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Review Article

Mouth Dissolving Tablets- Review

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ABSTRACT

Mouth dissolving tablets are the solid dosage forms consists of drugs that disintegrate in the oral cavity within less than one minute leaving an easy to swallow residue. Now a days the formulation of mouth dissolving tablets is emerging and gaining popularity because it is easy to administer and leads to better patient compliance. The dosage forms are placed in the mouth, allowed to disperse or dissolve in the saliva. Then the drug releases as soon as they come in contact with the saliva, thus obviating the need for water during administration. Mouth dissolving tablets (MDT) is an innovative dosage forms overcomes the problems of swallowing and gives onset of action. This review describes the various formulation technologies developed for MDTs, patent technology and marketed formulations.

Keywords: mouth dissolving tablets, oral cavity, patent technology, patient compliance.

INTRODUCTION

For the last few years, there has been an enhanced demand for more patient friendly dosage forms. Therefore, the demand for developing new technologies has been increasing every year. Since the development cost of a new drug molecule is very high, efforts are now being made by pharmaceutical companies to focus on the development of new drug dosage forms for existing drugs with improved s efficacy and safety together with reduced dosing frequency, and the production of more cost effective dosage forms[1].

To improve the ease of administration, the mouth dissolving tablet is the most widely preferred commercial products. The oral cavity is an attractive site for the administration of drugs because of ease of administration. Various dosage forms are administered by oral route like Tablets, Capsules, Liquid preparations, etc. During the last decade, mouth dissolving tablet (MDT) technologies that make tablets disintegrate in the mouth without chewing and intake of additional water.

The MDT is also known as fast dispersing, fast melting, rapid melt, rapid dissolve, and quick disintegrating tablet. All MDTs approved by the FDA are classified as orally disintegrating tablets. These are the tablets that disintegrates or disperses in less than 3 minutes in the mouth before swallowing. Such a tablet disintegrates into smaller granules or melts in the mouth from a hard solid to a gel-like structure, allowing easy swallowing by patients. The disintegration time for good MDTs varies from several seconds to a minute. Orally disintegrating tablets provide an advantage particularly for pediatric and geriatric people who have difficulty in swallowing conventional tablets and capsules. Additionally, pediatric patients may suffer from ingestion problems as a result of underdeveloped muscular and nervous control. Moreover, patients traveling with little or no access to water, limit utility of orally administered conventional tablets or capsules. Mouth dissolving of tablet results in quick dissolution and rapid absorption which provide rapid onset of action. Moreover, drug candidates that undergo pre-gastric absorption when formulated as MDTs may show increased oral bioavailability. It provides good stability, accurate dosing, easy manufacturing

Mouth dissolving tablet (MDT)

It is a tablet that disintegrates and dissolves rapidly in the saliva, within a few seconds without the need of drinking water or chewing. A mouth dissolving tablet usually dissolves in the oral cavity within 15 sec to 3 min. Most of the MDTs include certain super disintegrants and taste masking agents.

Ideal properties of MDT[1,5,12]

Mouth Dissolving Tablet should

1. Not require water or other liquid to swallow.
2. Easily dissolve or disintegrate in saliva within a few seconds.

3. Have a pleasant mouth feel.
4. Have a pleasing taste.
5. Leave negligible or no residue in the mouth when administered.
6. Be harder and less friable.
7. Be portable and easy to transport.
8. Be able to be manufactured in a simple conventional manner within low cost.
9. Be less sensitive to environmental conditions like temperature, humidity etc.

Salient Features[1,11]

1. Ease of administration to patients who refuse to swallow a tablet, such as pediatric and geriatric patients and, psychiatric patients.
2. Convenience of administration and accurate dosing as compared to liquids.
3. Rapid dissolution of drug and absorption which may produce rapid, onset of action
4. Some drugs are absorbed from the pharynx and oesophagus as the saliva passes down into the stomach, in such cases bioavailability of drugs is increased.
5. Ability to provide advantages of liquid medication in the form of solid preparation.
6. Pre-gastric absorption can result in improved bioavailability and as a result of reduced dosage, improved clinical performance through a reduction of unwanted effects.

