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A Review of Formulation Technology for Recent Advancements in Fast Dissolving Tablets

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Abstract:- The design of the oral drug delivery system, which is still the dominant method of drug delivery despite a number of drawbacks, must take into account the ease of administration and increased patient compliance. Due to the insufficient development of the muscular and neurological systems in children, as well as cases of elderly individuals with Parkinson's disease or hand tremors, fast-dissolving tablets have become one of the most well-liked and widely recognised dose forms. Today's solid dosage forms, such as capsules and tablets, are dealing with issues like dysphagia, which leads to numerous instances. In mouth dissolving tablets superdisintegrants are incorporated in right amount for quick disintegration with improved bioavailability.FDTs either disintegrate or dissolve rapidly in saliva without the need for water. Real fast-dissolving tablets are made to dissolve in saliva incredibly quicklyin less than 60 seconds. By using different processes, such as direct compression, tablet moulding, freeze drying, and spray drying nanonization, one can create a drug delivery system that dissolves quickly.This article provides a brief description of FDTs, including their definition, benefits, uses, key characteristics, drawbacks, problems in their development, Technology used for manufacturing of fast dissolving tablets, Common excipients used in fast dissolving tablets and commercially available fast-dissolving tablet formulations.

Keywords:- *Oral drug delivery, Fast dissolving tablet, Superdisintegrants, Bioavailability, Technology.*

I. INTRODUCTION

A wide range of pharmaceutical research is being conducted in order to discover novel dosage formulations. The majority of these efforts have been directed towards developing novel drug delivery systems or boosting patient compliance. The most popular commercial product is the fast-dissolving tablet (FDT). The oral route of drug administration is the most desired and approved method of administration by patients. [1] Oral methods of medication delivery are widely accepted, accounting for 50- 60% of total dosage forms. Solid dosage forms are popular due to their ease of administration, correct dosing, self-medication, pain avoidance, and, most importantly, patient compliance. The most common solid dosage forms are tablets and capsules; one significant disadvantage of these dosage forms for some individuals is their difficulty in swallowing. Water plays a crucial function in the ingestion of oral dose forms. People often have difficulty swallowing conventional dosage forms such as tablets when water is unavailable, in the case of motion sickness (kinetosis), and sudden episodes of coughing during the common cold, allergic reaction, and bronchitis. [2]Swallowing difficulties are common in senior patients due to choking fears, hand tremors, dysphasia, in young people due to underdeveloped muscular and neurological systems, and in schizophrenia patients, resulting in poor patient compliance. Approximately one-third of the population (mostly children and the elderly) has swallowing difficulties, resulting in poor compliance with oral tablet drug therapy and reduced overall therapeutic effectiveness. As a result, tablets that dissolve or disintegrate quickly in the oral cavity have garnered a lot of interest.

The US Food and Drug Administration (USFDA) defines a fast-dissolving tablet (FDT) as "a solid dosage form containing a medicinal substance or active ingredient that disintegrates rapidly, usually within seconds, when placed on the tongue." [3]

Disintegration is an important stage in demonstrating the activity of any solid unit dosage form, such as tablets or capsules. Disintegrating agents are used in the solid dosage forms in this regard. Disintegrants are substances that aid in the breakdown of tablets into small particles or fragments when they come into contact with an aqueous environment. Fast disintegration is required for faster medication release and activity in the case of mouth dissolving tablets, hence superdisintegrants are added to enable rapid disintegration. They are utilised at a lower concentration of 1-10% by weight of the total weight of the dose units. Different types of superdisintegrants are available and are utilised in the formulation of mouth dissolving tablets based on their source and mechanism of action.Tablet disintegration is affected by a variety of superdisintegrant variables, including. [4]

A. Criteria for Fast Dissolving Delivery system

- It does not need to be swallowed with water, but it should dissolve or disintegrate in the mouth in a matter of seconds.
- Be tolerant of taste masking.
- Be portable without concern for fragility.
- Have an enjoyable taste in your mouth.
- After oral administration, leave little or no residue in the mouth.

