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RESEARCH ARTICLE

“GUDUCHI: THE WONDER DRUG AND ITS MULTIFACETED ROLE IN PANCHAKARMA MANAGEMENT - FROM SHODHANA TO REJUVENATION”

Simranjot Kaur¹, Sanjeev Sood² and Priyanka Kumari³

1. PG Scholar, Department of Panchakarma, Dayanand Ayurvedic College, Jalandhar, Punjab, India.
2. Vice Chancellor, Guru Ravidas Ayurveda University, Former Professor & H.O.D. Dept. of Panchakarma, Dayanand Ayurvedic College, Jalandhar, Punjab, India.
3. Assistant Professor, Department of Panchakarma, Dayanand Ayurvedic College, Jalandhar, Punjab, India.

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Abstract

Guduchi (*Tinospora cordifolia*), commonly known as Giloy, is one of the most important medicinal plants described in Ayurveda and is widely recognized for its Rasayana, immunomodulatory, antioxidant and rejuvenative properties. Classical Ayurvedic texts describe Guduchi as beneficial in Jwara (fever), Prameha (diabetes mellitus), Kamala (jaundice), Kushtha (skin disorders), inflammatory disorders and metabolic abnormalities. Ayurveda considers Guduchi a potent Tridosahara and Vyadhikshamatva Vardhaka herb capable of promoting longevity, immunity and vitality. Modern scientific investigations have validated several traditional claims and reported antimicrobial, hepatoprotective, anti diabetic, anti inflammatory, neuroprotective, cardioprotective and anticancer activities. Guduchi is also extensively used in Panchakarma procedures, particularly in Jwara, Amavata, metabolic disorders and inflammatory conditions due to its Amapacana, Rasayana and Doshashamana properties. The present review summarizes the Ayurvedic perspective, phytochemical profile, pharmacological actions, therapeutic significance and role of Guduchi in Panchakarma from both classical and modern viewpoints. Available evidence suggests that Guduchi possesses remarkable medicinal potential and may serve as an important component in integrative healthcare systems.

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Introduction:-

Guduchi, commonly known as Giloy and botanically identified as *Tinospora cordifolia* (Willd.) Hook. f. & Thoms., occupies an important place among medicinal plants described in Ayurveda. It belongs to the family Menispermaceae and is regarded as one of the best Rasayana Dravya due to its rejuvenative, immunomodulatory and disease-preventive actions. Ayurveda considers Guduchi a potent herb capable of improving immunity, vitality and resistance against diseases. Traditionally, Guduchi has been extensively used in Jwara, Prameha, Kamala, Kushtha, Amavata, Vatarakta and chronic inflammatory disorders.²

Corresponding Author:- Simranjot Kaur

Address:- PG Scholar, Department of Panchakarma, Dayanand Ayurvedic College, Jalandhar, Punjab, India.

The term “Guduchi” signifies “that which protects the body against diseases.” Among its numerous synonyms, “Amrita” is the most popular, symbolizing the “nectar of immortality,” which reflects its life-promoting and rejuvenative actions. Other important synonyms mentioned in Ayurvedic literature include Chhinnaruha, Madhuparni, Amṛtavalli, Vatsādani, Tantrika and Jivantika.³ Guduchi is classified under Audbhida Dravya and specifically considered a Chetana Dravya in Ayurveda. The stem is mainly used therapeutically, although roots and leaves are also employed in several formulations. Classical Ayurvedic texts including Charaka Samhita⁴, Sushruta Samhita⁵ and Ashtanga Hridayam⁶ have extensively described the therapeutic importance of Guduchi as Tridosahara, Jvaraghna, Dipaniya and Rasayana. Guduchi is also an important constituent of classical formulations such as Samsamani Vati, Guduchyadi Kvatha, Amrutarishta and Amrtottara Kashaya.