Advantages[1,3,5]

1. Administration to the patients who cannot swallow, such as the elderly, bedridden patients, patients affected by renal failure & patients who refuse to swallow such as pediatric, geriatric & psychiatric patients.
2. Rapid drug therapy intervention.
3. Achieve increased bioavailability/rapid absorption through pre-gastric absorption of drugs from mouth, pharynx & esophagus as saliva passes down.
4. Convenient for administration and patient compliant for disabled, bedridden patients and for travelers and busy people, who do not always have access to water.
5. Good mouth feel property helps to change the perception of medication as bitter pill particularly in pediatric patients.
6. The risk of chocking or suffocation during oral administration of conventional formulations due to physical obstruction is avoided, thus providing improved safety.
7. New business opportunity like product differentiation.

Disadvantages[1,9]

1. Mouth dissolving tablet is hygroscopic in nature so must be keep in dry place.
2. Some time it possesses mouth feeling.
3. MDT requires special packaging for properly stabilization & safety of stable product.

Difficulties with Existing Oral Dosage Form[2]

1) Patient may suffer from tremors therefore they have difficulty to take powder and liquids. In dysphasia physical obstacles and adherence to an esophagus may cause gastrointestinal ulceration.
2) Swallowing of solid dosage forms like tablet and capsules and produce difficulty for young adult of incomplete development of muscular and nervous system and elderly patients suffer from dysphasia.
3) Liquid medicaments (suspension and emulsion) are packed in multidose container; therefore achievement of uniformity in the content of each dose may be difficult
4) Buccal and sublingual formation may cause irritation to oral mucosa, so patients refused to use such medications.
5) Cost of products is main factor as parenteral formulations are most costly and discomfort.

Selection of Drugs[2]

The ideal characteristics of a drug for in vivo dissolution from an MDT include

1. No bitter taste
2. Dose lower than 20mg
3. Small to moderate molecular weight
4. Good stability in water and saliva
5. Partially non ionized at the oral cavities pH
6. Ability to diffuse and partition into the epithelium of the upper GIT (logp>1, or preferably>2)
7. Ability to permeate oral mucosal tissue Unsuitable drug characteristic for ODT;
8. Short half-life and frequent dosing
9. Very bitter or otherwise unacceptable taste because taste masking cannot be achieve
10. Required controlled or sustained release.

Excipients[2,3,13]

Mainly seen excipients in FDT are as per Table N0. 1 at least one disintegrant, a diluent, a lubricant and optionally swelling agent, a permeablizing agent, sweeteners and flavoring agents.

1. Superdisintegrants

Super disintegrant provide quick disintegration due to combined effect of swelling and water absorption by the formulation. Swelling index of the superdisintegrants is commonly studied in simulated saliva. Volume occupied by the material at the end of 4h should be noted and swelling index is calculated by the formula.

Swelling Index = [(Final volume - Initial volume)/initial volume)] X 100

Example: croscarmellose sodium, crospovidone, carmellose, carmellose calcium, sodium starch glycolate ion exchange resins (e.g. Indion 414) Sodium starch glycollate has good flowability than crosscarmellose sodium. Cross povidone is fibrous nature and highly compactable.

2. Binders

Main role of Binders is to keep the composition of these fast melting tablets together during the compression stage. Binders can either be liquid, semi solid, solid or mixtures of varying molecular weights such as polyethylene glycol.

Example**:** Binders commonly used are cellulosic polymers, povidones, polyvinyl alcohols, and acrylic polymers. Acrylic polymers used are the ammoniomethacrylate copolymer, polyacrylate, and polymethacrylate.

3. Antistatic agent

An antistatic agent is a compound used for treatment of materials or their surfaces in order to reduce or eliminate buildup of static electricity generally caused by the triboelectric effect.

Example**:** colloidal silica (Aerosil), precipitated silica (Sylod.FP244), talc, maltodextrins, beta cyclodextrin etc.