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- Low sensitivity to external conditions such as temperature and humidity. [5]

B. Salient feature of Fast Dissolving Drug Delivery

- Ease of administration for patients who cannot swallow, such as the elderly, stroke victims, bedridden patients, patients with renal failure, and individuals who refuse to swallow, such as paediatric, geriatric, and psychiatric patients.
- There is no need for water to consume the dosage form, which is a very useful feature for people who are travelling and do not have easy access to water.
- Rapid dissolving and absorption of the medicine, resulting in a rapid beginning of action.
- As saliva flows down into the stomach, some medications are absorbed from the mouth, throat, and oesophagus. In such circumstances, the drug's bioavailability is increased.
- Pre-gastric absorption can result in improved bioavailability and lower dosage; improve clinical performance by reducing undesired effects.
- The risk of choking or suffocation during oral administration of traditional formulation is reduced as a result of physical obstruction, giving greater safety.
- New commercial opportunities such as product diversification, advertising, patent extensions, and life cycle management.
- Useful in situations requiring an ultra-rapid commencement of action, such as motion sickness, quick episodes of allergic response, or coughing. [6,7,8]

C. Benefits of fast dissolving tablets

- Rapid disintegration and dissolving of these tablets result in enhanced bioavailability, particularly for insoluble and hydrophobic drugs.
- Beneficial in situations requiring an ultra-rapid onset of effect, such as motion nausea, severe instances of allergy response, or coughing.
- Suitability for geriatric and paediatric patients who have swallowing difficulties, as well as other groups who may have problems using traditional oral dosage forms due to being mentally ill, developmentally disabled, or sick.
- Administered anywhere, at any time, without the use of water. [9]

II. TECHNOLOGY USED FOR MANUFACTURING OF FAST DISSOLVING TABLETS

Various ways have been attempted to formulate fast dissolving tablets;

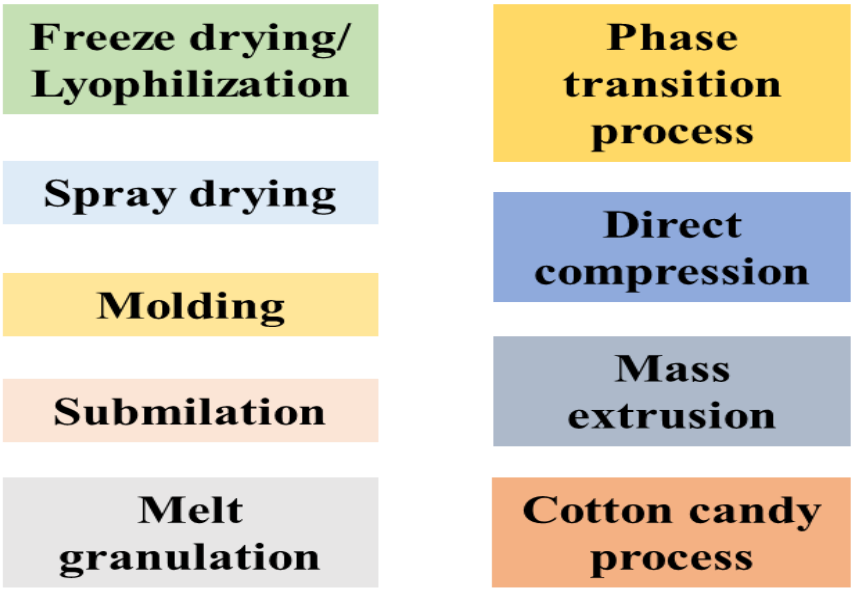

Fig. 1: Different types of technology

- **Freeze drying/Lyophilization:** The formation of porous products during the freeze-drying process is used in the formulation of FDTs.Lyophilization is the removal of solvent from a frozen suspension or solution of medication with structure-forming ingredients. Freeze-drying the medication with additives results in a very porous and lightweight product with a glossy amorphous structure. When placed on the tongue, the resulting tablet has rapid disintegration and dissolution, and the freeze-dried unit dissolves instantaneously to release the medication. However, lyophilized FDTs have limited mechanical strength and poor stability at higher temperatures and humidity. [10]

