Fast Dissolving Tablets: A Strategy to Improve Solubility of Poorly Soluble Compounds

Shubhra Srivastava and Sachin Kumar Yadav

School of Medical and Allied Sciences, Galgotias University, GB Nagar, U.P.-203201

Abstract: Tablet is the most popular among all dosage forms existing today because of its convenience of self administration, compactness and easy manufacturing; however hand tremors, dysphasia in case of geriatric patients, the underdeveloped muscular and nervous systems in young individuals and case of uncooperative patients, the problem of swallowing is common phenomenon which leads to poor patient compliance. To overcome these drawbacks, mouth dissolving tablets (MDT) or orally disintegrating tablets (ODT) has emerged as alternative oral dosage forms. These are novel types; of tablets that disintegrate/dissolve/ disperse in saliva within few seconds. According to European Pharmacopoeia, the ODT should disperse/disintegrate in less than three minutes. The bioavailability of some drugs may be increased due to absorption of drugs in oral cavity and also due to pregastric absorption of saliva containing dispersed drugs that pass down into the stomach. Moreover, the amount of drug that is subject to first pass metabolism is reduced as compared to standard tablets.

Key words: Fast dissolving tablets • Solubility • Bioavailability • Saliva • Granulation • Compression

INTRODUCTION

Oral delivery is currently the gold standard in the pharmaceutical industry where it is regarded as the safest, most convenient and most economical method of drug delivery having the highest patient compliance. Oral route of drug administration have wide acceptance up to 50-60% of total dosage forms. Solid dosage forms are popular because of ease of administration, accurate dosage, self-medication, pain avoidance and most importantly the patient compliance. The most popular solid dosage forms are being tablets and capsules. One important drawback of these dosage forms for some patients however is difficult to swallow [1].

The basic approach used in development of MDT is the use of superdisintegrants like Cross linked carboxymethylcellulose (Crocarmeliose), Sodium starch glycylate (Primogel, Explolab), Polyvinylpyrrolidone (Polyplasdone) etc. which provide instantaneous disintegration of tablet after putting on tongue, thereby releasing the drug in saliva. Recent developments in technology have presented viable dosage alternatives for patients who may have difficulties in swallowing tablets or capsules. Conventional tablets and capsules administered with water may be inconvenient or impractical for other patients. In such conditions there is a requirement of fast disintegrating/dissolving tablets which can be administered without water. Such Fast dissolving/disintegrating tablets (FDDT) disperse rapidly to form a suspension or solution of the drug after mixing with saliva which is easily swallowed by the patients [2].

Fast dissolving drug delivery system have started gaining popularity and acceptance as new delivery system, because they are easy to administer and lead to better patient compliance. However, for the elderly and infants, conventional tablets present certain difficulties while consuming, usually elderly patients experience difficulty in swallowing the conventional dosage forms (tablets, capsules, solutions and suspensions) because of tremors of extremities, dysphagia and extra pyramidal disorders like Parkinsonism etc. In such cases, preference would be given to liquid dosage forms which also have its own disadvantages. Fast dissolving tablets have the added advantages of both solid and liquid dosage forms. More over it is the best way of administration of the medicament to the patient who is mentally ill, disabled and uncooperative [3].
A fast dissolving drug delivery system, in most cases, is a tablet that dissolves or disintegrates in the oral cavity without the need of water or chewing. Most of these fast-dissolving drug delivery systems must include substances to mask the taste of the active ingredient. This masked active ingredient is then swallowed by the patient’s saliva along with the soluble and insoluble excipients. These are also called melt-in-mouth tablets, repimelts, porous tablets, oro-dispersible, quick dissolving or rapid disintegrating tablets [4].

The target population for these new fast dissolving dosage forms have generally been pediatric, geriatric & bedridden or developmentally disabled patients. Patients with persistent nausea, who are travelling or who have little or no access to water are also good candidates for fast dissolving tablets [5].

These are the solid unit dosage forms/entities containing medicinal substances which disintegrate or dissolve rapidly in oral cavity usually within a few seconds even without the need of water or chewing. As the tablet disintegrates in mouth, this can enhance the clinical effect of drug through pregastric absorption from the mouth, pharynx and esophagus in such cases bioavailability of drug is significantly enhanced by avoiding first pass hepatic metabolism than those observed with conventional tablets [6].

