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MEDICINAL USES OF CALLICARPA MACROPHYLLA: A SCIENTIFIC REVIEW

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ABSTRACT:

Callicarpa macrophylla Vahl, commonly known as Beautyberry, is an important medicinal plant used in traditional systems of medicine such as Ayurveda. The plant is known for its diverse pharmacological activities, including anti-inflammatory, antimicrobial, antioxidant, and wound healing properties. This review aims to compile available data on the phytochemical constituents and medicinal uses of Callicarpa macrophylla. Literature was collected from scientific journals, ethnobotanical records, and classical Ayurvedic texts. The plant contains bioactive compounds such as flavonoids, tannins, saponins, and phenolic compounds, which contribute to its therapeutic potential. Although preclinical studies support its traditional uses, further clinical research is required to validate its safety and efficacy.

KEY WORDS:- Callicarpa macrophylla, Priyangu, Phytochemistry, Medicinal Plants, Anti-inflammatory Activity

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INTRODUCTION

Medicinal plants have been a cornerstone of traditional healthcare systems for centuries. Callicarpa macrophylla Vahl, belonging to the family Lamiaceae, is widely distributed in India, Nepal, and Southeast Asia. It is commonly used in Ayurveda for treating inflammation, skin diseases, wounds, and infections [1].

Although Callicarpa macrophylla is not directly mentioned in classical Ayurvedic texts under the same botanical name, it is commonly correlated with Priyangu based on its morphological features and therapeutic properties such as Vrana Ropana (wound healing), Kushta hara (anti-skin disease), and Shotha hara (anti-inflammatory action).

In classical Ayurveda, Priyangu is described in Bhavaprakasha Nighantu as follows:

"प्रियंगुः शीतला रूक्षी कषाया मधुरा लघु। दाहपित्तास्रकुष्ठघ्नी वर्ण्या च व्रणरोपणी॥"

This shloka explains that Priyangu is sheeta (cooling), kashaya (astringent), and laghu (light) in nature and is beneficial in Pitta disorders, skin diseases, burning sensations, and wound healing. These properties closely resemble the traditional and experimentally proven pharmacological activities of Callicarpa macrophyl.

Thus, the correlation of Callicarpa macrophylla with Priyangu provides a classical Ayurvedic basis for its medicinal applications [2].

The plant has gained attention due to its rich phytochemical composition and broad spectrum of biological activities. Despite its traditional importance, there is limited consolidated scientific literature on its pharmacological profile. This study aims to systematically review the medicinal uses, phytochemistry, and pharmacological activities of Callicarpa macrophylla.

Materials and Methods

This study is based on a comprehensive literature review conducted using scientific databases such as PubMed, Google Scholar, and Science Direct and classical Ayurvedic texts. Ethnobotanical surveys. Keywords used included "Callicarpa macrophylla", "medicinal

uses", "phytochemistry", and "pharmacological activities".

Inclusion criteria: Peer-reviewed articles Studies related to phytochemical and pharmacological evaluation Ethnomedicinal reports

Exclusion criteria: Non-scientific sources, articles lacking experimental evidence.

Results

Traditional Uses

In traditional medicine, Callicarpa macrophylla is widely used for:

Wound healing – Leaf paste applied externally to cuts and injuries.

Skin diseases – Used in conditions like eczema and dermatitis

Anti-inflammatory purposes – A decoction is used to reduce swelling and pain.

Fever management – Root and leaf extracts used in febrile conditions.

Treatment of infections – Used for its antimicrobial properties

Rheumatism – Applied locally to relieve joint pain and stiffness

These uses are reported in Ayurvedic texts and ethnobotanical studies, indicating their importance in primary healthcare [1,3].

1. **Phytochemical Composition**

Phytochemical investigations of Callicarpa macrophylla reveal the presence of flavonoids (quercetin, luteolin), tannins, saponins, phenolic compounds, terpenoids and glycosides. These compounds are responsible for the plant's medicinal properties, such as antioxidant and anti-inflammatory effects [3, 4].

2. **Pharmacological Activities**

Anti-inflammatory Activity

Extracts of Callicarpa macrophylla have shown significant inhibition of inflammation in experimental animal models, supporting its traditional use in inflammatory conditions [5].

Antimicrobial Activity

The plant exhibits antibacterial and antifungal activity against several pathogenic microorganisms, making it useful in treating infections [6].

Wound Healing Activity

Topical application of leaf extracts promotes wound contraction and enhances tissue regeneration, validating its traditional application in wound care [7].

Analgesic Activity

Studies indicate mild to moderate analgesic effects, suggesting its role in pain management [8].

Antioxidant Activity

The presence of phenolic compounds contributes to strong free radical scavenging activity, reducing oxidative stress [4].

DISCUSSION

The pharmacological activities of Callicarpa macrophylla are closely linked to its phytochemical constituents. Flavonoids and phenolic compounds are known for their antioxidant and anti-inflammatory properties, while tannins contribute to antimicrobial and wound healing effects.

Traditional uses of the plant are largely supported by modern experimental studies. However, most research is limited to in vitro and animal models. There is a lack of clinical trials to confirm its therapeutic efficacy in humans.

Standardisation of extracts, identification of active compounds, and toxicity studies are essential for developing safe and effective formulations. Future research should focus on clinical validation and dosage optimisation.

CONCLUSION

Callicarpa macrophylla is a valuable medicinal plant with multiple pharmacological activities, including anti-inflammatory, antimicrobial, antioxidant, and wound healing effects. Its traditional uses are supported by preliminary scientific evidence. However, further clinical research is required to establish its safety, efficacy, and potential for integration into modern medicine.

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