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REVIEW ON MOUTH DISSOLVING TABLETS: A NEW PROMOTING IN DRUG DELIVERY

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ABSTRACT :

The goal of recent developments in Novel Drug Delivery Systems (NDDS) is to create dosage forms that are easy to produce and administer, have no negative side effects, provide instant release, and have improved bioavailability.as to achieve better patient compliance. MDTs are intended and engineered to breakdown and dissolve in saliva before being readily taken without the use of water, which is a significant advantage over traditional dosage forms. Mouth dissolving tablets are solid dosage forms containing medications that dissolve in the oral cavity within less than one minute (within 60 seconds), leaving an easy-to-swallow residue. Mouth dissolving tablets have been formulated for pediatric, geriatric, and bed-ridden patients and for active patients who are busy and traveling and may not have access to water.recent technical improvements in the dosage form design of MDTs meet patient requirements while maintaining efficacy. This review examines the technique of manufacture, qualities, benefits, disadvantages, characterisation, mechanisms; medications to be integrated in the mouth dissolving tablet; product assessment; and future trends for the mouth dissolving tablet. These are innovative dose formulations that dissolve in saliva within 60 seconds of being placed on the tongue. Such MDTs may be provided anywhere, at any time, and without the need of water, making them ideal for youngsters, the elderly, and intellectually impaired patients. This tablet shape is intended to enable the administration of an oral solid dosage form in the absence of water or fluid consumption. This overview illustrates the many formulation features and technology.

INTRODUCTION:

Mouth dissolve tablets (MDT) are also known as melt in mouth tablets, fast dissolving pills, or quick dissolving tablets. These are innovative pills that disintegrate, dissolve, or scatter in saliva. They are also appropriate for the mentally sick, the bedridden, and people without easy access to water. These tablets are popular as a dosage form of choice in the present market due to their advantages, which include patient compliance, quick start of action, enhanced bioavailability, and superior stability. Among the different dosage forms designed to promote convenience of administration, the mouth dissolving tablet (MDT) is the most popular commercial item. To avoid the challenges associated with traditional dose forms, mouth dissolving tablets have been designed with good hardness, dose homogeneity, simplicity of administration, and use as the primary dosage form for patients who are travelling, elderly, and children. Innovative drug delivery solutions, such as "Mouth Dissolving Tablets" (MDT), have been created to address these issues. Fast-dissolving tablets are made using the following technologies: freeze-drying, spray-drying, tablet moulding, sublimation, compression of the tablet, addition of disintegration, and sugar-based excipients.[1 7]

Tablet for Mouth Dissolving (MDT)

It's a tablet that dissolves quickly in saliva and doesn't require chewing or drinking water in a matter of seconds. In the oral cavity, a mouth dissolving pill typically dissolves in 15 to 3 minutes. A few super disintegrants and flavour masking chemicals are included in the majority ofMDTs.

PERFECT FEATURES OF MOUTH DISSOLVING TABLETS (MDT CRITERIA)[4]

1. They should melt or disintegrate in the mouth in a matter of seconds and not require water to consume.
2. Permit heavy drug loading.
3. Work well with other excipients and flavour masking.
4. Feel good in the mouth.

5. After oral administration, leave as little as possible residue in the mouth.
6. Be strong enough to endure the rigours of the manufacturing process
7. Handle after manufacture.
8. Show minimal susceptibility to external factors like temperature and humidity.
9. Adjust and accommodate the processing and packaging equipment that is currently in use.
10. Permit the inexpensive production of tablets utilising standard processing and packaging machinery.
11. Be lightweight and simple to move, with no fragility concerns.
12. Dissolves readily

Drug attribute that is inappropriate for MDTs:

1. Frequent dosage and brief half-life.
2. Extremely bitter or unsatisfactory taste due to the inability to disguise flavour.
3. Needed for gradual or regulated release.

MOUTH DISSOLVING TABLETS' ADVANTAGES

1. Administration to patients who refuse to swallow, including paediatric, geriatric, and mental patients, as well as those who are bedridden, elderly, or suffering from renal failure.3.
2. A pleasant mouthfeel can assist patients, especially those in their younger years, stop seeing medications as bitter pills.
3. Swallowing the tablet does not require water.
4. A lower first pass metabolism results in better bioavailability, a lower dosage, and fewer adverse effects.
5. No chance of suffocating from a physical blockage when eaten, providing enhanced
6. The medication dissolves and absorbs quickly, providing a quick start to action.
7. Because oral administration doesn't require water, it's convenient and simple to administer.