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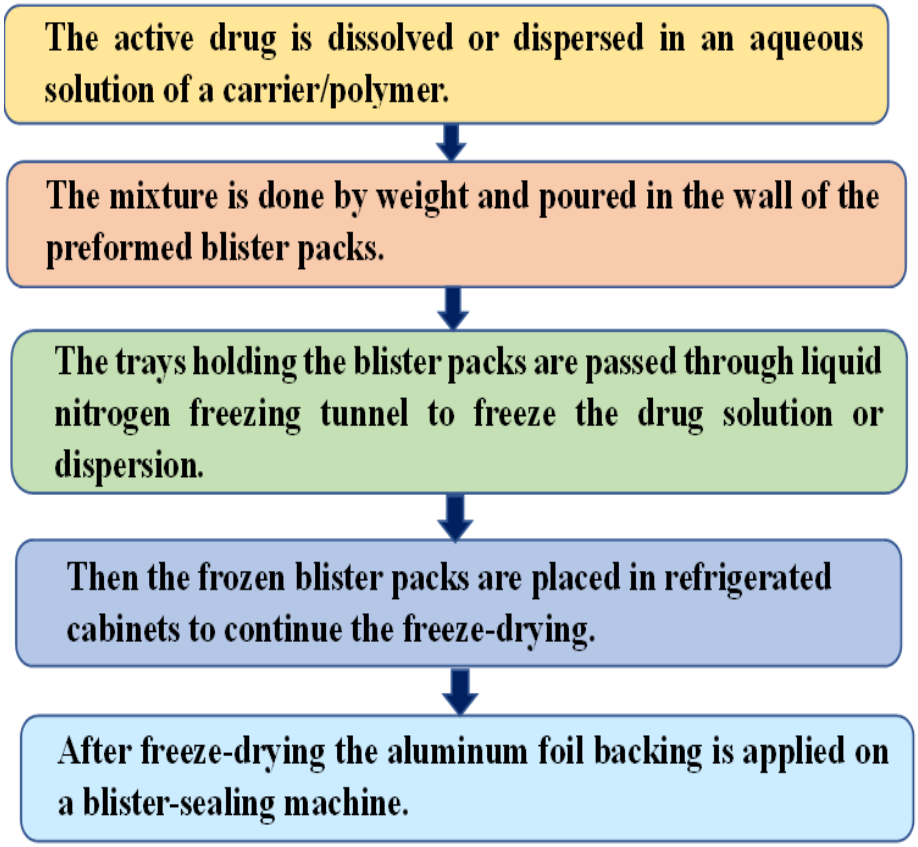

Fig. 2: Steps involved in Freeze drying

- **Molding:** Moulded tablets are manufactured utilising water-soluble components in this process, allowing the tablets to dissolve completely and quickly.The powder blend is wet with a hydroalcoholic solvent before being moulded into tablets at a pressure lower than that used in conventional tablet compression. The solvent is subsequently removed by air-drying.Moulded tablets are far less compact than compressed tablets. These have porous structures that help in dissolution.

Moulding techniques are split into two types: solvent method and heat method. Solvent-produced tablets are less compact than compressed tablets and have a porous structure that favours dissolving. The mechanical strength of produced tablets is a serious concern. Binding agents that improve the mechanical strength of the tablets must be added. The disguised drug particles are created by spray congealing a molten mixture of hydrogenated polyethylene glycol, cottonseed oil, lecithin, and sodium carbonate, an active component, into a lactose-based tablet triturate form.