Fast Dissolving Tablets (FDT) is defined as “A solid dosage form containing medicinal substances, which disintegrates rapidly, usually within matter of seconds, when placed upon the tongue”. It can also be defined as a solid dosage form that can disintegrate into smaller granules which slowly dissolve in the mouth. The disintegration time for fast dissolving tablet varies from few seconds to more than a minute depending on the formulation and the size of tablet [7].

US Food and Drug Administration Center for Drug Evaluation and Research (CDER) defines, in the ‘Orange Book’, an ODT as “a solid dosage form containing medicinal substances, which disintegrates rapidly, usually within a matter of seconds, when placed upon the tongue”. European Pharmacopoeia described orally disintegrating tablets as ‘uncoated tablets intended to be placed in the mouth where they disperse rapidly before being swallowed’ and as tablets which should disintegrate within 3 minutes [8].

Fast dissolving drug delivery systems have rapidly gained acceptance as an important new way of administering drugs. There are multiple fast-dissolving OTC and Rx products in the market worldwide, most of which have been launched over past 3 to 4 years. There has also been significant increase in the number of new chemical entities under development using a fast-dissolving drug delivery technology. A wide range of drugs can be considered as a candidate for this dosage form [e.g., Analgesics and anti-inflammatory agents, Anti-epileptics, Anti-fungal agents, Antimalarial, Anti-gout agents, Anti-hypertensive agents, Antibacterial-agents, Anti-neoplastic agents, Anti-thyroid agents, Diuretics, Anti-Parkinsonian agents, Anxiolytic, Sedatives, Hypnotics and Neuroleptics, Lipid-regulating agents, Opioid analgesics]. The drugs having poor solubility are generally proposed to be used as a model drug for this dosage form. The low aqueous solubility problem of drugs can be overcome by formulating it into a solid dispersion or by complexation. Hence the drugs having poor solubility are suitable candidates for the proposed work.

Advantages of Fast Dissolving Tablets [9]:

- Improved patient compliance.
- Quick onset of action and improved bioavailability.
- Allow high drug loading.
- Useful for patients who cannot swallow the dosage forms and for pediatric, geriatric and mentally retard patients.
- Frequently administered when water is not available.
- Pleasant mouth feel of the tablet helps to change the perception of medication as bitter pill particularly in pediatric patients.
- Disintegrates rapidly which may result in rapid release of drugs.
- Accurate dose can be given as compared to oral liquids.

Drug Candidate Selection: Suitable drug candidate for orally disintegrating tablet should posses:

- No bitter taste.
- Good stability in water and saliva.
- Dose should be low as possible.

Unsuitable drug candidate for orally disintegrating tablet should include:

- Short half-life and frequent dosing.
- Drug having very bitter taste.
- Required controlled or sustained release.
Characteristics of Fast Dissolving Tablets [10]: An ideal FDT should

- Require no water for oral administration, yet dissolve / disperse/ disintegrate in mouth in a matter of seconds.
- Have a pleasing mouth feel.
- Have an acceptable taste masking property.
- Be harder and less friable.
- Leave minimal or no residue in mouth after administration.
- Exhibit low sensitivity to environmental conditions (temperature and humidity).
- Allow the manufacture of tablet using conventional processing and packaging equipments.

Conventional Methods for Preparation of Fast Dissolving Tablets [11-13]: Preparation of fast dissolving tablets with different super disintegrates will be prepared by wet granulation/ dry granulation/ direct compression/ Intra and Extra granulation or any other suitable appropriate methods. The tablets are also prepared directly by compression of the mixture of drug and excipients without any preliminary treatment. The mixture which is to be compressed must have good flow properties. Few drugs can be directly compressed into tablets of acceptable quality. Use of disintegrants and its concentration is more important. Other factors are considered as particle size, Hardness, pore-size and water absorption capacity. The following methods are used for the preparation of fast dissolving tablets.

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 croscarmellose sodium as disintegrating and an acidic material (e.g. citric acid) and / or alkali material (e.g. sodium bicarbonate) to enhance disintegration and dissolution. Tablet compressed from the spray dried powder disintegrated within 20 seconds when immersed in an aqueous medium.

Direct Compression: It 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. Disintegration and solubilization of directly compressed tablets depends on single or combined action of disintegrants, water soluble excipients and effervescent agent.

