

Review on Lozenges : Curcuma Longa

Mr. Gundre Abhay¹, Mr. Lavate Siddharam², Mr. Gaikwad Rohit³,
Khawle Balaji⁴, Dr. Lonikar N. B.⁵

B Pharmacy

Latur College of Pharmacy, Latur, Maharashtra, India

Abstract: Lozenges are one of the widely used solid dosage forms. They contain medication and are designed to be placed in the mouth or throat. Lollipops have been around since the 20th century and are still produced commercially today. Although lozenges have many advantages as a medicine, they also have some disadvantages. Tablets as a dosage form can be used to deliver drugs via buccal, labial, gingival, and sublingual routes. It may also include several medications to treat chronic conditions.

The advantage of medicated lozenges is that they increase the residence time of the formulation in the mouth, increasing bioavailability, reducing gastric irritation, and bypassing first-pass metabolism. In dosage form, lozenges are well tolerated not only by children, but also by adults. There are different types of commercially available candy, including compressed, hard, and soft, as well as preparation methods and ingredients used in preparation.

The main ingredient of turmeric is turmeric, which contains three types of curcumin and has various physiological and therapeutic effects. Turmeric spice (*curcuma longa*).

Keywords: candy, lozenges, lozenges, mold, curcumin, anti-inflammatory, pharmacology.

I. INTRODUCTION

- Lozenges are solid, single dose preparation intended to be sucked to obtain, usually, a local effect in the oral cavity and the throat. They contain one or more active substances, usually in a flavored and sweetened base, and are intended to dissolve or disintegrate slowly in mouth when sucked. [1]
- The word "Lozenge" is derived from French word "Losenge" which means a diamond shaped geometry having four equal sides. Lozenges and pastilles have been developed since 20th century in pharmacy and is still under commercial production(1).
- Oral dosage forms vary and have advantages over other dosage forms. It is economical and safe for patients. This is the most natural and easiest way to administer medication. It requires no maintenance, allowing patients to cope without assistance. Because the onset of action is delayed, toxicity is delayed and recovery is easier compared to other agents. Suitable for all patients regardless of age. Oral dosage forms also have disadvantages. If the patient suffers from chronic vomiting, this is not the best option. It is not the best choice for uncooperative patients such as children and infants.

Lozenges are solid oral preparations designed to dissolve in the mouth or throat. These products may contain one or more drugs in a flavored, sweet base and are intended to treat local irritations or infections of the mouth or throat and may also be used for systemic drug absorption (2). Lozenges dissolve slowly in the mouth or throat, making them the preferred delivery method, especially for medications that relieve sore throat and cold symptoms.

The name "lozenge" can be applied to a compressed lozenge, but the terms "lozenge" and "lozenge" are used interchangeably. Lozenges are designed to be taken by mouth or throat and contain one or more medications. It is dissolved or dispersed in a sweetened base. The lozenges have a local effect in specific areas of the oral cavity and some systemic effects, with the result that the drug circulates in the bloodstream and exerts its pharmacological effects. Some vitamins C and D lozenges and multivitamin Lozenge tablets contains B-Complex and lozenges containing Nicotine

smoking cessation. More recently it is proved that Single or multiple ingredients lozenges may be formulated for chronic ill patient, making a patient's friendly lozenge dosage form.(3)Lozenges also include analgesics, anesthetics, antimicrobials, antiseptics, antitussives, aromatics, astringents, corticosteroids, decongestants, and demulcents. Sore

throats, sores, and other irritations in the mouth and pharynx are common ailments that will cause pain. While there are a variety of pharmaceuticals available to relieve pain, both prescription and over-the-counter, these pharmaceuticals can be difficult to prescribe to patients who are reluctant or unable to take traditional oral drugs.

many oral drugs have a considerable time interval, often up to twenty minutes, between ingestion and the onset of a therapeutic effect. Because when a drug is swallowed, it must be absorbed from the digestive system into the bloodstream (4). Candy is a solid preparation containing one or more drugs designed to dissolve or break down slowly in the mouth, usually in a flavored sweetener base. These can be manufactured by molding (gelatin and/or fused sucrose and sorbitol base) or compressing sugar-based tablets. Molded lozenges are sometimes called lozenges, and compressed lozenges are sometimes called trochestro (5).

