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An Innovative Pharmaceutico-Analytical Insights of *Laaja* Lozenges - Soft and Hard Candy in *Pittaja Kasa*

Author: Arpitha M S¹

Co Authors: Prasanthi K² and Dinesh Kumar Mishra³

¹⁻³Department of Rasashastra and Bhaishajya Kalpana, A.L.N Rao Memorial Ayurvedic Medical College and PG centre Koppa, India

ABSTRACT

Lozenges are solid dosage forms that dissolves slowly in the mouth to deliver active ingredients, providing localized relief for sore throats and immediate action. *Laaja* Lozenges are adapted from *churna* consumed along with *madhu ghrita* as a *lehya*, as per *Charaka samhita Kasa Chikitsa*. The ingredients in these lozenges possess medicinal properties and are easily adaptable for the common people. The use of *Laaja* Lozenges is particularly beneficial in treating *Kasa* (cough). Due to repeated *vegās* in cough, individuals may experience fatigue, exertion, and a decline in overall health. Therefore, it is essential to use remedies that replenish or enhance general well-being along with subsiding of *kasa*. *Laaja* Lozenges contain *kasahara dravya* (ingredients that alleviate cough) and *shramahara dravya* (ingredients that reduce fatigue) which helps to overcome the symptoms of *Kasa*. Analytical studies, includes phytochemical analysis, basic nutritional assessment is done and hypothetically analysed its efficacy in addressing *Pittaja Kasa*

Key Words Innovative, *Laaja*, lozenges, *Pittaja kasa*, *Lehya*

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INTRODUCTION

In recent years, advancement in pharmaceutical science have emphasized the development of innovative dosage forms aimed at enhancing patient compliance, minimizing side effects, and achieving efficient drug delivery¹. Many Ayurvedic formulation, have shown potential in restoring the balance of dosha and alleviating symptoms.

Acharya Charaka mentioned the combination of *Laaja*, *Amalaki*, *Vamshalochana*, *Pippali*, and

Draksha churnas mixed with *Madhu*, *Ghrita*, administered as a *lehya* (lickable paste), for *Pittaja Kasa* in the *Kasa Chikitsa*². This preparation is adapted into soft and hard lozenges, offering precise dosages, improved portability, and enhanced patient compliance.

लाजास्तृच्छद्येतीसारमेहमेदः कफच्छिदः ।

कासपित्तोपशमना दीपना लघवो हिमाः ॥ [A.H 6/ 36]

Laaja is a Parched rice which aids digestion, increase appetite, provides strength and cures the *kasa*. *Laaja* Lozenges are designed to balance

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aggravated *Pitta dosha*, addressing inflammation, cough, and irritation in the respiratory tract.

Acharya Charaka defines *Kasa* as - Release of obstructed Vayu with the production of abnormal sound is called as *Kasa*. *Urodhoomayanam*, *Trishna*, *daha*, *aruchi*, *moorcha* are the symptoms of *pittaja kasa*.

MATERIALS AND METHODS

Laaja lozenges are modified from *churna* along with *madhu*, *ghrita* as a *lehya* as per the Charaka Samhita. Ingredients are- *laaja*, *amalaki*,

draksha, *vamshalochana*, *pippali*, *khanda sharkara*. The quantity of each drug as mentioned in Table No 1 was taken. Pharmaceutical preparation is done in the pharmacy of A L N Rao Memorial Ayurvedic Medical College, Koppa.

I. Soft candy lozenges

Soft candy was prepared as mentioned in Table No 2

II. Hard candy lozenges

The Preparation of Hardy Candy as shown in Table No 3.

Table 1 Ingredients and Quantity

Sl.No	Ingredients	Botanical name	Quantity	
			Hard candy	Soft candy
1	<i>Laaja</i>	<i>Oryza sativa</i>	5gms	10gms
2	<i>Amalaki</i>	<i>Embelica officinalis</i>	5gms	30gms
3	<i>Draksha</i>	<i>Vitis vinifera</i>	5gms	30gms
4	<i>Pippali</i>	<i>Piper longum</i>	5gms	10gms
5	<i>Vamshalochan</i>	<i>Bambusa arundinaeae</i>	5gms	10gms
6	<i>Khanda sharkara</i>	-	50gm	120gm
7	Water	-	200ml	480ml