Modern phytochemical investigations have demonstrated the presence of alkaloids, glycosides, diterpenoid lactones, steroids, flavonoids and phenolic compounds responsible for its diverse pharmacological activities. Important phytoconstituents such as berberine, palmatine, magnoflorine, tinosporaside and cordifolioside significantly contribute to its therapeutic actions.⁷ Recent scientific studies have further validated its antioxidant, antimicrobial, hepatoprotective, anti-inflammatory, anti-diabetic, cardioprotective and neuroprotective activities.⁸ Therefore, Guduchi continues to gain increasing importance in integrative and evidence-based healthcare systems.

Background:-

Medicinal plants have played a crucial role in traditional healthcare systems since ancient civilization. Among them, Guduchi has gained exceptional importance because of its wide spectrum of therapeutic applications and rejuvenative actions. Classical Ayurvedic literature describes Guduchi as a potent Rasayana herb capable of improving immunity, digestion, metabolism, tissue nourishment and overall health.⁹ The historical importance of Guduchi can be traced back to ancient Ayurvedic literature where references indicate its medicinal and spiritual significance. Ancient Acharyas extensively utilized Guduchi in disorders associated with chronic fever, inflammation, metabolic abnormalities and tissue degeneration.¹⁰

Modern pharmacological research has strengthened the scientific basis of Guduchi. Experimental studies have confirmed its antimicrobial, antioxidant, anti-diabetic, hepatoprotective, immunomodulatory, anti-cancer and neuroprotective activities.¹¹

Drug Review:-

Table No. 1 Drug Review

Parameter	Description
Botanical Name	Tinospora cordifolia (Willd.) Hook. f. & Thoms.
Family	Menispermaceae
Common Name	Giloy
Ayurvedic Category	Rasayana Dravya
Habit	Climbing shrub
Useful Parts	Stem, leaves and roots
Main Properties	Tridosahara, Jvaraghna, Rasayana, Dipana, Balya

Ayurvedic Review:-

Rasa Panchaka of Guduchi:-

Table No. 2 Rasa Panchaka of Guduchi

Parameter	Description
Rasa	Tikta, Kashaya
Guna	Laghu, Snigdha
Vīrya	Ushna
Vipāka	Madhura
Prabhāva	Rasayana, Tridoṣahara

Historical Review of Guduchi:-

In Charaka Samhita:-

Guduchi has been described under Jvaraghna, Dipaniya and Rasayana Mahakshaya.⁴

In Sushruta Samhita:-

Guduchi is indicated in Jwara, Kushtha, Prameha and Pandu Roga.⁵

In Ashtanga Hrdaya:-

Acharya Vagbhata described Guduchi as an excellent Rasayana and Tridosahara drug.⁶

Varieties of Guduchi:-

Classical texts mention varieties such as:¹²

- Guduchi
- Kanda Guduchi
- Pinda Guduchi

Two botanical varieties commonly described are:

1. *Tinospora cordifolia*
2. *Tinospora sinensis*

Among these, *Tinospora cordifolia* is considered superior for medicinal use. Guduchi growing over Neem tree is traditionally considered therapeutically superior due to enhanced medicinal potency.

Phytochemical Constituents:-

Guduchi contains numerous bioactive constituents including:¹³

- Alkaloids
- Glycosides
- Diterpenoid lactones
- Steroids
- Sesquiterpenoids
- Flavonoids
- Phenolic compounds
- Polysaccharides

Important compounds include:

- Berberine
- Palmatine
- Magnoflorine
- Tinosporaside
- Jatrorrhizine
- Giloin
- Cordifolioside
- Tinosporin
- Cordifolide¹⁴

These compounds contribute significantly to the broad pharmacological profile of Guduchi.