Moulding: 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.

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.

Evaluation Parameters [14-16]

Pre Compression Parameters

Angle of Repose: The frictional force in a loose powder can be measured by the angle of repose $\theta$. It is defined as, the maximum angle possible between the surface of the pile of the powder and the horizontal plane. If more powder is added to the pile, it slides down the sides of the pile until the mutual friction of the particles producing a surface angle $\theta$, is in equilibrium with the gravitational force.

The angle of repose was determined by the funnel method suggested by Newman. Angle of repose is determined by the following formula

$$\tan \theta = \frac{h}{r}$$

Therefore $\theta = \tan^{-1} \frac{h}{r}$

Where, $\theta$ = Angle of repose

$h$ = height of the cone

$r$ = Radius of the cone base

Angle of Repose less than 30° shows the free flowing of the material.
Table 1: Flow properties of powder

<table>
<thead>
<tr>
<th>Flow properties</th>
<th>Repose angle (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>25-30</td>
</tr>
<tr>
<td>Good</td>
<td>31-35</td>
</tr>
<tr>
<td>Fair</td>
<td>36-40</td>
</tr>
<tr>
<td>Passable</td>
<td>41-45</td>
</tr>
<tr>
<td>Poor</td>
<td>46-55</td>
</tr>
<tr>
<td>Very poor</td>
<td>56-65</td>
</tr>
<tr>
<td>Very very poor</td>
<td>&gt;66</td>
</tr>
</tbody>
</table>

Table 2: Effect of % Compressibility index on flow ability of powder

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>% Compressibility</th>
<th>Flow ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5-12</td>
<td>Excellent</td>
</tr>
<tr>
<td>2</td>
<td>12-16</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>18-21</td>
<td>Fair passable</td>
</tr>
<tr>
<td>4</td>
<td>23-35</td>
<td>Poor</td>
</tr>
<tr>
<td>5</td>
<td>33-38</td>
<td>Very poor</td>
</tr>
<tr>
<td>6</td>
<td>&lt;40</td>
<td>Very very poor</td>
</tr>
</tbody>
</table>

Table 3: Weight variation of tablet

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Average weight of tablet</th>
<th>% Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80 mg or less</td>
<td>±10</td>
</tr>
<tr>
<td>2</td>
<td>More than 80 mg but less than 250 mg</td>
<td>±7.5</td>
</tr>
<tr>
<td>3</td>
<td>250 mg or more</td>
<td>±5</td>
</tr>
</tbody>
</table>

**Bulk Density:** Density is defined as weight per unit volume. Bulk density, \( p_b \), is defined as the mass of the powder divided by the bulk volume and is expressed as gm/cm\(^3\). The bulk density of a powder primarily depends on particle size distribution, particle shape and the tendency of particles to adhere together. There are two types of bulk density. The particles are pack in such a way so as to leave large gaps between their surfaces resulting up in light powder of low bulk density. Here the smaller particles shift between the large particles resulting in heavy powder of high bulk density.

Bulk density is very important in the size of containers needed for handling, shipping and storage of raw material and blend. It is also important in size blending equipment. A standard procedure used for obtaining bulk density or its reciprocal bulkiness is given, below. A sample of about 50 cm\(^3\) (blend) is carefully introduced in a 100ml graduated cylinder. The cylinder is dropped onto a hard wood surface three times from a height of 1 inch at two second interval. The bulk density is then obtained by dividing the weight of sample in gms by final volume in cm\(^3\).

\[
P_b = \frac{M}{V}
\]

where,

- \( P_b \) = Bulk Density
- \( M \) = Weight of sample in gm
- \( V \) = Final volume of blend in cm\(^3\)

**Tapped Density:** After measuring the bulk volume the same measuring cylinder is set into tap density apparatus. The tap density apparatus is set to 300 taps drop per minute and operated for 500 taps. Volume is noted as (\( V_a \)) and again tapped for 750 times and volume is noted as (\( V_b \)). If the difference between \( V_a \) and \( V_b \) not greater than 2% then \( V_b \) is consider as final tapped volume. The tapped density is calculated by the following formula

\[
\text{Tapped density} = \frac{\text{Weight of powder}}{\text{Tapped volume}}
\]

**Compressibility Index:** It measures the propensity of powder to be compressed and the flow ability of powder. It is defined as,

\[
\text{Carr's index} = \frac{\text{Tapped density} - \text{Bulk density}}{\text{Tapped density}} \times 100
\]

If the bed of particles is more compressible the blend will be less flowable and flowing materials.