Strong enough and long-lasting to endure the rigours of factory handling and the manufacturing process.

9. A pleasing texture to the mouth.
10. Insensitive to temperature and humidity levels in the surroundings.
11. Better flavour with no aftertaste that dissolves into the mouth.
12. Flexible and compatible with current processing and packaging equipment.
13. Economical.
14. Taste masking compatible.
15. Quick intervention with medication therapy.Yeah,

MOUTH DISSOLVING TABLETS' DISADVANTAGE:

1. Because fast dissolving tablets are hygroscopic, they need to be stored in a dry environment.
2. It occasionally has a mouth sensation.
3. MDT needs specialised packaging in order to stabilise a stable product correctly and safely.[4]

RESTRICTIONS RELATING TO MOUTH DISSOLVING TABLETS:

1. The mechanical strength of the tablets is typically inadequate. Therefore, handling must be done carefully.
2. If not prepared properly, the tablets may leave an unpleasant taste and/or grittiness in the mouth. Appropriately
3. It is challenging to develop medications with relatively larger dosages—like ciprofloxin—into fast-disintegrating tablets.
4. Patients with Sjogren's syndrome or dry mouth from decreased saliva may not be the ideal candidates for fast-disintegrating tablets if they are also taking anticholenergic medications.

IMPORTANT CRITERIA FOR EXCIPIENTS USED IN THE FORMULATION OF MDTs:[9]

1. It needs to be able to break down fast.
2. Their unique characteristics shouldn't have an impact on the MDTs.
3. It shouldn't interfere in any way with the medication or any excipients.
4. It shouldn't affect the product's organoleptic qualities or efficacy.
5. The final integrity and stability of the product must be considered carefully when choosing a binder (single or mix of binders).

6. The excipients that will be employed have melting points between 30 and 350C.
7. The binders might be polymeric mixes, liquids, semi-liquids, or solids.
8. (For instance, hydrogenated vegetable oils, coca butter, and polyethylene glycol)[3]

MDT TABLETS' SALIENT ASPECTS:[10]

1. Simplicity of administration to patients, such as elderly and paediatric patients and psychiatric patients, who refuse to swallow a tablet.
2. Compared to liquids, ease of administration and precise dosage.
3. The medicine dissolves and absorbs quickly, which could result in a quick start of action.
4. As saliva travels down into the stomach, some medications are absorbed from the pharynx and oesophagus; in these situations, the
5. bioavailability of the medication is enhanced.
6. The capacity to offer liquid medication's benefits in a solid form.
7. Because pre-gastric absorption reduces dosage and minimises side effects, it can enhance bioavailability and improve clinical performance.

MDTS USES SUPER DISINTEGRANTS[1 2 5]
The longer the day, the greater the need for

The following are a few varieties of Super disintegrants that are used:[13]

1. Equividuconazole
2. Cellulose microcrystalline
3. Glycolate of sodium starch
4. Sodium carboxymethyl cellulose, also known as sodium cross carmelose
5. Starch that has been gelatinized.
6. Methyl cellulose carboxy-calcium.
7. Enhanced maize starch. The flowability of sodium starch glycollate is better than that of sodium croscarmellose.

Things to take into account while choosing super disintegrants:[5 9 38]

1. When the pill comes into contact with saliva in the mouth, it should cause mouth dissolving.
2. It should be small enough to make tablets that are less brittle.
3. It can provide the patient a comfortable mouth sensation. Therefore, it is better to have smaller particle sizes to ensure patient compliance.
4. It should flow well since it enhances the blend's overall flowability.

Disintegrants' mechanism of action: [16 19]

1)The tablet breaks down into primary particles by one or more of the following mechanisms:
First, by capillary action
2) Through swelling;
3) As a result of the heat generated during soaking;
4) As a result of gas release
5) By use of an enzyme
6) As a result of dissolving particles' repellent forces
7) Owing to distortion

1) First, by capillary action[4 9]

Capillary action-mediated disintegration is always the initial stage. The tablet splits into tiny particles and the intermolecular link is weakened when it is placed in an appropriate aqueous medium because the medium seeps into the tablet and replaces the air adsorbed on the particles. The drug's or excipients' hydrophilicity as well as the tableting circumstances affect the tablet's ability to absorb water. In the case of these disintegrants, preservation of porous.