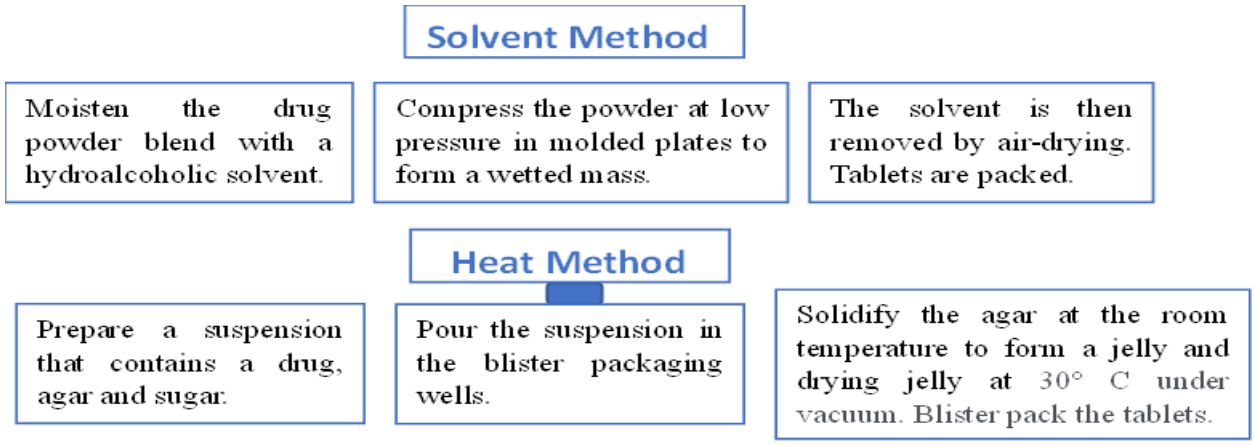

Fig. 3: Solvent and heat method

- **Cotton candy process:** This method is named from the floss-like crystalline structure it produces, which resembles cotton candy. Cotton candy is made by simultaneously flash melting and spinning polysaccharides or saccharides into a matrix. The produced matrix is partially re-crystallized to increase flow and compressibility. After milling and blending with active ingredients and excipients, the candy floss matrix is compacted into FDTs.

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- **Spray drying-** As the processing solvent evaporates during the operation, this method yields very porous and fine particles 11. In this approach, hydrolysed and nonhydrolyzed gelatin were utilised as supporting matrix, mannitol as bulking agent, and sodium starch glycolate or croscarmellose sodium as superdisintegrant. Disintegration and dissolution were increased further by adding acidic chemicals such as citric acid or alkali compounds such as sodium bicarbonate. This formulation procedure results in porous powder with a disintegration time of 20 seconds.

In this method, gelatin is used as a matrix and a supporting ingredient, along with mannitol as a bulking agent and super disintegrants like croscarmellose, sodium starch glycolate, and Crospovidone. Tablets made from spray-dried powder comprising a bulking agent, a superdisintegrant, an acidic ingredient (citric acid), and/or an alkaline ingredient (e.g., sodium bicarbonate) dissolve in less than 20 seconds in aqueous medium. This spray-dried powder, crushed into tablets, decomposed quickly and was well absorbed.

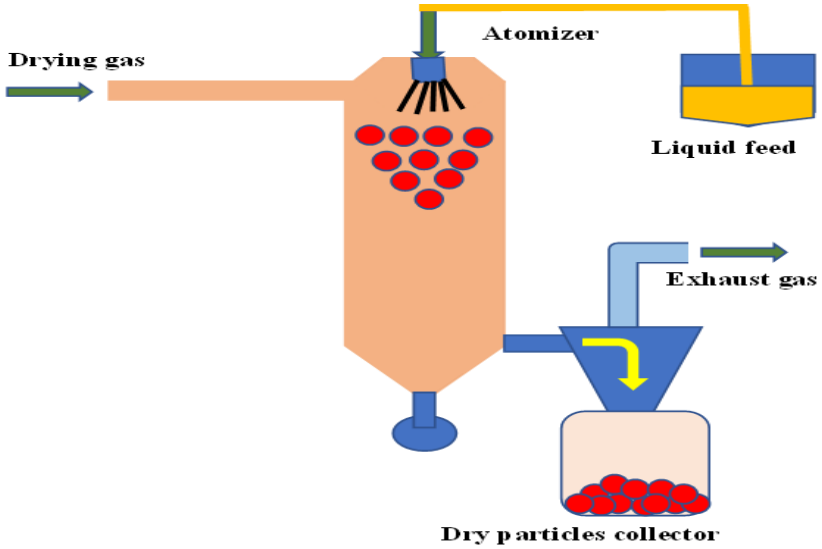

Fig. 4:Spray Drying Method

- **Submilation:** Sublimation occurs when volatile chemicals are combined to form a porous combination. Highly volatile compounds that may be compacted into a tablet with additional excipients include benzoic acid, ammonium bicarbonate, ammonium carbonate, camphor, naphthalene, urea, phthalic anhydride, and urethane. Sublimation is used to eliminate the volatile element, leaving a very porous matrix. It has been stated that this technology can produce pills that disintegrate in 10-20 seconds. Solvents such as benzene and cyclohexane can be utilised as pore generating agents.