4. Lubricants

Lubricants remove grittiness and assist in the drug transport mechanism from the mouth down into the stomach.

Example: Magnesium stearate, stearic acid, leucine, sodium benzoate, talc, magnesium lauryl sulphate, liquid paraffin etc.

5. Flavours

Example**:** Peppermint flavour, clove oil, anise oil, eucalyptus oil. Flavoring agents include, vanilla, citrus oils, fruit essences etc.

6. Sweeteners

Example: Sorbitol, Mannitol, Maltitol solution, Maltitol, Xylitol, Erythritol, Sucrose, Fructose, Maltose, aspartame, sugars derivatives etc.

7. Fillers

Example: Directly compressible spray dried Mannitol, Sorbitol, xylitol, calcium carbonate, magnesium carbonate, calcium phosphate, pregelatinized starch, magnesium trisilicate, aluminium hydroxide etc.

8. Surface active agents

Example**:** sodiumdoecylsulfate, sodiumlaurylsulfate, Tweens, Spans, polyoxyethylene stearate.

Table 1: Name and Weight Percentage of Various Excipients

Name of the excipients	Percentage used
Disintegrant	1-15%
Binder	5-10%
Anti static agent	0-10%
Diluents	0-85%

Taste Masking Methods[2,11]

1) The drugs are mostly bitter in nature. Skillful taste masking is needed to hide the bitter taste in ODT formulations. Following methods are used in Taste masking.
2) Simple wet granulation method or roller compaction of other excipients. Spray drying can also employed to shroud the drug.
3) Drugs can be sifted twice or thrice in small particle size mesh with excipients such as sweeteners and flavors etc.
4) Drug particles are coated directly.
5) Granulation of the drug with certain excipients followed by the polymer coating.
6) If the drug is tasteless or very low dose, direct blend of bulk drug substance into fast disintegrating matrix is straightforward.
7) Formation of pellets by extrusion spheronization.
8) Coacervation to form microencapsulated drug within a polymer.
9) Cyclodextrins can be used to trap or complex, cyclodextrin help to solubilze many drugs.
10) Drug complexation with resinates are insoluble and no taste in oral cavity. Examples of drugs where this technique has been successfully demonstrated include ranitidine, risperidone and paroxetine.
11) Other methods include hot melt and supercritical fluids.
12) Adjustment of pH Values: Many drugs are less soluble at pH different from the pH value of the mouth, which is around 5.9. Solubilization inhibitor, such as sodium carbonate, sodium bicarbonate, sodium hydroxide, or calcium carbonate, was added to increase the pH when granules including a drug—sildenafil—dissolved in aqueous medium, the bitter taste of the drug was successfully masked by a sweetener alone.

Technology for Mouth dissolving Tablets

I. Conventional Techniques[1,8,11]

Disintegrates addition

Disintegrate addition technique is one popular techniques for formulating Fast-dissolving tablets because of its easy implementation and cost-effectiveness. The basic principle involved in formulating Fast-dissolving tablets by disintegrates

addition technique is addition of super disintegrants in optimum concentration so as to achieve mouth dissolving along with the good mouth feel.

Molding
In this method, molded tablets are prepared by using water-soluble ingredients so that the tablets dissolve completely and rapidly. The powder blend is moistened with a hydro-alcoholic solvent and is molded into tablets under pressure lower than that used in conventional tablet compression. The solvent is then removed by air-drying. Molded tablets are very less compact than compressed tablets. These possess porous structure that enhances dissolution.

Freeze drying
A process in which water is sublimated from the product after freezing. Lyophilization is a pharmaceutical technology which allows drying of heat sensitive drugs and biological at low temperature under conditions that allow removal of water by sublimation. Lyophilization results in preparations, which are highly porous, with a very high specific surface area, which dissolve rapidly and show improved absorption and bioavailability.