Pharmacological Actions of Guduchi:-

Antioxidant Activity:-

Guduchi exhibits potent free radical scavenging activity due to flavonoids and phenolic compounds, thereby protecting tissues from oxidative stress.¹⁵

Anti-Diabetic Activity:-

Isoquinoline alkaloids such as palmatine and magnoflorine improve glucose metabolism and help in diabetes management.¹⁶

Immunomodulatory Activity:-

Guduchi enhances macrophage function, lymphocyte activity and immune response, supporting host defense mechanisms.¹⁷

Anti-Inflammatory Activity:-

The herb inhibits inflammatory mediators and reduces edema, arthritis and tissue inflammation.¹⁸

Hepatoprotective Activity:-

Guduchi protects liver tissue against toxin-induced hepatic damage and improves liver enzyme levels.¹⁹

Anti-Cancer Activity:-

Experimental studies have demonstrated apoptosis-inducing and tumor-suppressive potential against various cancer cell lines.²⁰

Neuroprotective Activity:-

Experimental studies suggest that Guduchi possesses neuroprotective and anti-neuroinflammatory potential.²¹

Anti-Microbial Activity:-

Stem, leaf and root extracts exhibited activity against Gram-positive and Gram-negative organisms.²²

Cardioprotective Activity:-

Guduchi reduced myocardial oxidative damage and improved cardiac function in experimental models.²³

Role of Guduchi in Panchakarma:-

Guduchi plays an important role in Panchakarma Chikitsa because of its Amapachana, Dipana, Rasayana and Tridosahara properties. It is commonly used both as an internal medicine and as an adjuvant during purification therapies.²⁴

Guduchi is especially useful in:

- Purva Karma for improving digestion and reducing Ama
- Virechana Karma in Pitta dominant disorders
- Basti Karma in Amavata, Vatarakta and inflammatory disorders
- Rasayana Prayoga after Shodhana
- Management of chronic fever and metabolic disorders during Panchakarma

Guduchi in Poorva Karma:-**Amapachana and Deepana:-**

Before Shodhana, removal of Ama and activation of Agni is essential. Guduchi acts as an excellent Amapachana and Deepana drug.

Table No. 3 Amapachana and Deepana Drugs

Formulation	Indication	Reference
Guduchi Swarasa with Madhu	Sthoulya	Charaka Samhita Su. 21/21–24
Guduchi Kwatha with Madhu	Prameha	Charaka Samhita Chi. 06/30
Guduchi Kashaya	Mutrakrichra	Ashtanga Hrdaya Chi. 11/12
Guduchi Swarasa	Prameha	Ashtanga Samgraha Chi. 14/05
Guduchi Satva	Jwara	Sharangadhara Samhita Ch. 09/44
Guduchi Kwatha with Pippali	Jeerna Jwara	Sharangadhara Samhita Ch. 02/46–47

Snehana Karma:-

Guduchi is used in medicated Sneha preparations for internal and external oleation.

Table No. 4 Sneha Preparations

Formulation	Procedure	Indication	Reference
Guduchi Taila	Abhyanga / Snehapāna	Vatarakta	Charaka Samhita Chi. 29/121
Amṛta Taila	Snehana	Vataja Swarabheda	Charaka Samhita Chi. 26/28
Guduchyadi Taila	Anuvasana Basti	Vata Vyadhi	Sushruta Samhita Utt. 05/47–49
Dashamoola Anuvasana Taila	Anuvasana Basti	Vatahara	Ashtanga Hrdaya Kalpa 04/54–57
Bala Guduchi Taila	Snehana	Vata Vyadhi	Classical Basti references
Guduchyadi Ghṛita	Snehapana	Mushaka Damsha	Sushruta Samhita Ka. 07/26–31
Guduchyadi Ghṛita	Snehapana	Jwara	Ashtanga Hrdaya Chi. 01/94
Amritlatadi Ghṛita	Snehapana	Pandu	B.P.Pandu Chi. /46
Guduchyadi Ghṛita	Snehapana	Kasa	Charaka Samhita Chi. 18/161–162
Amritadi Ghṛita	Snehapana	Pittaja Osth Roga	Ashtanga Hrdaya Utt. 22/06
Amritadi Ghṛita	Snehapana	Kaphaja Timira	Ashtanga Hrdaya Utt. 13/68
Mahaguduchi Ghṛita	Snehapana	Vatarakta	B.P.Vatarakta Chi. /69–70
Amritadi Ghṛita	Snehapana	Vishamajwara	Yoga Ratnakara Pg. 235
Amritadi Ghṛita	Snehapana	Vatarakta	Yoga Ratnakara Pg. 556
Guduchi Ghṛita	Snehapana	Vatarakta	Chakradatta 23/24
Amritadya Ghṛita	Snehapana	Vatarakta	Chakradatta 23/26–32
Vajraka Ghṛita	Snehapana	Kuṣṭha	Ashtanga Hrdaya Chi. 19/18
Panchatikta Ghrita Guggulu	Shamana / Snehana	Vata Vyadhi	Ashtanga Samgraha Chi. 23/36–39
Panchatikta Ghrita	Snehapana	Kushtha	Yoga Ratnakara Utt. Pg. 224
Vajraka Ghṛita	Snehapana	Kuṣṭha	Ashtanga Samgraha Chi. 21/67