Table 2 Method of Preparation of Soft candy

Steps	Description
Preparation of Powders	<i>Amalaki</i> was made into coarse powder, remaining drugs are made into fine powder and quantity was as mentioned in Table No 1.
Soaking <i>Draksha</i>	<i>Draksha</i> was soaked in water for a 45 minutes.
Preparing <i>Kashaya</i>	<i>Kashaya</i> was prepared by boiling <i>Amalaki</i> and soaked <i>Draksha</i> together after reducing to 1/4 th then it is filtered.
Adding <i>Khanda Sharkara</i>	<i>Khanda Sharkara</i> was added to the <i>Kashaya</i> and heated until <i>Paka Lakshana</i> appeared (2-3 threads).
Adding <i>Ghrita</i>	<i>Ghrita</i> was added once the syrup reaches the desired consistency, then removed from heat.
Mixing Remaining Drugs	Remaining fine powders are added to the mixture while continuously stirring.
Cooling and Adding <i>Madhu</i>	After cooling, <i>Madhu</i> was added to the mixture.
Moulding	Final mixture poured into moulds and allowed to set as shown in Figure 8

RESULTS AND DISCUSSION

Lozenges are an ideal dosage form for managing *Pittaja Kasa*. Because of gag reflex in cough, lozenges makes soothing effect on the laryngopharynx. Their slow dissolution in the

mouth provides prolonged exposure to the active herbal ingredients, enhancing therapeutic action.

The preparation of Laaja Lozenges aligns with traditional Ayurvedic methods, ensuring adherence to classical wisdom without the use of chemical preservatives or synthetic additives.

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Table 3 Method of Preparation of Hard Candy

Steps	Description
Preparation of Powders	All ingredients are made into coarse powder form.
Preparing <i>Kashaya</i>	All ingredients are boiled together to prepare the <i>Kashaya</i> .
Adding <i>Khanda Sharkara</i>	<i>Khanda Sharkara</i> was added to the <i>Kashaya</i> and heat the mixture.
Achieving <i>Paka Lakshana</i>	Heating continued until <i>Paka Lakshana</i> appeared , i.e.,when 2-3 threads form in the syrup.
Adding <i>Ghrita</i>	<i>Ghrita</i> was added to the mixture and taken off from the fire.
Cooling	The mixture was allowed to cool down.
Adding <i>Madhu</i>	Once cooled, <i>Madhu</i> was added to the mixture.
Moulding	final mixture was poured into moulds to form hard lozenges as it is shown in Figure 7

Kashaya (decoction) preparation and *Khanda Sharkara* (crystallized sugar), *Ghrita*, herbal powders and incorporation of *Madhu* (honey), consecutively maintain the authenticity and safety of the formulation.

the organoleptic characteristics of hard and soft lozenges based on Table No. 4:

1. Appearance:
 - a. Hard lozenges exhibit a smooth surface.
 - b. Soft lozenges appear greasy.
2. Color:
 - a. Hard lozenges are greyish white in color.
 - b. Soft lozenges are dark brown.
3. Odour:
 - a. Both hard and soft lozenges possess a characteristic odour.
4. Taste:
 - a. Both types of lozenges produce a tingling sensation on the tongue.
5. Touch:
 - a. The tactile feel of both hard and soft lozenges is smooth.

Laaja lozenges indicated in *pittaja kasa*, its efficacy can be proven based on:

Rasapanchaka and Doshagnata of ingredients

- **Cooling Effect:** Ingredients like *Amalaki*, *Laaja*, *Draksha*, and *Vamshalochana* have *Sheeta Veerya* (cooling potency), which helps in soothing the burning sensation and inflammation associated with *Pittaja Kasa*.

Table 4 Organoleptic characteristics

SI. No	Organoleptic	Hard lozenges	Soft lozenges
1.	Appearance	Smooth	greasy
2.	Color	Greyish white	Dark brown
3.	Odour	Characteristic	Characteristic
4.	Taste	Tingling	tingling
5.	Touch	Smooth	smooth

- **Pitta Pacification:** The *Madhura Rasa* (sweet taste) and *Sheeta Guna* (cooling quality) of these ingredients effectively balance the aggravated *Pitta dosha*.
- **Respiratory Support:** *Vamshalochana* is known for its soothing effect on the respiratory tract, while *Pippali* enhances the bioavailability of other herbs and supports respiratory health.
- **Rejuvenation:** *Amalaki* acts as a *Rasayana*, promoting overall health and aiding recovery from cough and associated weakness.

