



A LITERATURE REVIEW ON MADHUR RASA IN SUGAR BASED DOSAGE FORMS (LEHA/AVALEHA, KHANDAPAKA, LOZENGES) AND ITS IMPLICATIONS FOR DIABETES MELLITUS

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ABSTRACT This review explores the pharmacological, classical, and practical significance of Madhur Rasa (sweeteners) in Ayurvedic semisolid dosage forms such as Avaleha and Khandapaka [3,4], and its modern adaptations like lozenges. Classical texts highlight the nourishing [2,8], strengthening, and rejuvenating effects of Madhur Rasa. This literature review analyzes the evolution of sugar based semisolid formulations and the dual nature of sweet carriers in both therapeutic efficacy and glycemic management. The incorporation of modern technologies allows for enhanced stability, palatability, and dose precision, making Ayurvedic formulations more acceptable in mainstream practice. However, in the context of contemporary health issues such as diabetes mellitus, implications of these dosage forms require further research.

KEYWORDS : Madhur Rasa, Avaleha, Khandapaka, Lozenges, Diabetes mellitus , Ayurveda, Semisolid Dosage Forms

INTRODUCTION

Madhur Rasa (sweet taste) is one of the six Rasas described in Ayurvedic pharmacology and is considered the most balancing and nourishing [2,8]. It plays a crucial role in growth, strength, and immunity, and is inherently present in semisolid dosage forms such as Avaleha and Khandapaka [3,4]. These formulations have evolved into user-friendly formats like lozenges and herbal candies. The therapeutic aim is preserved while improving palatability and patient adherence [4,9]. However, with the growing incidence of metabolic syndrome and diabetes, the use of sugar-based carriers poses clinical challenges [5], which this article also examines. From an Ayurvedic standpoint, Madhur Rasa is considered the most nourishing [2,8] (Brimhana), strength-giving (Balya), and life-sustaining (Jeevaniya) among the six tastes. According to Vagbhata:

“सर्वरसानां पुनः मधुर एव श्रेष्ठतमः। [8]”

– Ashtanga Hridaya, Sutrasthana 9/16

Madhur Rasa nourishes all Dhatus and maintains Ojas. Its effects are predominantly Kapha-vardhaka and Pitta-shamaka, but in moderation it is also Vatashamaka. Therefore, it is widely used in Rasayana therapy, pediatric formulations, and post-illness recovery.

Avaleha

Khandapaka

Lozenges

Nanoformulations

Figure 1: Classical Dosage Form Transformation



Figure 2: Effect Of Madhur Rasa On Dhatu

METHODS

A comprehensive literature review was conducted from Ayurvedic classical texts such as Charaka Samhita, Sharangadhara Samhita, and Bhavaprakasha Nighantu [1,2,7]. Search databases included AYUSH Research Portal, PubMed, and Google Scholar [6]. Inclusion criteria were based on relevance to Madhur Rasa, Leha Kalpana, patient compliance, and the pharmacological profile of sweeteners [4,5]. Textual cross-referencing was used to trace Ayurvedic descriptions with modern scientific perspectives.

RESULTS

Classical texts describe Madhur Rasa as:

“मधुरो वृष्यः स्तैर्यकृच्छिशुकवल्प्रदः। [2]”

(Charaka Samhita, Sutra Sthana 26/43)

This Rasa provides stability, fertility, nourishment, and longevity. It is heavily used in Avaleha preparations such as Chyawanprash and Vasavaleha [3,4], where sugar, jaggery, or honey serve both as a carrier and an active principle. Table 1 lists the major sources of Madhur Rasa mentioned in classical texts.

Table 1: Classical Sources Of Madhur Rasa

Source	Ayurvedic Name	Classical Reference
Sugar	Sharkara	Charaka Samhita, Sutra 27
Jaggery	Guda	Sushruta Samhita, Sutra 45
Honey	Madhu	Sharangadhara Samhita, Madhyama 2
Milk	Ksheera	Charaka Samhita, Sutra 27
Ghee	Ghrita	Charaka Samhita, Sutra 27

Lozenges offer a controlled delivery of herbs via mucosal absorption and have better patient acceptability. Khandapaka is easier to package and store than Avaleha [4,9]. However, the presence of sweet carriers in these formulations necessitates attention when prescribing to diabetic patients.

DISCUSSION

The nourishing properties of Madhur Rasa make it ideal for Rasayana, Balya, and Vrushya formulations. However, sugar-rich bases may not be ideal in patients with Madhumeha (diabetes mellitus). Excessive intake of sugar-based Avalehas can aggravate Kapha and Meda, increasing risk of insulin resistance [5,11]. Modern studies corroborate this, linking excessive sugar intake to inflammation and oxidative stress [5]. Alternate bases such as stevia, isomalt, or natural honey in controlled quantities are being explored [9,10]. Table 2 summarizes the comparative features of Avaleha, Khandapaka, and Lozenges [4,9,10].

Table 2: Comparison Of Semisolid Dosage Forms

Parameter	Avaleha	Khandapaka	Lozenges
Base	Sugar/ jaggery/ honey	Jaggery/sugar	Sugar/ glucose/isomalt
Shelf life	3 years	3 years	2-3 years[ip]

Palatability	Sticky, sweet	Granular, mild	Pleasant, flavored
Patient Compliance	Moderate	High	Very high
Suitability for Diabetics	Poor	Moderate	Good (if sugar-free)

CONCLUSION

Madhur Rasa is indispensable in Ayurveda for its therapeutic attributes [2,7], but modern clinical realities such as diabetes necessitate reformulations [5,11]. Modified dosage forms like lozenges and Khandapaka enhance patient convenience, but simultaneously addressing glycemic risks when sweet carriers are optimized. Further studies are essential to evaluate non-glycemic sweeteners in Ayurvedic formulations and its transformed dosage forms [10,11].

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