Swedana Karma:-

Guduchi decoctions are used in Nadi Sweda and Upanaha Sweda.

Table No. 5 Sweda Preparations

Formulation	Procedure	Indication	Reference
Guduchi Kashaya Nadi Sweda	Nadi Sweda	Vata-Kaphaja Vyadhi	Charaka Samhita Su. 14/29-33
Mahāsāla Lavaṇa Upanaha	Upanaha Sweda	Vata Vyadhi	Sharangadhara Samhita Utt. 05/23-27

Guduchi in Pradhana Karma:-**Vamana Karma****Table No. 6 Vamana Formulations**

Formulation	Indication	Reference
Madanaphala Avaleha with Guduchi	Kapha-Pitta Vyadhi	Charaka Kalpasthana 01/22
Jimutaka Hima with Guduchi	Jwara	Charaka Kalpasthana 02/09-10

Virechana Karma:-**Table No. 7 Virechana Formulations**

Formulation	Indication	Reference
Nisha Sharkara Kalpa with Guduchi	Vata-Pitta Vyadhi	Charaka Kalpasthana 07/18-19
Guduchi Virechana Yoga	Kushtha, Paṇḍu	Charaka Kalpasthana 06/05-07

Basti Karma:-**i) Niruha / Asthapana Basti:-****Table No.8 Niruha Basti Preparations**

Formulation	Type	Indication	Reference
Guduchi Asthapana Basti	Asthapana Basti	Vata Vyadhi	Charaka Samhita Sutrasthana 02/13
Guduchyadi Niruha Basti	Niruha Basti	Marmaghata	Charaka Samhita Siddhithana 09/08
Guduchyadi Asthapana Basti	Asthapana Basti	Vata Vyadhi	Sushruta Samhita Chikitsasthana 38/47-49
Balaguduchyadi Niruha Basti	Nirūha Basti	Vata Vyadhi	Ashtanga Hrdaya Siddhithana
Guduchyadi Kshira Basti	Kshira Basti	Vatarakta	Charaka Samhita Chikitsasthana 29/88

Anuvasana Basti:-**Table No. 9 Anuvasana Basti Preparations**

Formulation	Type	Indication	Reference
Guduchi Anuvasana Basti	Anuvasana Basti	Vata Vyadhi	Charaka Samhita Sutrasthana 02/14
Guduchyadi Taila	Anuvasana Basti	Vata Vyadhi	Sharangadhara Samhita Uttara Khanda 05/47-49
Guduchyadi Taila Uttara	Uttara Basti	Yonivyapada	Charaka Samhita Chikitsasthana 30/59-60

Formulation	Type	Indication	Reference
Basti			
Guduchi Taila	Taila Basti / Snehana	Vatarakta, Kuṣṭha	Chakradatta Vatarakta Chikitsa
Guduchyadi Taila	Taila Basti	Vatarakta	Chakradatta Vatarakta Chikitsa

Nasya Karma:-**Table No. 10 Nasya Karma Formulation**

Formulation	Indication	Reference
Anu Taila	Urdhvajatrugata Roga	Ashtanga Hrdaya Su. 29/08
Kiratiktadi Nasya	Galavidradhi	Ashtanga Samgraha Utt. 26/47

Guduchi in Paschat Karma (Rasayana Therapy):-

Guduchi is widely used after Shodhana for rejuvenation and tissue restoration.