**Post Compression Parameters**

**Weight Variation:** The 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.

**Hardness:** Hardness of tablet is defined as the force applied across the diameter of the tablet in the order to break the tablet. The resistance of the tablet to chipping, abrasion or breakage under condition of storage transformation and handling before usage depends on its hardness. Hardness of the tablet of each formulation was determined using Monsato Hardness tester.

**Thickness:** Tablet thickness is an important characteristic in reproducing appearance and also in counting by using filling equipment. Some filling equipment utilizes the uniform thickness of the tablets as a counting mechanism. Ten tablets were taken and their thickness was recorded using micrometer.

**Friability:** It is measured of mechanical strength of tablets. Roche friabilator was used to determine the friability by following procedure. A pre weighed tablet was placed in the friabilator. Friabilator consist of a plastic-chamber that revolves at 25 rpm, dropping those tablets at a distance of 6 inches with each revolution.
The tablets were rotated in the friabilator for at least 4 minutes. At the end of test tablets were dusted and reweighed, the loss in the weight of tablet is the measure of friability and is expressed in percentage as

\[
\text{%Friability} = \frac{\text{loss in weight}}{\text{Initial weight}} \times 100
\]

**In-vitro Disintegration Time:** Disintegration time was measured in artificial saliva [pH 5.8] of 900 ml according to methods specified in pharmacopoeias 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 Dissolution Time:** Dissolution studies for tablets are carried out to check the dissolution time. For dissolution the methods specified in pharmacopoeias is followed and the time in min taken for complete dissolution of the tablet was measured. Tablets of each batch were taken and average of all results was considered as percent drug release. Dissolution was carried out up to 24-72 hrs. using the United States Pharmacopoeia (USP) XXIV dissolution testing apparatus II (paddle method). The dissolution test was performed using 900 ml of 0.1 N HCl, at 37±0.5°C and 50rpm. A sample (5 ml) of the solution was withdrawn from the dissolution apparatus at different time intervals. Absorbance of these solutions was measured using a UV/Vis double beam spectrophotometer. Cumulative percentage of drug release is calculated using the equation obtained from a standard curve.

**Drugs to Be Promising Incorporated in Fast Dissolving Tablets [17-19]:** There are no particular limitations as long as it is a substance which is used as a pharmaceutical active ingredient.

**Analgesics and Anti-inflammatory Agents:** Aloxiprin, Auranofin, Azapropazone, Benorylate, Diflunisal, Etodolac, Fenbufen, Fenoprofen Calcium, Flurbiprofen, Ibuprofen, Indomethacin, Ketoprofen, Meclofenamic Acid, Mefenamic Acid, Nabumetone, Naproxen, Oxaprozin, Oxymetholone, Phenylbutazone, Piroxicam, Sulindac.

**Anthelmintics:** Albendazole, Bephenium Hydroxynaphthoate, Cambendazole, Dichlorophen, Ivermectin, Mebendazole, Oxarnnique, Oxendazole, Oxantel Embonate, Praziquantel, Pyrantel Embonate, Thiabendazole.

**Anti-Arrhythmic Agents:** Amiodarone, Disopyramide, Flecainide Acetate, Quinidine Sulphate,

**Anti-Bacterial Agents:** Benethamine Penicillin, Cinoxacin, Ciprofloxacin, Clarithromycin, Clofazimine, Cloxacillin, Demeclocycline, Doxycycline, Erythromycin, Ethionamide, Imipenem, Nalidixic Acid, Nitrofurantoin, Rifampicin, Spiramycin, Sulphabenzamide, Sulphadoxine, Sulphamerazine, Sulphacetamide, Sulphadiazine, Sulphafurazole, Sulphamethoxazole, Sulphapyridine, Tetracycline, Trimethoprim.

**Anti-Coagulants:** Dicoumarol, Dipyridamole, Nicoumalone, Phenindione. Anti-Depressants: Amoxapine, Citalopram, Mianserin, Nortriptyline, Trazodone, Trimipramine Maleate., Acetohexamide, Chloropropamide, Glibenclamide, Glucoside, Glipizide, Sotalol, Tolbutamide.

