



Orodispersible Tablets: Enhancing Patient Care through Innovative Drug Delivery: Review Article

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ABSTRACT

Oral medicine is still the most popular way to take medicine. New technology has created fast-dissolving tablets (ODTs) that make taking medicine easier and more convenient. ODTs are solid dosage forms that quickly disintegrate or dissolve in the mouth without water or chewing. They're especially beneficial for children and seniors who struggle with swallowing traditional tablets and capsules. This review is a helpful guide to understanding the pros and cons of ODTs, and how they are made, used, marketed orally disintegrating tablet (ODTs) their manufacturers and therapeutic uses. Swallowing tablets and capsules can be difficult for some people, a problem known as dysphagia. ODTs provide fast action and easy administration, making them a convenient option for patients who affected in swallowing difficulties. ODTs offer improved patient compliance, enhanced bioavailability, and rapid onset of action. This review aims to provide a comprehensive overview of ODTs, including their formulation, manufacturing, advantages, and therapeutic applications, highlighting their potential benefits for patients with dysphagia and other swallowing disorders.

KEY WORDS: Orodispersible Tablets, Dysphagia, Enhanced bioavailability, Therapeutic applications

INTRODUCTION :

- Oral drug delivery is the most popular and preferred method of administering medications, suitable for both solid and liquid formulations.
- Tablets and capsules are the most widely used solid dosage forms, yet many people struggle to swallow them, a condition known as dysphagia.
- Swallowing issue affects patients of all ages, but it's more prevalent among pediatric and geriatric patients.
- Other names for orodispersible tablets include orally disintegrating tablets, mouth-dissolving tablets, rapid-dissolving tablets, fast-disintegrating tablets, and fast-dissolving tablets.
- Orodispersible tablets are defined as uncoated tablets designed to be placed in the mouth, where they dissolve quickly, typically within 3 minutes, before being swallowed.
- Orodispersible tablets are solid single-unit dosage forms similar to conventional tablets, but contain superdisintegrants that enable them to dissolve rapidly in the mouth within a minute, aided by saliva, making swallowing effortless.
- When administered orally, orodispersible dosage forms rapidly disintegrate, releasing the active pharmaceutical ingredient, which then dissolves or disperses in saliva. As the saliva is swallowed, the drug may be absorbed through the pharynx, oesophagus, or other segments of the gastrointestinal tract. Consequently, the bioavailability of the drug is substantially enhanced compared to conventional tablet formulations.
- By avoiding first-pass metabolism, orodispersible tablets enable drugs to maintain their potency. As a result, this drug delivery system is becoming increasingly popular due to its numerous advantages.

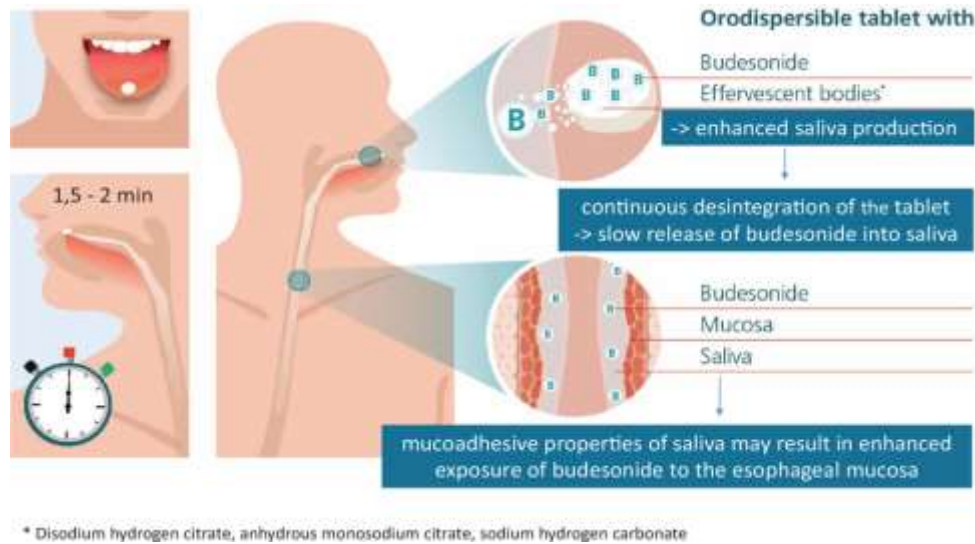


Figure 1 : Diagrammatic view of Orodispersible Tablet

ADVANTAGE :

- Easy Administration
- Chewing not necessary
- Increase bio-availability
- Reduce chance of first pass metabolism
- Promote rapid onset of action
- Promote rapid drug delivery
- No need for water intake
- Does not require specialized packaging and it can be packed in standard blisters

DISADVANTAGE :

- Hygroscopic Nature:
- Requires Repeated Administration
- Risk of Rapid Drug Release
- Needs Protective Packaging for Stability and Safety
- Food and Drink Intake May Require Special Consideration

ideal properties of a drug for the development of orodispersable tablets**Physical and Chemical Properties**