2) By expanding [13]

Swelling is arguably the most well acknowledged overall mode of action for tablet disintegration. Tablets with high porosity dissolve slowly due to insufficient swelling force.

However, the tablet with limited porosity exerts a considerable swelling force. It is important to remember that a very high packing percentage prevents liquids from penetrating the tablet and causes the disintegration to slow down even more. Tablet disintegration caused by swelling and wicking

3) Due to the heat generated during soaking (air expansion)[1]

Exothermic disintegrants that become wetted cause localised stress because of capillary air expansion, which aids in the tablet's breakdown. Nevertheless, this theory is restricted to a small number of disintegrants and is unable to adequately explain

4) Gas release:

When tablets are moist, bicarbonate and carbonate react with citric or tartaric acid, releasing carbon dioxide within the tablet. The tablet breaks down because internal pressure causes it to dissolve. A chemist will employ this effervescent combination to create fast-dissolving or extremely quickly dissolving pills. Because these disintegrants are extremely sensitive to even little variations in temperature and humidity, the production process for the tablets must be conducted under stringent environmental control. The effervescent blend can be added to two different formulation fractions or added right before compression.

5) Through an enzymatic process

In this case, the body's enzymes serve as disintegrants. These enzymes aid in disintegration by destroying the binder's ability to bind. In actuality, swelling or pressure applied in a radial or outer direction results in the tablet bursting or the rapid absorption of water, which creates a huge increase in the volume of granules to aid in breakdown.

6) As a result of dissolving particles' repellent forces[13]

An additional disintegration process aims to clarify why tablets containing "non-swellable" disintegrants swell. Based on the finding that non-swelling particles also contribute to tablet disintegration, Guyot Hermann developed a particle repulsion theory. Water is necessary for the disintegration mechanism, which is based on the electric repulsive interactions between particles. Scientists discovered that repulsiveness .

7) Because of distortion

Hess had demonstrated that fragmented particles undergo deformation during tablet compression; these deformed particles revert to their original shape upon contact with water or watery fluids. Occasionally, when granules underwent significant deformation during compression, the starch's ability to expand was enhanced. The tablet breaks apart as a result of the distorted particles' increased size. Only lately has research on this potential starch mechanism started.

Modern manufacturing technologies utilised for MDTs (manufacturing-diagnostic techniques)[5 30 36]

1. Lyophillization/freeze drying
2. Conforming
3. Translucency
4. Utilising Spray Drying
5. Immediate Compression
6. Extrusion in Mass
7. The use of nanotechnology
8. The Cotton Candy Method
9. Films that dissolve quickly

LYOPHILIZATION AND FREEZE DRYING TECHNOLOGY:

Tablets with a very porous open matrix network, into which saliva quickly travels to break down the lyophilized mass once it is in the mouth, can be made using lyophillization. The medication is included within a water-soluble matrix that is freeze-dried to create a unit that quickly disperses in the mouth. In addition to the matrix and active ingredients, other excipients that enhance the quality of the final product or process features may be included in the final formulation. These include of colorings, flavours, antioxidants, wetting agents, preservatives, and suspending agents. For freeze-drying formulations, tiny particle size, tastelessness, chemical stability, water insoluble, and low dosage are the ideal medicinal properties. The process of lyophillization is a labor-intensive and rather costly one. An additional disadvantage

2. MOULDING: [13]

Water-soluble chemicals are added to moulded tablets to aid in the rapid absorption of medications through the oral mucosa. This system's benefit is its porosity structure, which improves drug dispersion and, thus, increases bioavailability while reducing first-pass metabolism. Since the moulding method is typically used with soluble ingredients (saccharides), the mouth feel and tablet disintegration are enhanced. But because moulded tablets are not as strong mechanically, they shatter and erode easily when handled. These moulded tablets' mechanical strength—which is accomplished by adding binding agents—is the primary cause for worry.The moulding method produces tablets that are easier to scale up for industrial scale manufacture than the lyophillization method.[13]

VERIFICATION: [9] [17]

In order to create a porous matrix, the formulation includes volatile chemicals that are subsequently sublimated. Compressed tablets can be made using highly volatile substances such as ammonium bicarbonate, ammonium carbonate, benzoic acid, camphor, naphthalene, urea, urethane, and phthalic anhydride in addition to other excipients. Sublimation is then used to remove this volatile substance, leaving behind a very porous matrix. It has been claimed that tablets made using this method often dissolve in 10–20 seconds. It is possible to employ solvents such as benzene and cyclohexane as pore-forming agents.