Benefits (1,4,5)

- Can be prescribed for patients with difficulties.
- Swallowing.
- Easy to use for elderly and pediatric groups.
- Prolongs the time the drug stays in the oral cavity
- Specific effects.
- Easy to prepare with minimal equipment.
- And time.
- May reduce stomach irritation. • This may enhance onset of action.
- Can bypass first-pass metabolism. Q
- Improved patient compliance with treatment regimens.
- Easy to use for both pediatric and geriatric patients.
- Increased drug contact time.
- Long-term action of the drug.
- Avoid first-pass metabolism of the drug.
- No water is required for oral administration.

Disadvantages (1,4,5,6,8)

- Some medications may be incompatible with aldehyde lozenges.
For example base; Benzocaine.
 - Children over 6 years old can use candy. safety.
 - Non-universal distribution of drugs in saliva for topical treatment.
 - Hard candies have coarser particles.
 - Accidental ingestion of the entire formulation. • Drugs may enter the stomach.
- Non-invasive methods, e.g. parenteral methods.
- Heat stable drugs are suitable.
- Dishes with minimal bitterness are suitable.
- Non-universal distribution of drugs in saliva for topical treatment.
 - Drugs may enter the stomach through the mouth with saliva.

Classification of lozenges:

1) Depending on the place of action all. Local effect e.g. Preservative, decongestant. rain. Systemic effects e.g. Vitamins, nicotisaliv

2) Depending on the texture and composition - all. Chew-based or caramel-based therapeutic lozenges rain. compressed candy

Soft lozenge

d. Hard lollipops for lozenges

(a) Chewable or caramel-based medicated lozenges:

This is a formulation of the drug mixed into a candy base that is chewed without dissolving in the mouth. These candies often have a strong fruity flavor and may be slightly sour to mask the spicy taste of glycerin. Medicinal caramel candies are produced by cooling the caramel base to 120°C. The whipping agent is then added at a temperature below 105°C. The drug is then added in the 95-105°C range. The dye is dispersed in a humidifier and added to the above mass



Fig:- caramel -based medicated lozenges

at a temperature of approximately 90°C. The seed crystals and flavorings are then added at temperatures below 85°C and the lubricant is added at temperatures above 80°C. These lozenges have a fruity and slightly sour taste that masks the spicy taste of the medicine. The candy is based on sugar and corn syrup in two ratios: 50:50 or 75:25.

(b) Compressed candy: - (1, 3)

Compressed lozenges are produced by direct compression or wet granulation. Heat-labile drugs can be manufactured in compressed candy form. The granulation method used to make lozenges is similar to the method used to make traditional compressed tablets.

Tablets are made using heavy compression equipment to make the tablets harder than normal because it is desirable for the lozenges to dissolve slowly in the mouth. They typically have a flat surface and range in size, weight, hardness, and erosion time of 5/8-3/4 inches, 1.5-4 grams, and 30-50 kg within 2 minutes and 5-10 minutes, respectively.



Fig- compressed candy

(c) soft candy (1,3,5)

Soft candies have become popular because they are quick to prepare and can be used with a variety of medications. The base usually consists of a mixture of various polyethylene glycols, acacia or similar substances. The improvement in current use is it's easy to use, easy to carry, easy to store (at room temperature), and generally tastes good. Polyethylene glycol candies are hygroscopic and may soften when exposed to high temperatures.



d) hard candy (1,3,4)

Hard candies are created by dissolving the desired amount of sugar to create a candy base, other carbohydrates (if any), and then boiling them by adding one-third the amount of water in the candy maker to create an amorphous, non-crystalline glassy state. . At a temperature of approximately 110°C.

Amorphous (non-crystalline) or glassy hard candy is a mixture of sugar and other carbohydrates. It may even be considered a solid sugar syrup. The moisture content of the lollipop should be within the range of 0.5-1.5% and the weight should be within the range of 1.5-4.5g.



Fig :-hard candy lozenges

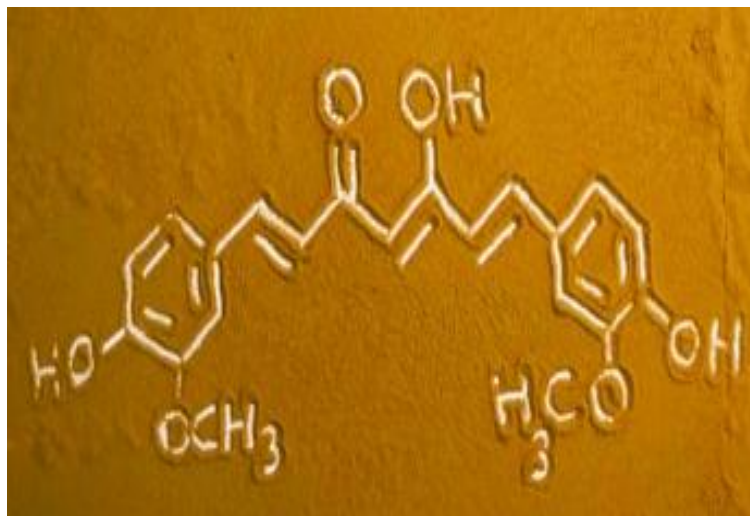
Formulation of medicated lozenges:-(I)