**Anti-Epileptics:** Beclamide, Carbamazepine, Clonazepam, Ethotoin, Methon, Methsuximide, Methylphenobarbitone, Oxcarbazepine, Peramethadione, Phenacemide, Phenobarbitone, Phencytoin, Phensuximide, Primidone, Sulthiame, Valproic Acid.

**Anti-Fungal Agents:** Amphotericin, Butoconazole Nitrate, Clotrimazole, Econazole Nitrate, Fluconazole, Flucytosine, Griseofulvin, Itraconazole, Ketoconazole, Miconazole, Natamycin, Nystatin, Sulconazole Nitrate, Terbinafine, Terconazole, Ticlozamide, Undecenoic Acid.

**Anti-Gout Agents:** Allopurinol, Probencid, Sulphinpyrazone.

**Anti-Hypertensive Agents:** Amlodipine, Carvedilol, Benidipine, Darodipine, Dilatazem, Diazoxide, Felodipine, Guanabenz Acetate, Indoramin, Isradipine, Minoxidil, Nicardipine, Nifedipine, Nimodipine, Phenoxybenzamine, Prazosin, Reserpine, Terazosin.

**Anti-Malarials:** Amodiaquine, Chloroquine, Chlorproguanil, Halofantrine, Mefloquine, Proguanil, Pyrimethamine, Quinoline Sulphate. Anti-Migraine Agents: Dihydroergotamine Mesyiate, Ergotamine Tartrate, Methysergide Maleate, Pizotifen Maleate, Sumatriptan Succinate.

**Anti-Muscarinic Agents:** Atropine, Benzhexol, Biperiden, Ethopropazine, Hyoscine Butyl Bromide, Hyoscyamine, Mepenzolate Bromide, Orphenadrine, Oxyphencyclimine, Tropicamide.
Anti-Neoplastic Agents And Immunosuppressants: Aminoglutethimide, Amsacrine, Azathioprine, Busulphan, Chlorambucil, Cyclosporin, Dacarbazine, Estramustine, Etoposide, Lomustine, Melphalan, Mercaptopurine, Methotrexate, Mitomycin, Mitotane, Mitozantrone, Procarbazine, Tamoxifen Citrate, Testolactone.

Anti Protozoal Agents: Benzimidazole, Clioquinol, Decoquinate, Diarydroxyquinoline, Diloxanide Furoate, Dinitolmide, Furzolidone, Metronidazole, Nimorazole, Nitrofurazone, Omidazole, Tinidazole.

Anti-Thyroid Agents: Carbimazole, Propylthiouracil.


Cardiac Inotropic Agents: Amrinone, Digitoxin, Digoxin, Enoximone, Lanatoside C, Medigoxin.

Corticosteroids: Beclomethasone, Betamethasone, Budesonide, Cortisone Acetate, Desoxymethasone, Dexamethasone, Fludrocortisone Acetate, Flunisolide, Fluortolone, Fluticasone Propionate, Hydrocortisone, Methylprednisolone, Prednisolone, Prednisone, Triamcinolone.

Diuretics: Acetazolamid, Amiloride, Bendrofluaizide, Bumetanide, Chlorothiazide, Chlorthalidone, Ethacrynic Acid, Frusemide, Metolazone, Spironolactone, Triamterene.

Enzymes: All Enzymes.

Anti-Parkinsonian Agents: Bromocriptine Mesylate, Lysuride Maleate.

Gastro-Intestinal Agents: Bisacodyl, Cimetidine, Cisapride, Diphenoxylate, Domperidone, Famotidine, Loperamide, Mesalazine, Nizatidine, Omeprazole, Ondansetron, Ranitidine, Sulphasalazine.

Histamine H₁-Receptor Antagonists: Acrivastine, Astemizole, Cinnarizine, Cyclizine, Cyproheptadine, Dimenhydrinate, Flunarizine, Loratadine, Meclozine, Oxatamide, Terfenadine, Triprolidine.

Lipid Regulating Agents: Bezaflibrate, Clofibrate, Fenofibrate, Gemfibrozil, Probucol.

Local Anaesthetics: Lidocaine.


Nutritional Agents: Beta-Carotene, Vitamin A, Vitamin B₂, Vitamin D, Vitamin E, Vitamin K.