4. SPRAY DRYING:©[3]

Gelatin can be employed in this method as a matrix and supporting agent, mannitol as a bulking agent, and sodium starch glycolate, croscarmellose, or crospovidone as superdisintegrants. It has been observed that tablets made from the spray-dried powder dissolve in an aqueous solution in less than 20 seconds. A superdisintegrant such as sodium starch glycolate and croscarmellose sodium, bulking agents like mannitol and lactose, acidic (citric acid) and/or alkaline (sodium bicarbonate) substances were all present in the formulation. When compacted into tablets, this spray-dried powder demonstrated improved solubility and quick disintegration.

5. Direct Compression: [3]

The simplest and most economical method of producing tablets is direct compression. Because of the availability of better excipients, particularly super-disintegrants and sugar-based excipients, MDT may be manufactured using this approach.

(a) Superdisintegrants: The addition of superdisintegrants affects the rate of disintegration and, consequently, the rate of dissolution. The disintegration is also accelerated by additional components such as effervescent agents and water-soluble excipients.

(b) Sugar-based excipients: These additives are bulking agents and taste masking agents. The majority of medications have an unpleasant or bitter taste. And the medicine shouldn't taste bad, which is a fundamental need for creating MDTs. Thus, in the majority of situations, flavour masking is required. Mostly utilised include sorbitol, mannitol, xylitol, dextrose, fructose, etc. Sweetness and aqueous solubility provide a pleasant mouthfeel and effective flavour masking. Not all sugar, though?based materials are very compatible or compressible and dissolve quickly. Nonetheless, methods for designing quickly dissolving tablets that utilise sugar-based excipients have been devised. (such as sorbitol, mannitol, polydextrose, fructose, lactilol, maltilol, maltose, and starch hydrolysate) Misumi et al. categorised

Lactose and mannitol, two types of saccharides, have a fast rate of dissolution but a low moldability.

The type 2 saccharides, maltose and maltilol, have a low rate of dissolution but a good moldability.

6.MASS-EXTRUSION:·

Using a solvent mixture of methanol and water-soluble polyethylene glycol, the active blend is softened in this technology. The softened mass is then expelled through a syringe or extruder to create a cylindrical extrude, which is then divided into even segments with a heated blade to form tablets. This method can also be applied to cover bitter medication pellets in order to hide their flavour.

7. ANALOGIZATION: [5]

A patented wet-milling approach is used to reduce the drug's particle size to nano size, a recently discovered Nanomelt technology. Surface adsorption on certain stabilisers stabilises the drug's nanocrystals against agglomeration, and these stabilisers are subsequently integrated into MDTs. This method works particularly well for medications that are not very soluble in water. The quick disintegration/dissolution of nanoparticles, which increases absorption and, consequently, increases bioavailability and dose reduction, the economical manufacturing process, the conventional packaging owing to its remarkable durability, and the wide range of doses (up to 200 mg drug per unit) are additional benefits of this technology.

8. The Process of making cotton candy:

This MDDDS, called FLASHDOSE®, is made utilising ShearformTM and Ceform TITM technologies to get rid of the medicine's *bitter taste. Shear form technology is used to generate a matrix called as "floss" with a mixture of excipients, either alone or with pharmaceuticals. Similar to cotton candy fibres, floss is a fibrous substance that is formed at temperatures between 180 and 266 °F from saccharides such sucrose, dextrose, lactose, and fructose. On the other hand, fibres may be generated from other polysaccharides, such as polymaltodextrins and poly-dextrose, at temperatures 30–40% lower than those of sucrose. This adjustment makes it safe to include thermolabile medications in the formulation. This technique quickly solubilizes the sugars, producing a very porous product with a very pleasant tongue feel.