Sublimation
The slow dissolution of the compressed tablet containing even highly water-soluble ingredients is due to the low porosity of the tablets. Inert solid ingredients that volatilize readily (e.g. urea, ammonium carbonate, ammonium bicarbonate, hexa methelene tetramine, camphor etc.) were added to the other tablet ingredients and the mixture is compressed into tablets. The volatile materials were then removed via sublimation, which generates porous structures. Additionally, several solvents (e.g. cyclohexane, benzene) can be also used as pore forming agents.

Spray-Drying
Spray drying can produce highly porous and fine powders that dissolve rapidly. The formulations are incorporated by hydrolyzed and non hydrolyzed gelatins as supporting agents, mannitol as bulking agent, sodium starch glycolate or cross carmellose sodium as disintegrating and an acidic material (e.g. citric acid) and or alkali material (e.g. I sodium bicarbonate) to enhance disintegration and dissolution. Tablet compressed from the spray dried powder disintegrated within 20 seconds when immersed in an aqueous medium.

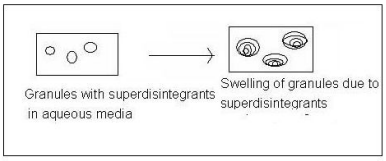
Mass-Extrusion
This technology involves softening the active blend using the solvent mixture of water soluble polyethylene glycol, using methanol and expulsion of softened mass through the extruder or syringe to get a cylinder of the product into even segments using heated blade to form tablets. The dried cylinder can also be used to coat granules of bitter tasting drugs and thereby masking their bitter taste.

Direct compration
Direct compration method is the easiest way to manufacture tablets. Conventional equipment, commonly available excipients and a limited number of processing steps are involved in direct compression. Also high doses can be accommodated and final weight of tablet can easily exceed that of other production methods. Directly compressed tablet's disintegration and solubilization depends on single or combined action of disintegrants, water soluble excipients and effervescent agent.

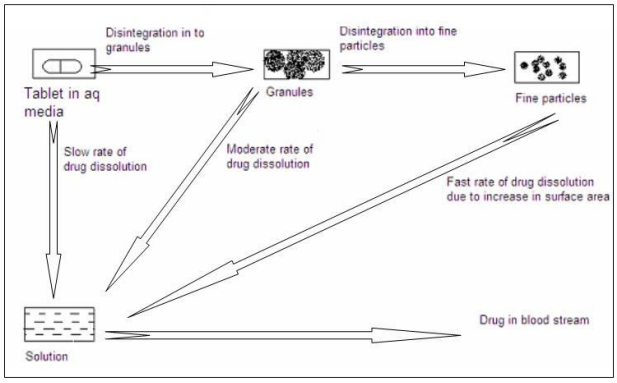
II. Patented Technology[3,5,8,11]
Flashtab Technology
Prographarm laboratories have patented the Flashtab technology. Tablets prepared by this system consist of an active ingredient in the form of micro crystals. Drug micro granules may be prepared by using the conventional techniques like coacervation, micro encapsulation, and extrusion spheronisation. All the processing utilized conventional tabletting technology.

Wowtab Technology
Wowtab Technology is patented by "Yamanouchi Pharmaceutical Co. " WOW means "Without Water ". In this process, combination of low mouldability saccharides and high mouldability saccharides is used to obtain a rapidly melting strong tablet. The active ingredient is mixed with a low mouldability saccharide and granulated with a high mouldability saccharide and compressed into tablet.

Flash Dose Technology
Flash dose technology has been patented by "Fuisz". Nurofen meltlet, a new form of ibuprofen as melt-in-mouth tablets, prepared using flash dose technology is the first commercial product launched by" Biovail Corporation". Flash dose tablets consists of self binding shearform matrix termed as "floss". Shearform matrices are prepared by flash heat processing.



Mechanism of superdisintegrants by swelling



Mechanism of tablet disintegration

Various types of Super disintegrants used are

1. Crosspovidone
2. Microcrystalline cellulose
3. Sodium starch glycollate
4. Sodium carboxy methyl cellulose or cross carmelose sodium
5. Pregelatinzed starch
6. Calcium carboxy methyl cellulose
7. Modified corn starch. Sodium starch glycollate has good flowability than cross carmellose sodium.

