improving circulation and reducing risk factors.[40]

10. Antidiabetic:

- NG has shown potential in lowering blood sugar levels, beneficial in diabetes management.[41]

11. Anti-anemic:

- NG has been reported to improve hemoglobin levels and red blood cell count.[42]



Mechanisms of action

Nagdantyadi Ghrita acts mainly as a hepatoprotective agent, meaning it helps protect and heal the liver, especially against toxins like paracetamol.[43] Its mechanism of action is rooted in the synergy of its herbal ingredients such as *Croton oblongifolius*, *Operculina turpethum*, and *Baliospermum montanum* which are purgative, anti-inflammatory, and digestive in nature.[44]

How it works

1. The purgative herbs help flush out toxins quickly, reducing the time harmful substances stay in the body.[45]
2. Anti-inflammatory properties minimize liver inflammation and damage, supporting faster recovery.[46]
3. The ghrita (clarified butter) base enhances absorption of these herbs and supports the body's detoxification channels (srotas),

further boosting liver function and overall health.[47]

Preparation.

Methods[48]

1. Medicated Ghee Preparation: Mixing herbal extracts with ghee (clarified butter)
2. Traditional Ayurvedic Process: Following classical Ayurvedic texts and procedures
3. Quality Control: Ensuring purity, potency, and safety of the final product

Steps:[49]

1. Selection of herbs and ghee
2. Preparation of herbal extracts
3. Mixing and heating the ingredients
4. Filtering and storing the final product

6.3 Ingredient Quantities



1. Nagdanti (*Croton oblongifolius*) [50]

- Part Used: Root
- Quantity (approx.): 10–20 g
- Primary Actions: Used for abdominal disorders, skin diseases, and edema. Acts as a mild purgative.

- Part Used: Root
- Quantity (approx.): 5–10 g
- Primary Actions: Strong laxative; helps eliminate toxins and supports the Virechana process in Panchakarma.

2. Trivrit (*Operculina turpethum*) [51]

3. Danti (*Baliospermum montanum*) [52]

- Part Used: Root



- Quantity (approx.): 5–10 g
- Primary Actions: Acts as a purgative, anti-parasitic, and diuretic. Commonly used in cases of edema and liver disorders.

4. Dravanti (Croton tiglium) [53]

- Part Used: Processed seed
- Quantity (approx.): 1–2 g (very potent)
- Primary Actions: A strong purgative used with great caution. Known for its detoxifying properties.

5. Snuhi (Euphorbia neriifolia) [54]

- Part Used: Processed latex or leaf juice
- Quantity (approx.): 2–5 g
- Primary Actions: Purgative, hepatoprotective, and immunomodulatory in nature.

6. Madanphala (Randia spinosa) [55]

- Part Used: Fruit
- Quantity (approx.): 3–6 g
- Primary Actions: Emetic agent used during Vamana (therapeutic emesis). Also employed in treating poisoning and certain skin conditions.

7. Ghee (Buffalo & Cow ghee) [56]

- Part Used: Ghee
- Quantity (approx.): 30–50 ml
- Primary Actions: Functions as a Yogavahi (catalyst), enhances the effects of herbs, nourishes body tissues, and helps balance Pitta dosha.

8. Gomutra (Cow urine) [57]

- Part Used: Liquid (processed)
- Quantity (approx.): 10–20 ml
- Primary Actions: Acts as a detoxifier, supports liver function and digestion, and improves bioavailability of other substances.

Process to making [58,59,60, ,61]

1. Collect Raw Ingredients: Obtain fresh and authenticated herbs— Nagdanti , Trivrit , Danti , Dravanti , Snuhi, Madanphala, Buffalo ghee), cow's urine
2. Dry and Powder: Clean and sun-dry the herbs, then grind them into a fine powder.
3. Prepare Decoction : Boil powdered herbs in 16 times water until it's reduced to 1/4 of its volume.
4. Make Herbal Paste : Take a portion of the herb powder and mix with water to form a smooth paste.
5. Mix Ghee, Decoction, and Paste: Combine cow's ghee, herbal decoction, and paste in a clean vessel (typically in a 1:4:1 ratio).
6. Heat the Mixture: Cook on low flame (mridu agni) while continuously stirring to avoid sticking or burning.
7. Check for Completion.: When water fully evaporates and frothing stops, the formulation is ready. Aroma becomes pleasant, and a drop placed on fingers should not produce any cracking sound.
8. Filter: Strain the warm mixture through a clean muslin cloth.
9. Store: Pour the ghruta into sterilized glass jars. Store in a cool, dry place away from direct sunlight.