9. QUICKLY RESOLVING FILMS:

It is a brand-new area of MDDDS that offers an incredibly practical way to take vitamins and drugs. Using this method, a non-aqueous solution is made up of medication, other taste-masking ingredients, and water-soluble film-forming polymers (such as pullulan, carboxy methylcellulose, hydroxypropyl methylcellulose, hydroxyl ethylcellulose, hydroxyl propylcellulose, polyvinyl pyrrolidone, or sodium alginate), which are then allowed to form a film after the solvent evaporates. If the medication is bitter, coated microparticles of the medicine or resin adsorbate can be added to the film. When this film is put to the mouth, it quickly melts or dissolves, releasing the medication in a suspension or solution. This system's characteristics include paper thin sheets less than 2 by 2 inches, disintegration in

DIFFICULTIES IN MAKING MOUTH DISSOLVING TABLETS:[12][13]

A. Rapid dissolving drug delivery systems often include the medication in a taste-masked form because most medications are inedible. Drug taste masking becomes essential to patient compliance because delivery methods crumble or disintegrate in the patient's mouth, releasing the active chemicals that come into touch with the taste buds.

B. Strengthening of the muscles [3]

The main requirement for fast dissolving tablets is that they must be composed of either very soft and porous moulded matrix or compressed into tablets with very little compression force. The latter makes the tablets brittle, difficult to handle and frequently necessitates specialised peel-off blister packing, which could raise the cost of the tablet.

C. The hygroscopicity

Under typical temperature and humidity circumstances, a number of orally disintegrating dosage forms cannot preserve their physical integrity due to their hygroscopic nature. As a result, they require humidity protection, necessitating the use of specific product packaging.

D. Amount of medication

The quantity of medication that may be added to each unit dosage restricts the deployment of ODT technology. The medication dosage for lyophilized dosage forms has to be less than 60 mg for soluble medications and less than 400 mg for insoluble pharmaceuticals. This property is especially difficult to formulate as oral films or wafers that dissolve quickly.

E. Solubility in aqueous solutions

Because they create eutectic mixtures, which induce freezing-point depression and the production of a glassy solid that may collapse upon drying due to loss of supporting structure during the sublimation process, water-soluble medications present a number of formulation issues.

F. Dimensions of tablet

The size of a pill affects how easy it is to take. It has been shown that tablets in the sizes of 7-8 mm are the simplest to swallow, whereas tablets bigger than 8 mm are the easiest to manage.

THE MOUTH DISSOLVING TABLET'S EVALUATION: [16] [17]

A variety of tests and metrics are used to evaluate MDTs. The tests listed below are run in order to assess MDT.[16] [17]

1) Variation in Weight: [5]

Twenty pills are ingested in accordance with the I.P. technique for weight homogeneity, and their weight is measured both individually and collectively on an electronic weighing scale. From the total weight, one tablet's average weight was calculated. The weight variation test would be a good way to find out how uniform the medication content is.

Average weight of Tablets (mg) [2] [19]

Average Weight Of Tablet (Mg)	Maximum Percent Deviation
80 mg or less	10
More Than 80mg but less than 250mg	7.5
250mg or more	5

2**) Density**:
.

The Vernier calliper is used to measure the thickness of tablets. Tablets are used in triplicate to generate an average value, and the thickness mean ± standard deviation data are then reported.

3) Hardness of Tablet: [8]

The force applied across the tablet's diameter in order to shatter it is known as the tablet's hardness. The tablet's ability to withstand chipping, abrasion, or breaking while being stored. Depending on how hard it is, handling and transformation are required before use. In the case of MDTs, the hardness is kept low to facilitate quick dissolution in the mouth. A hardness tester, such as the Pfizer or Monsanto tablet hardness tester, is used for this process.
4) Friability[11] [19]

The mechanical strength of tablets is used to measure their friability. The method below is used to utilise the Roche Friabilator to determine the friability. The friabilator contains a pill that has been preweighed. The friabilator is made out of a plastic container that rotates at 25 rpm and drops the tablets six inches each time. In the friabilator, the tablets are turned 100 times in 4 minutes. Tablets are reweighed at the conclusion of the test, and the weight loss represents the friability factor. This may be represented as a percentage using the formula: % Friability = Weight Loss / Initial Weight x 100.

5) Disintegration Time ([5] [27])

The disintegration device is used to conduct the test. Disintegration medium made of phosphate buffer (pH 6.8) kept at 37 oC plus or minus two oC is utilised.