Factors to be considered for selection of superdisintegrants

1. It should produce mouth dissolving when tablet meets saliva in the mouth.
2. It should be compactable enough to produce less-friable tablets.
3. It can able to produce good mouth feel to the patient. Thus, small particle size is preferred to achieve patient compliance.
4. It should has good flow since it improve the flowability of the total blend.

Preformulation Studies1,3,13

Bulk Density

Apparent bulk density was determine by pouring the 5 gram of powder into a 100 ml granulated cylinder. The bulk volume (V) poured drug was determined. The bulk density was calculated using the formula.

$$V = Vb - Vp$$

$$\rho b = M / V$$

Where : ρb - bulk density,

M- is the weight of powder,

V- is the volume of powder.

$$\Theta = \text{Tan-1} (h / r)$$

Tapped Density

Weight 5 g. of powder and placed in a measuring cylinder. Measuring cylinder containing known mass (5 gm) of powder was tapped for 100 times or fixed time. The minimum volume (Vt) occupied was measured. The tapped density was calculated using following formula.

$$\rho t = M / Vt$$

Compressibility Index

The simplest way for measurement of free flow of powder is compressibility, a indication of the ease with which a material can be induced to flow is given by Compressibility Index. The value below 15% indicates a powder with give rice to good flow properties, whereas above 25% indicate poor flowability. Which is calculated follows.

$$\% C.I. = \rho t - \rho b \rho t / \times 100$$

Hausner ratio

Hausner ratio is an indirect index of ease of powder flow. Hosner ratio is the ratio of tapped density to bulk density. Lower the value of Housner ratio better is the flow property. Powder with Housner ratio less than 1.18, 1.19, 1.25, 1.3- 1.5 and greater the 1.5 indicate excellent, good, passable, and very poor, respectively. It is calculated by following formula.

$$\text{Hausner ratio} = \rho t \rho t$$

Porosity

Percent relative porosity (ε) was obtained using the relationship between apparent density (ρapp) and true density (ρtrue) which is calculated by following formula.

$$\varepsilon = (1 - \rho app / \rho true) \times 100$$

Voide Volume

Voide volume (V) was obtained by difference between bulk volume(Vb) and tapped volume (Vp).Voide volume can be calculated by following formula.

Angle of repose

The angle of repose was determined using funnel method. Funnel that can be fit vertically with stand at 6.3 cm. height. The opening end of funnel are

closed with thumb until drug are poured. The 5 gm of powder was poured into funnel that can be raised vertically until a maximum cone hight (h) was obtained. Radius of the heap (r) was measured and the angle of repose (Θ) was calculated using the formula.

$$\text{Tan } \Theta = h/r$$

Evaluation of Mouth dissolving Tablets[1,3,6,11,13]

Thickness

Tablet thickness can be measured using a simple procedure. 5 tablets were taken and their thickness was measured using Vernier calipers.

Hardness

It is the force required to break a tablet by compression in the radial direction, it is an important parameter in formulation of mouth dissolve tablets because excessive crushing strength significantly reduces the disintegration time.In the present study the crushing strength of the tablet was measured us-ing Pfizer hardness testers. An average of three observations is reported.

Uniformity of weight

I.P. procedure for uniformity of weight was followed, twenty tablets were taken and their weight was determined individually and collectively on a digital weighing balance. The average weight of one tablet was determined from the collective weight. The weight variation test would be a satisfactory method of determining the drug content uniformity.

Average weight of tablet	% deviation
80 mg or less	± 10
More than 80 mg but less than 250 mg	± 7.5
250 mg or more	± 5

Assay

Twenty tablets from each batch were weighed accurately and powdered powder equivalent to 100mg drug was shaken with 100 ml of 0.1N Hydrochloric acid in 100 ml amber colored volumetric flask and from this 10 ml was pipette out and then dilute up to 100 ml. From standard solution again 10 ml pipette out and diluted up to 100 ml in ml.