S.No	Ingredients	Examples	Role
1.	Candy base Sugar Sugar free vehicles	Dextrose, sucrose, maltose, lactose. Mannitol, sorbitol, PEG 600 & 800.	These are the used as sweetening agent and impart the taste masking properties.
2.	Fillers	Di calcium phosphate, calcium sulfate, calcium carbonate, lactose, microcrystalline cellulose.	These are the used to Improve the flowability,
3.	Lubricants	Magnesium stearate, calcium stearate, stearic acid and PEG, vegetable oils and fats.	These are the used to avoid sticking of candy to the teeth.
4.	Binders	Acacia, corn syrup, sugar syrup, polyvinylpyrrolidone, gelatin, tragacanth, and methylcellulose.	These are the used to hold the particles.
5.	Coloring agents	Water soluble and lakolene dyes, FD & C colors, orange color paste, red color cubes, etc.	These are the used to inhance appearance and organoleptic properties of dosage form.
6.	Flavorings agent	Menthol, eucalyptus oil, spearmint, cherry flavor, etc.	These are the used to give a taste.
7.	Whipping agent	Milk protein, egg albumin, gelatin, xanthan gum, starch, pectin, algin and carrageenan.	These are the used in toffee-based confection.
8.	Humectants	Glycerin, propylene glycol and sorbitol.	They improve chew mouthfeel properties.

Fig:- matorial of lozenges and their function

TURMERIC:- (7)

- Curcumin structure:-
- Synonyms of Curcuma Longa:-
- Sanskrit: ameshta
- English: Indiansaffron
- Hindi: haldi
- Marathi: Halad



Biological Source: - A plant known as *Curcuma longa* Linn (*C. domestica*), belonging to the Zingiberaceae family, produces both dried and fresh rhizomes, which are used to prepare turmeric [4]. Contains at least 1.5% curcumin

Microscopic properties: -

Colour: tan

Odor: -Characteristics

Taste: - Slightly bitter

Chemical composition:-

Content of essential oil, resin, giniiberene, borneol, caprylic acid, etc.

Growing: -

Climate: Turmeric requires temperatures between 20°C and 30°C and significant annual rainfall for optimal growth. Some plants have long oblong leaves and can reach a height of 1 m.

Soil: It is best to grow turmeric in fertile, loose soil. Suitable soils have a slightly higher sand content. It is grown in a variety of soil types, from loam to light black soil, sandy loam and red soil.

Harvest: - Harvest season generally lasts from January to March or April. Early and medium varieties mature at 7-8 months and 8-9 months respectively. The crop can be harvested when the leaves begin to dry and turn yellow.

Irrigation: - Medium heavy soils require 15 to 25 irrigations and light textured red soils require 35 to 40 irrigations.

Medicinal uses of curcumin:

- 1) Turmeric promotes a stable mood.
- 2) Curcumin promotes wound healing.
- 3) The turmeric group was found to be more effective in relieving joint pain.
- 4) Helps control diabetes.
- 5) Helps prevent arthritis. 6) Promotes weight loss.
- 7) Cancer prevention.
- 8) Improves digestion.
- 9) It helps heal wounds.

Parts of plant:-



Fig , Turmeric Leaves



Fig:-Turmeric seed



Fig:-Turmeric flower



Fig_-Turmeric fruit

Plan of work:-
Literature survey
Selection of drug
Analysis of drug
Preparation of turmeric compressed lozenges
Evaluation of prepared lozenges
Stability study
Result discussion

II. CONCLUSION

In the current study, sweet loratadine lozenges were prepared for the treatment of sore throat. Possible interactions between drugs and excipients were determined using FTIR spectroscopy, which showed no interactions between selected drugs and excipients.

Cur cumin has attracted worldwide attention due to its numerous health benefits. Antioxidant and anti-inflammatory processes appear to play an important role in providing these benefits. Combining cur cumin with a product like Papering that significantly increases its bioavailability is the best way to reap these benefits. Turmeric has been used to improve food preservation and palatability and to improve storage conditions.

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