Opioid Analgesics: Codeine, Dextropropoxyphene, Diamorphine, Meptazinol, Methadone, Morphine, Nalbuphine, Pentazocine.

Oral Vaccines: Vaccines designed to prevent or reduce the symptoms of diseases of which the following is a representative Influenza, Tuberculosis, Meningitis, Hepatitis, Whooping Cough, Polio, Tetanus, Diphtheria, Malaria, Cholera, Herpes, Typhoid, Hiv, Aids, Measles, Lyme Disease, Travellers Diarrhea, Hepatitis A, B And C, Otitis Media, Dengue Fever, Rabies, Paramflu, Rubella, Yellow Fever, Dysentery, Legionnaires Disease, Toxoplasmosis, Q-Fever, Rubella, Yellow Fever, Dysentery, Legionnaires Disease, Toxoplasmosis, Q-Fever, Argentina Haemorrhagic Fever, Caries, Chagas Disease, Urinary Tract Infection Caused By E.Coli, Pneumococcal Disease, Mumps.

Proteins, Peptides and Recombinant Drugs: Insulin (Hexameric/Dimeric/MonomericForms), Glucagon, Growth Hormone (Somatotropin), Polypeptides or Their Derivatives, (Preferably With A Molecular Weight From 1000 To 300,000), Calcium and Synthetic Modifications Thereof, Enkephalins, Interferons (Especially Alpha-2 Inter Feron For Treatment Of Common Colds).

Sex Hormones: Clomiphene Citrate, Danazol, Ethinylestradiol, Medroxyprogesterone Acetate, Mestranol, Methyltestosterone, Norethisterone, Norgestrel, Oestadiol, Conjugated Oestrogens, Progesterone, Stanozolol, Stibostrol, Testosterone, Tibolone.
Table 4: Marketed Fast Dissolving Tablets in India

<table>
<thead>
<tr>
<th>Name of the product</th>
<th>Active Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imodium Lingual</td>
<td>Imodium</td>
</tr>
<tr>
<td>Pepcidin Rapitab</td>
<td>Quick releasing antiulcer preparation of pepcid</td>
</tr>
<tr>
<td>Mosid – MT</td>
<td>Mouth melt tablet of Mosapride citrate.</td>
</tr>
<tr>
<td>Calritin Reditabs</td>
<td>Immediate Dissolving formulation of Calritin</td>
</tr>
<tr>
<td>Nimulid – MD</td>
<td>Nimesulide</td>
</tr>
<tr>
<td>Zyrof Meltab</td>
<td>Rofecoxib</td>
</tr>
<tr>
<td>Claritin Rediatab</td>
<td>Micronized loratadine</td>
</tr>
<tr>
<td>Feldene Melt</td>
<td>Piroxicam (10 or 20 mg),</td>
</tr>
<tr>
<td>Maxalt-MLT</td>
<td>Rizatriptan (5 or 10 mg), peppermint flavour</td>
</tr>
<tr>
<td>Pepcid RPD</td>
<td>Famotidine (20 or 40 mg),</td>
</tr>
<tr>
<td>Zyprexa Zydis</td>
<td>Olanzapine (5, 10, 15 or 20 mg),</td>
</tr>
<tr>
<td>Zofran ODT</td>
<td>Ondansetron (4 or 8 mg), strawberry flavor</td>
</tr>
<tr>
<td>Remeron Soltab</td>
<td>Mirtazepine (15, 30, or 45 mg), orange flavor</td>
</tr>
</tbody>
</table>

Stimulants: Amphetamine, Dexamphetamine, Dexfenfluramine, Fenfluramine, Mhazindol, Pemoline.

CONCLUSION

The main aim of fast dissolving tablets is to constitute an innovative dosage form, which overcomes the problem of swallowing and provides a quick onset of action. Also fast dissolving dosage forms have solved some of the problems encountered in administration of drugs to the pediatric and elderly patient, which constitutes a large proportion of the world's population. The availability of the various technologies and manifold advantages of Fast dissolving tablets will surely increase its popularity in the near future. Hence, patient demand and the availability of various technologies have increased the market share of Fast dissolving tablets, which in turn prolongs the patent life of a drug and because of increased patient demand, these dosage forms are expected to become more popular.

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