6) Wetting Period:

Six millilitres of distilled water are contained in a tiny petridish with a piece of tissue paper folded twice inside. The wetting time is measured by gently placing a tablet on the paper's surface and noting how long it takes for water to reach the tablet's upper surface. A shorter wetting time corresponds to a more porous tablet.

7) Ratio of Water Absorption:[2]

The following formula was used to calculate the water absorption ratio
"R": R=100 (Wb-Wa) / Wa

where Wa is the tablet's weight before to water absorption and Wb is the tablet's weight following water absorption.

8) Drug Release Studies in vitro:

Using a USP dissolving apparatus II (paddle type) at 50 rpm in 900 ml of phosphate buffer (pH 6.8) at 37±0.5ºC, the in vitro drug release is investigated. Ten millilitres of the sample are extracted and filtered at various intervals. To maintain a consistent volume, the medium is replenished into the container with an equal volume following each withdrawal. The UV Spectrophotometer determines the samples' absorbance at a specified maximum. Plotting the cumulative percentage of drug release against time shows the mean values of drug release.[34]

9) In-vitro dispersion time:

After adding a tablet to 10 ml of phosphate buffer solution (pH 6.8 at 37+0.5ºC), the amount of time needed for the tablet to completely dissolve was calculated. 10) Test for disintegration: ODTs typically dissolve in one minute, however the actual disintegration period that a patient may experience might vary from five to thirty seconds. There are many problems with the usual disintegration test approach for these dosage forms, and it is insufficient to measure the very low disintegration periods. The ODT disintegration test should replicate how saliva dissolves in the mouth.

11. Stability Analysis (Relative to Temperature)[19] [20]

As directed by ICH guidelines for accelerated studies, the fast-dissolving tablets are placed in appropriate packaging and kept for the designated amount of time in the following circumstances.

(i) 40 ± 1 ℃

(ii) 37 ±1 ℃, 50 ± 1℃, and 75% ± 5% relative humidity

After 15 days, the tablets were taken out and their drug content and physical characteristics (such as visual flaws, hardness, friability, disintegrations, and dissolution) were examined. By fitting the gathered data into first order equations, the kinetics of degradation are determined.
To calculate the shelf life at 25 ℃, accelerated stability data are shown using the Arrhenius equation.

12) Packaging [1] • [19]

For fast-dissolving films, there are several packaging choices. For films, single packing is required. Those are medicinal items; the most widely used packaging shape is an aluminium bag. The Rapid Card is a patented and exclusive packaging solution created by Applied Pharma Research (Switzerland)-Labtec GmbH of Germany, especially for the Mouth dissolving Films. The Rapid Card has three Mouth dissolving Films on each side and is precisely the same size as a credit card. Since each dose may be removed separately, the patient can have six discrete, packed doses of his medication easily accessible in his pocket or handbag.

Trade Name	Active Drug	Manufacturer
Nimulid?MD	Nimulid?MD	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

Table 1.3: Marketed Products of MDT Trade Name Active Drug Manufacturer[21] [22] [26]

APPLICATION[4 32]

The pill can be swallowed without water.

FDTs are easily administered to youngsters, the elderly, and patients with mental health issues.
precise dosage in contrast to liquids. The medication has a quick beginning of effect due to its rapid dissolution and absorption.

CONCLUSION:[323334]

Over the past 10 years, several manufacturers have shown interest in MDTs due to their potential benefits over traditional dosage forms. These benefits include enhanced patient compliance, convenience, bioavailability, and a quick beginning of action. The MDT formulations produced using a few of these technologies are sufficiently strong mechanically and dissolve quickly in the mouth without the need for water. Both paediatric patients who have lost their first teeth and elderly patients who have lost all of their teeth can benefit from using these MDTs with ease. They turn into liquid form shortly after being administered and stay solid throughout storage, helping to maintain the stability of dosage forms. Given their many benefits in both liquid and solid dose forms, MDTs might soon be produced for the majority of currently marketed medications.The technologies presented in this article show how current developments in processing and formulation development technologies align with the goals of creating more advanced drug delivery systems (Oral Disintegrating Tablets). ODT's broad importance suggests that this medication delivery method might improve patient compliance and ultimately produce superior therapeutic results. In the future, many additional medication classes may be produced as MDT.

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