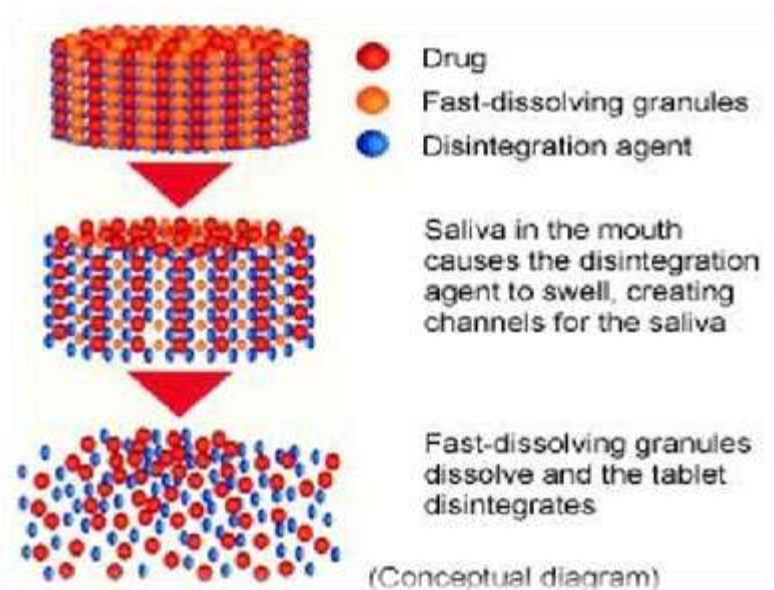
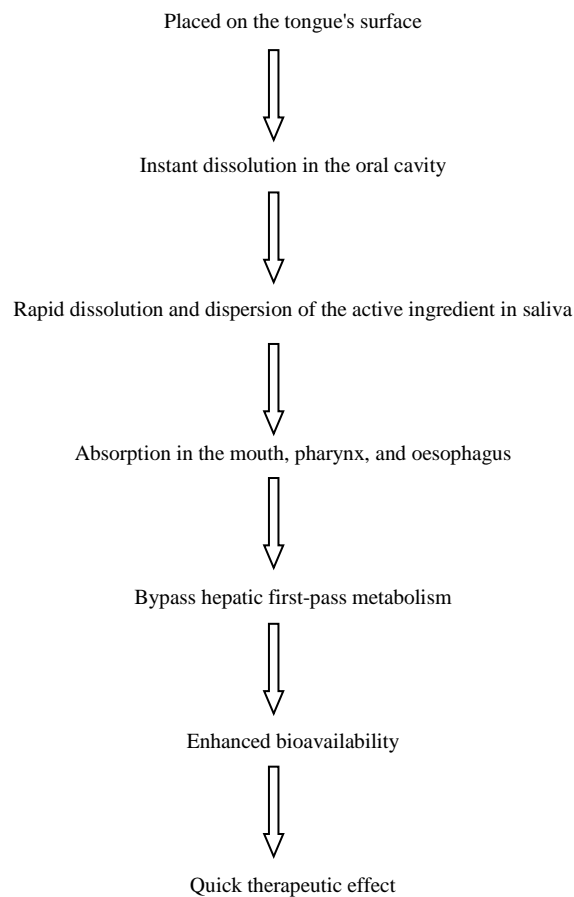
1. High aqueous solubility: Allows for rapid dissolution in the mouth.
2. Molecular weight: Should be sufficiently low to facilitate permeability and absorption.
3. Partition coefficient: Should be high to ensure good absorption and bioavailability.

Pharmacological Characteristics

1. Rapid onset of action: Provides quick relief from symptoms.
2. Short elimination half-life: Minimizes side effects and ensures rapid elimination.
3. Low dose requirement: Reduces the risk of side effects and improves patient compliance.

Additional Considerations

1. Stability: Should be stable to ensure effectiveness and safety.
2. Low hygroscopicity: Minimizes the risk of moisture absorption and ensures stability.
3. Acceptable taste and odor: Enhances patient compliance and acceptability.

MECHANISM OF ORAL DISPERSIBLE TABLET:

Marketed Orally Disintegrating Tablets (ODTs), Their Manufacturers and Therapeutic uses

SI NO	BRAND NAME	GENERIC NAME	MANUFACTURED BY COMPANY	THERAPEUTIC USES
1	Zofran ODT	Ondansetron	GlaxoSmithKline	Antiemetics
2	Claritin ODT	Loratadine	Bayer	Antihistamine
	Benadryl ODT	Diphenhydramine	Johnson & Johnson	
3	Tempra ODT	Acetaminophen	Bayer	Pain Relievers
	Advil ODT	Ibuprofen	Pfizer	
	Aleve ODT	Naproxen)	Bayer	
	Aspirin ODT	Aspirin	Bayer	
4	Melatonin ODT	Melatonin	Various manufacturers (e.g., Nature's Bounty, Jarrow Formulas)	Sleep Aids
	Ambien ODT	Zolpidem	Sanofi-Aventis	
5	Motofen ODT	Difenoxin	Pfizer	Anti-Diarrheal

Why Doctors Prefer ODTs

1. Patients with Swallowing Disorders like Dysphagia and Oropharyngeal dysphagia
2. Patients with Neurological Disorders like Parkinson's disease, . Alzheimer's disease, . Multiple sclerosis
3. Patients with Mental Health Conditions like Anxiety disorders, Depression
4. Patients with Gastrointestinal Disorders like Gastroesophageal reflux disease (GERD), Inflammatory bowel disease (IBD)
5. Pediatric and Geriatric Population are affected by difficult in swallowing tablets , Reduced risk of choking, Improved compliance

Conclusion

Orodispersible tablets (ODTs) represent a significant advancement in oral drug delivery, offering enhanced patient outcomes through rapid disintegration, improved bioavailability, and increased compliance. By harnessing these benefits, ODTs can revolutionize the treatment of various diseases, leading to better health outcomes

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