Table No. 11 Rasayana Formulations

Formulation	Indication	Reference
Guduchi Yoga	Rasayana	Ashtanga Hrdaya Utt. 39/104
Guduchi Swarasa	Rasayana	Yoga Ratnakara Utt. p.501
Chyavanaprasa	Rasayana	Ashtanga Hrdaya Utt. 39/49
Brahma Rasayana	Rasayana	Charaka Chi. 01/01/58
Haritakyadi Yoga	Rasayana	Charaka Chi. 01/01/77

Guduchi Siddha preparations such as Guduchi Kwatha and Guduchi Siddha Jala are frequently used during Panchakarma protocols. Due to its immunomodulatory and rejuvenative effects, Guduchi helps in restoration of tissue strength and improves recovery after detoxification therapies.²⁵

Therapeutic Uses of Guduchi in Ayurveda:-**Traditionally, Guduchi is indicated in:**

- Jwara (fever)
- Prameha (diabetes mellitus)
- Kamala (jaundice)
- Paṇḍu (anemia)
- Kushtha (skin disorders)
- Amavata
- Rheumatoid arthritis
- Chronic inflammatory disorders
- Metabolic abnormalities
- General weakness and debility²⁶

Important Ayurvedic Formulations:-**Table No. 12 Important Ayurvedic Formulations**

Formulation	Indication
Samshamani Vaṭi	Fever
Guduchyadi Kvatha	Jwara

Amritarishta	General debility
Guduchi Ghana Vati	Immunity enhancement
Amrtottara Kashaya	Amavata

Dosage:-

Table No. 13. The dosage mentioned below is for adults and may vary according to age, disease condition, strength of the patient (Rogi Bala), strength of the disease (Vyadhi Bala) and the physician's discretion.

Preparation	Dose
Churna	3-6 g
Swarasa	10-20 ml
Kwatha	50-100 ml
Ghana Vati	250-500 mg

Safety Profile:-

Guduchi is generally considered safe when administered in therapeutic doses under medical supervision. However, irrational or prolonged use may produce adverse effects in susceptible individuals. Rare reports of liver injury associated with inappropriate use of Guduchi formulations have been documented. Most reported cases were associated with self-medication, excessive consumption or polyherbal formulations. Therefore, proper identification, dosage regulation and physician supervision are essential.²⁷

Possible adverse effects include:

- Gastric irritation
- Constipation
- Mild hypotension

Caution should be exercised in patients taking anti-diabetic medications due to possible additive hypoglycemic effects.

Mode of Action of Guduchi as Shodhana (Cellular Cleansing) and Rasayana (Rejuvenation):-

Guduchi (*Tinospora cordifolia*) is considered unique among Rasayana drugs due to its dual action of Shodhana (biological detoxification) and Rasayana (cellular rejuvenation). At the cellular and molecular level, Guduchi acts through multiple pathways that contribute to detoxification, restoration of cellular homeostasis and regeneration of damaged tissues.

Shodhana Action (Cellular Detoxification and Cleansing):-

In Ayurvedic terms, Shodhana refers to removal of Ama (toxic metabolites) and restoration of physiological balance.

At the cellular level, Guduchi exerts its detoxifying effects through:

- Enhancement of antioxidant defense system: Guduchi increases endogenous antioxidants such as superoxide dismutase (SOD), catalase and glutathione peroxidase, thereby reducing reactive oxygen species (ROS) burden.²⁸
- Reduction of oxidative stress: Polyphenols and diterpenoid lactones neutralize free radicals, preventing lipid peroxidation of cellular membranes.²⁹
- Activation of detoxifying enzymes: It enhances phase I and phase II hepatic detoxification pathways, improving clearance of xenobiotics and metabolic waste products.³⁰
- Anti-inflammatory modulation: Downregulation of NF- κ B signaling pathway reduces pro-inflammatory cytokines (TNF- α , IL-1 β , IL-6), thereby reducing cellular inflammation and toxin-induced damage.³¹
- Autophagy regulation: Experimental studies suggest Guduchi may promote autophagy-mediated clearance of damaged organelles, thereby supporting intracellular "cleaning" and cellular recycling processes.³²

These combined actions correspond to the Ayurvedic concept of Shodhana by removing Ama and restoring Agni at the cellular level.