Disintegration time

The test was carried out on 6 tablets using the apparatus specified in I.P.-1996 distilled water at 37ºC ± 2ºC was used as a disintegration media and the time in second taken for complete disintegration of the tablet with no palatable mass remaining in the apparatus was measured in seconds.

***In-vitro* drug release**

The development of dissolution methods for ODTs is comparable to the approach taken for conventional tablets, and is practically identical. Dissolution conditions for drugs listed in a pharmacopoeia monograph, is a good place to start with scouting runs for a bioequivalent ODT. Other media such as 0.1N HCl and buffers (pH - 4.5 and 6.8) should be evaluated for ODT much in the same way as their ordinary tablet counter parts. The USP 2 Paddle apparatus is used for this purpose which is the most suitable and common choice for orally-disintegrating tablets, with a paddle speed of 50 rpm commonly used. Typically the dissolution of ODT is very fast when using USP monograph conditions; hence slower paddle speeds may be utilized to obtain a profile. The USP 1 Basket apparatus may have certain applications but sometimes tablet fragments or disintegrated tablet masses may become trapped on the inside top of the basket at the spindle where little or no effective stirring occurs, yielding irreproducible dissolution profiles.

Friability test

Friability of the tablets was determined using Roche friability (Electrolab, Mumbai). This device subjects the tablets to the combined effect of abrasions and shock in a plastic chamber revolving at 25 rpm and dropping the tablets at a height of 6 inches in each revolution. Preweighed sample of tablets was placed in the friabilator and were subjected to 100 revolutions. Tablets were de dusted using a soft muslin cloth and reweighed. The friability (f) is given by the formula.

$$f = (1- W0 / W) \times 100$$

Where, W0 = weight of the tablets before the test
W = the weight of the tablet after the test.

***In-vitro* dispersion time test**

To determine dispersion time 10 ml measuring cylinder was taken in which 6 ml distilled water was added and tablet was dropped in it. Time required for complete dispersion was determined.

Wetting time

Five circular tissue papers of 10 cm diameter are placed in a petridish with a 10 cm diameter. Ten millimeters of water-containing Eosin, a water-soluble dye, is added to petridish. A tablet is carefully placed on the surface of the tissue paper. The time required for water to reach upper surface of the tablet is noted as a wetting time.

Water absorption ratio

A piece of tissue paper folded twice was placed in a small Petri dish containing 6 ml of water. A tablet was put on the paper & the time required for

complete wetting was measured. The wetted tablet was then weighed. Water absorption ratio (R), was determined using following equation,

$$R = 10 (Wa /Wb)$$

Where

Wb = weight of tablet before water absorption

Wa = weight of tablet after water absorption.

Accelerated Stability study

The Orally disintegrating tablets are packed in suitable packaging and stored under the following conditions for a period as prescribed by ICH guidelines for accelerated studies. (i) 40 ± 1 °C (ii) 50 ± 1°c (iii) 37 ±1 ° C and Relative Humidity= 75% ± 5% The tablets were withdrawn after a period of 15 days and analyzed for physical characterization (Visual defects, Hardness, Friability, Disintegrations, and Dissolution etc.) and drug content. The data obtained is fitted into first order equations to determine the kinetics of degradation. Accelerated stability data are plotting according Arrhenius equation to determine the shelf life at 25 ° C.

Packaging

Packaging special care is required during manufacturing and storage to protect the dosage of other fast-dissolving dosage forms. Quick-dispersing and/or dissolving oral delivery systems, the system can be packaged using various options, such as single pouch, blister card with multiple units, multipleunit dispenser, and continuous roll dispenser, depending on the application and marketing objectives.