DISCUSSION:

Obtaining fresh and authentic herbs such as Nagdanti, Trivrit, Danti, Dravanti, Snuhi, and Madanphala is essential for ensuring the effectiveness and safety of traditional Ayurvedic remedies. [62] These herbs are commonly used in Panchakarma treatments, especially in purgation (Virechana) and emesis (Vamana) therapies.[63] Sourcing them from certified Ayurvedic suppliers or trusted local herbalists ensures their purity and medicinal strength.[64] Additionally, buffalo ghee and cow's urine play vital roles in detoxifying and preparing the body.[65] Buffalo ghee is used for internal oleation, softening toxins, while cow's urine, believed to have antimicrobial and cleansing properties, is often used in formulations. [66] It is crucial that both are collected hygienically from healthy animals, following ethical practices. Always verify sources and ensure herbs are not contaminated or adulterated. [67] Consultation with a qualified Ayurvedic practitioner is recommended before use to avoid side effects and ensure proper dosage.[68]

RESULT :

Using fresh, authentic herbs and ingredients like Nagdanti, Trivrit, and buffalo ghee significantly

improves the effectiveness of Ayurvedic therapies. Proper sourcing ensures safety and enhances the herbs' healing properties. When used correctly under expert guidance, these natural remedies support detoxification, improve digestion, and balance the body's doshas. Many users have reported relief from chronic conditions and improved energy levels. However, self-medication can be harmful; hence, expert consultation is essential. Ensuring the quality of herbs and animal products not only ensures better results but also protects against possible adverse reactions or ineffective treatment.

Therapeutic Applications

1. Helps relieve chronic constipation.
2. Removes intestinal parasites and worms.
3. Supports healthy digestion and absorption.
4. Reduces inflammation in the stomach and intestines.
5. Treats skin conditions like eczema and rashes.
6. Detoxifies the body and clears metabolic waste.
7. Enhances liver function and bile flow.
8. Strengthens immunity and improves gut health.
9. Used in Panchakarma therapy for internal oleation (*snehapana*).



10. Balances doshas and improves overall vitality.

CONCLUSION

Nagdantyadi Ghrita is a time-honored Ayurvedic formulation with multi-dimensional benefits. From cleansing the digestive tract to supporting immune function, it acts on various systems of the body. Its ingredients are well-documented in traditional texts and show promising pharmacological effects like purgative, anti-inflammatory, and detoxifying actions. Despite its popularity in Ayurvedic practice, scientific validation through clinical trials is still lacking. To integrate this formulation into modern practice, future studies should focus on standardization, safety, and therapeutic efficacy. With proper research, Nagdantyadi Ghrita can be a bridge between traditional healing and evidence-based medicine.

FUTURE PROSPECTIVE

- **Clinical Trials for Liver Diseases:** There is a need for large-scale clinical trials to evaluate its effectiveness in treating liver diseases like hepatitis and cirrhosis.
- **Long-Term Safety Studies:** Studies should assess the long-term safety of Nagdantyadi Ghrita, especially for chronic use, focusing on side effects and toxicity.
- **Potential for Cancer Prevention:** Given its antioxidant properties, it would be worth studying if Nagdantyadi Ghrita can help prevent cancer or support cancer treatment.
- **Combination with Modern Medicines:** Studying how Nagdantyadi Ghrita can be used alongside conventional drugs for synergistic effects would expand its therapeutic potential.
- **Exploring its Neuroprotective Effects:** Clinical research should explore its potential

to slow down or prevent neurodegenerative diseases such as Parkinson's and Alzheimer's.

- **Personalized Medicine Approaches:** Research could focus on personalizing the use of Nagdantyadi Ghrita based on individual genetic makeup or dosha type in Ayurveda.
- **Effect on Skin Diseases:** Given its anti-inflammatory and healing properties, it would be beneficial to research its use in treating eczema, psoriasis, or wound healing.
- **Exploration of Adaptogenic Properties:** Future studies can explore its adaptogenic effects in mental health—especially in treating anxiety and stress.
- **Improving Standardization:** Developing standardized versions of Nagdantyadi Ghrita for consistent quality and potency across batches is essential for better clinical use.
- **Research on Diabetic Management:** There is potential for Nagdantyadi Ghrita in managing Type 2 diabetes, particularly its role in blood sugar regulation and insulin sensitivity.
- **Understanding the Role of Ghee:** Investigating how ghee in the formulation helps deliver herbal compounds and enhances bioavailability would provide valuable insights.
- **Effects on Cardiovascular Health:** Research should examine its impact on blood pressure, heart disease, and its potential to reduce inflammation in cardiovascular conditions.
- **Investigating Antimicrobial Properties:** Future studies could explore the antimicrobial and antiviral effects of Nagdantyadi Ghrita, especially in treating infections.

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