Rasayana Action (Rejuvenation and Restoration of Cell Signaling):-

Rasayana effect of Guduchi is associated with restoration of tissue integrity, enhancement of cellular longevity and optimization of cell signaling pathways.

- Nrf2 pathway activation: Guduchi activates Nrf2 (nuclear factor erythroid 2–related factor 2), which upregulates antioxidant response elements (ARE), leading to cellular protection and repair.³³
- Mitochondrial protection: It stabilizes mitochondrial membrane potential, improving ATP production and reducing apoptotic signaling.³⁴
- Immunomodulation: It enhances macrophage activation, T-cell proliferation and natural killer (NK) cell activity, restoring immune surveillance and cell communication.³⁵
- Anti-apoptotic regulation: Guduchi modulates Bcl-2/Bax ratio, thereby preventing premature cellular apoptosis and promoting cell survival.³⁶
- Restoration of cytokine balance: It normalizes Th1/Th2 balance, improving systemic immune homeostasis and intercellular signaling.³⁷

These actions collectively represent cellular rejuvenation, repair of damaged signaling networks and restoration of homeostasis, which is the modern correlate of Rasayana therapy.

Integrated Ayurvedic Interpretation:-**From an Ayurvedic perspective, Guduchi acts at the level of:**

- Rasa Dhatu: purification and enhancement of nutrient plasma quality
- Agni: normalization of metabolic and digestive fire
- Srotas: removal of micro-channel obstruction
- Ojas: enhancement of immunity and vitality

Thus, Guduchi simultaneously performs Shodhana (cleansing) and Rasayana (regeneration), making it a unique herb suitable for both Panchakarma support therapy and post-Shodhana rejuvenation.

Discussion:-

Guduchi is one of the few medicinal plants that successfully bridges traditional Ayurvedic wisdom with modern scientific validation. Classical Ayurvedic literature described Guduchi as a potent Rasayana herb capable of improving immunity and protecting the body against diseases. Modern pharmacological studies support these classical claims and highlight its antioxidant, anti-inflammatory, hepatoprotective, anti-diabetic and neuroprotective activities.³⁸

The broad therapeutic spectrum of Guduchi can be attributed to its rich phytochemical profile including alkaloids, diterpenoid lactones, flavonoids and glycosides. Experimental studies have demonstrated promising results in diabetes mellitus, inflammatory disorders, hepatic diseases, neurodegenerative conditions and malignancies.³⁹

Its role in Panchakarma further strengthens its importance in Ayurveda. Guduchi not only assists in detoxification and metabolic correction but also acts as a rejuvenative agent after purification therapies. Due to its Rasayana and immunomodulatory effects, it is increasingly being incorporated into integrative healthcare approaches. Despite extensive experimental evidence, further large-scale clinical studies are still required to establish standardized dosage, long-term safety and disease-specific therapeutic protocols.⁴⁰

Conclusion:-

Guduchi (*Tinospora cordifolia*) is an invaluable medicinal plant possessing remarkable therapeutic, rejuvenative and immunomodulatory properties. Ayurvedic literature extensively praises the herb for its Rasayana action and usefulness in fever, diabetes, inflammatory disorders, skin diseases, neurological conditions and metabolic abnormalities.⁴¹

Modern scientific investigations have validated many of these traditional claims and demonstrated significant antioxidant, anti-inflammatory, anti-diabetic, hepatoprotective, anti-cancer, cardioprotective, neuroprotective and antimicrobial activities.⁴²

Its utility in Panchakarma therapies further highlights its significance in detoxification, rejuvenation and restoration of physiological balance. The integration of Ayurvedic knowledge with modern pharmacological research identifies Guduchi as a promising herbal drug for preventive as well as therapeutic healthcare. Further scientific exploration and clinical validation may strengthen its role in integrative medicine and global healthcare systems.

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