Based on therapeutic effect

- **Pitta Balancing:** The combination of cooling and sweet ingredients like *Amalaki*, *Laaja*, *Vamshalochana*, and *Draksha* effectively

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pacifies Pitta dosha, addressing the root cause of *Pittaja Kasa*.

- **Respiratory Relief:** *Vamshalochana* and *Pippali* provide targeted support for the respiratory system, reducing irritation and promoting clear airways.
- **Digestive Harmony:** *Laaja* ensures the formulation is light and easy to digest, preventing further aggravation of Pitta.
- **Synergistic Effect:** *Pippali* enhances the bioavailability of the other herbs, ensuring their therapeutic properties are fully utilized.

Analytical values:

The analytical values of hard and soft candy provide insights into their potential effects on *Pittaja Kasa*.

- **Energy Content:** Soft candy has a higher energy value (460.28 kcal) compared to hard candy (361.24 kcal). This could make soft candy more suitable for providing quick energy, which might be beneficial in cases of weakness or fatigue associated with *Pittaja Kasa*.
- **Carbohydrates and Sugars:** Hard candy has a lower sugar content (39.13%) compared to soft candy (47.31%). Excessive sugar intake can

aggravate Pitta, so hard candy might be a better choice for managing *Pittaja Kasa* symptoms.

- **Fat Content:** Soft candy contains significantly more fat (16.92%) than hard candy (1.96%). Fat can have a soothing effect on the throat and may help alleviate burning sensations, a common symptom of *Pittaja Kasa*.
- **Protein and Minerals:** Hard candy has slightly higher protein (5.32%) and mineral content (3.4%) compared to soft candy (4.63% protein and 3.96% minerals). These nutrients can support overall health and recovery.
- **Moisture Content:** Hard candy has a higher moisture content (8.74%) than soft candy (2.15%). Moisture can help soothe dryness in the throat, which is often associated with *Pittaja Kasa*. As mentioned in Table No 5
- **Alkaloids, Flavonoids, and Tannins:** As shown in Table No 6. Both candies contain trace amounts of alkaloids, flavonoids, and tannins, which may have mild therapeutic effects. Hard candy has slightly higher levels of these compounds, which could contribute to its potential benefits in managing *Pittaja Kasa*.

Table 5 Basic Nutritional Analysis

Sl.No	Parameters	Hard lozenges	Soft Lozenges
1.	Energy	361.24	460.28
2.	Total carbohydrate(%)	80.58	72.37
3.	Total sugar(%)	39.13	47.31
4.	Total fat (%)	1.96	16.92
5.	Total Protein (%)	5.32	4.63
6.	Total Mineral(%)	3.4	3.96
7.	Moisture(%)	8.74	2.15

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Table 6 Phytochemical analysis

Sl.No	Parameters	Hard lozenges	Soft lozenges
1.	Alkaloids (mg/g)	0.012	0.009
2.	Total phenolics(mg/g)	Absent	Absent
3.	Total flavonoids(mg/g)	0.0034	0.001
4.	Tannins(mg/g)	0.006	Absent
5.	Saponins (mg/g)	Absent	Absent
6.	Glycosides (mg/g)	Absent	Absent



Figure 1 Amalaki



Figure 2 Laaja



Figure 3 Vamshalochana



Figure 4 Pippali



Figure 5 Khanda sharkara



Figure 6 Draksha



Figure 7 Hard Candy Lozenges



Figure 8 Soft Candy Lozenges

CONCLUSION

- Laaja lozenge are enriched with carbohydrate, minerals which is helpful in *shrama hara*, *Kasahara* and *bala vrudhikaraka*.
- The drugs which are present are mainly acts over *pitta dosha* and also *vata*.
- Based on *samprapti*, *amlaki*, *draksha*, *pippali*, *vamshalochana*, *draksha* and *sharkara* are beneficial in *pranavahasrotas* and *rasavahasrotas* which clears the obstruction.

- Laaja lozenges are beneficial in prevention, treatment and nutrition supplements.
- Further it can be focused on clinical trials, standardization of the product.

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