Some of Promising Drug Candidates for Mouth Dissolving Tablets[5]

1. Antibacterial agents: Ciprofloxacin, tetracycline, erythromycin, rifampicin, penicillin, doxycyclin, nalidixic acid, trimethoprim, sulphacetamide, sulphadiazine
2. Anthelmintics: Albendazole, mebendazole, thiabendazole, livermectin, praziquantel, pyrantel embonate,dichlorophen
3. Antidepressants: Trimipramine maleate, nortriptyline HCl, trazodone HCl, amoxapine, mianserin HCl
4. Antidiabetics: Glibenclamide, glipizide, tolbutamide, tolazamide, gliclazide, chlorpropamide
5. Analgesics/anti-inflammatory agents: Diclofenac sodium, ibuprofen, ketoprofen, mefenamic acid, naproxen, oxyphenbutazone, indomethacin, piroxicam, phenylbutazone
6. Antihypertensives: Amlodipine, carvedilol, diltiazem, felodipine, minoxidil, nifedipine, prazosin HCl, nimodipine, terazosin HCl
7. Antiarrhythmics: Disopyramide, quinidine sulphate, amiodarone HCl
8. Antihistamines: Acrivastine, cetrizine, cinnarizine, loratadine, fexofenadine, triprolidine
9. Anxiolytics, sedatives hypnotics and neuroleptics: Alprazolam, diazepam, clozapine, amylobarbitone, lorazepam, haloperidol, nitrazepam , midazolam phenobarbitone, thioridazine, oxazepam
10. Diuretics: Acetazolamide, clorthiazide, amiloride, furosemide, spironolactone, bumetanide, ethacrynic acid
11. Gastro-intestinal agents: Cimetidine, ranitidine HCl, famotidine, domperidone, omeprazole, ondansetron HCl, granisetron HCl
12. Corticosteroids: Betamethasone, beclomethasone, hydrocortisone, prednisone, prednisolone, methyl prednisolone
13. Antiprotozoal agents: metronidazole, tinidazole, omidazole, benznidazole, clioquinol, decoquinate

List of some Marketed Products of MDT[1,5,11]

Trade Name	Active Drug	Manufacturer
Nimulid-MD	Nimesulide	Panacea Biotech, New Delhi, India
Feldene Fast Melt	Piroxicam	Pfizer Inc., NY, U.S.A
Zyrof Meltab	Rofecoxib	Zydus, Cadila, India
Pepcid RPD	Famotidine	Merck and Co., NJ, U.S.A
Romilast	Montelukast	Ranbaxy Labs Ltd., New Delhi,India
Torrox MT	Rofecoxib	Torrent Pharmaceuticals, Ahmedabad, India
Olanex Instab	Olanzapine	Ranbaxy Labs Ltd., New Delhi, India
Zofran ODT	Ondansetron	Glaxo Wellcome, Middlesex, UK
Mosid-MT	Mosapride citrate	Torrent Pharmaceuticals, Ahmedabad, India
Febrectol	Paracetamol	Prographarm, Chateauneuf, France
Maxalt MLT	Rizatriptan	Merck and Co., NJ, U.S.A
Zelapar TM	Selegiline	Amarin Corp., London, UK
Claritin® RediTabs®	Loratadine	Scherig corporation
Zyperxa®	Olazepine	Eli Lilly
Resperdal® M-TabTM	Resperidone	Janssen

ZubrinTM (Pet drug)	Tepoxelin	Scherig corporation
ZelaparTM	Selegiline	Elanl Amarin corporation
Propulsid®	Cisapride	Jannsen

CONCLUSION

Mouth dissolving tablets establish an innovative dosage form which overcomes the difficulties of swallowing and geriatric populations. These tablets are designed to dissolve or disintegrate rapidly in the saliva generally within one minute. MDT need to be formulated for pediatric, geriatric, bedridden, psychotic patients, for individuals patients who are busy in travelling, patients who are not have access to water. The clinical studies show MDTs can improve patient compliance, provide a rapid onset of action, and increase bioavailability. Considering the many benefits of MDTs, it is only a matter of time until a majority of oral formulations are prepared in MDT forms. The basic method followed by all the presently available technologies involved in the formulation of mouth dissolving tablets is to maximize the porous structure of the tablet matrix and incorporate superdisintegrating agents in optimum concentration so as to achieve rapid disintegration and instantaneous dissolution of the tablet along with good taste masking possessions and excellent mechanical strength. The availability of the various technologies and manifold benefits of fast dissolving tablets will surely increase its popularity in the near future.

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