The presence of a very porous structure in the tablet matrix is critical for MDT breakdown. Despite the fact that typical tablets include highly water-soluble chemicals, they frequently fail to disintegrate quickly due to limited porosity. To increase porosity, volatile chemicals like camphor can be utilised in the tableting process and sublimated from the created tablet. Camphor, a subliming substance extracted from compressed tablets produced with mannitol and camphor, was used to create FDTs. Camphor was sublimated in a vacuum at 80°C for 30 minutes after the tablets were prepared. [16]

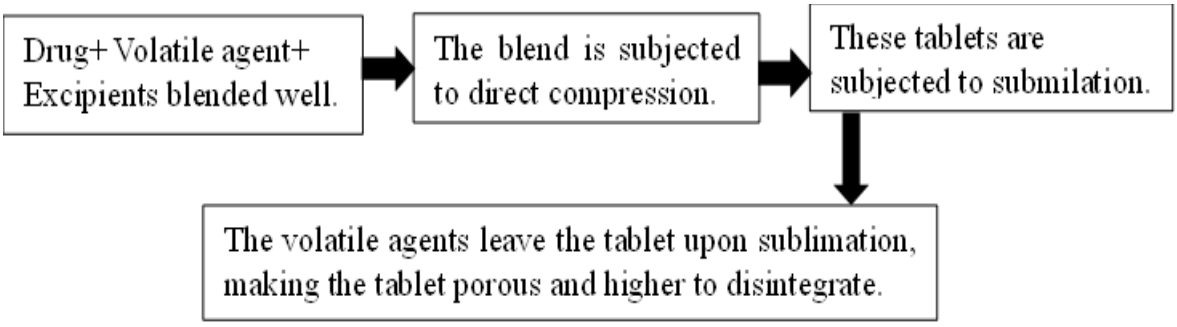

Fig. 5: Steps involved in Sublimation method

- **Mass-Extraction-**In this method, the active blend is softened using a solvent solution of water-soluble polyethylene glycol and methanol, and the softened mass is then ejected through an extruder or syringe to divide a cylindrical product into even segments using a heated blade to produce tablets.The active mixture is softened using a separate solvent composed of water-soluble methanol and polyethylene glycol, and the softened mass

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is then extruded using a syringe or extruder to create a cylinder product. The cylinder product is then cut into even segments using a heated blade to form a tablet. The dried cylinder can also be used to coat bitter medicine pellets to hide their flavour. [11-22]

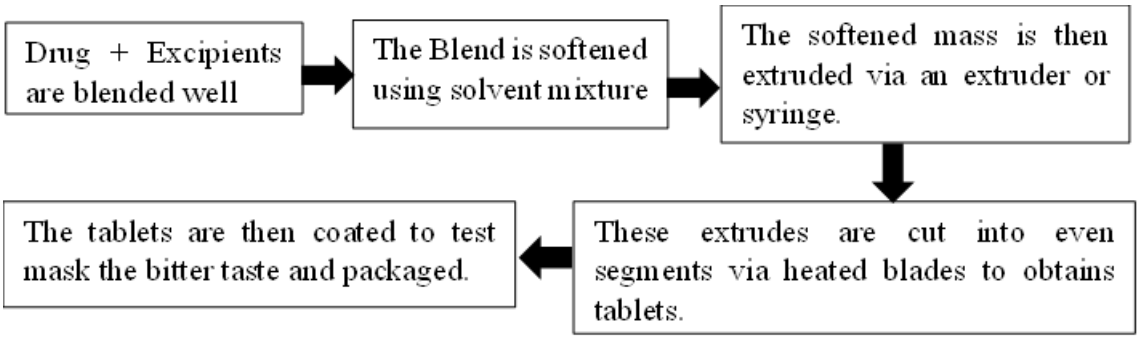

Fig. 6: Steps involved in Mass Extraction methods

- **Direct compression-**The simplest and most economical method of producing tablets is direct compression. Due to the availability of better excipients, particularly superdisintegrants and sugar-based excipients, this technology can now be used to prepare FDT.Due to the fact that it requires a minimum of production processes and is therefore the simplest and most affordable approach, direct compression (DC) is the most practical method of producing tablets. The two basic steps of this procedure are to first mix the API with the appropriate excipients and then compress the powder mixture into tablets. Direct compression has several advantages over other manufacturing processes, including lower capital, labour, and energy costs, and most importantly, there is no need for water throughout the entire process, making it the best method for producing tablets from moisture-sensitive drug substances. When formulation ingredients can flow uniformly into a die cavity without adhering, direct compression is used.

- **Different direct compression techniques**

One or more of the following techniques can be used to produce tablets utilising the direct compression method:

- Direct compression approach using induced die feeders.
- The use of dry binders in direct compression.
- The use of direct compression excipients in direct compression techniques. [23-25]

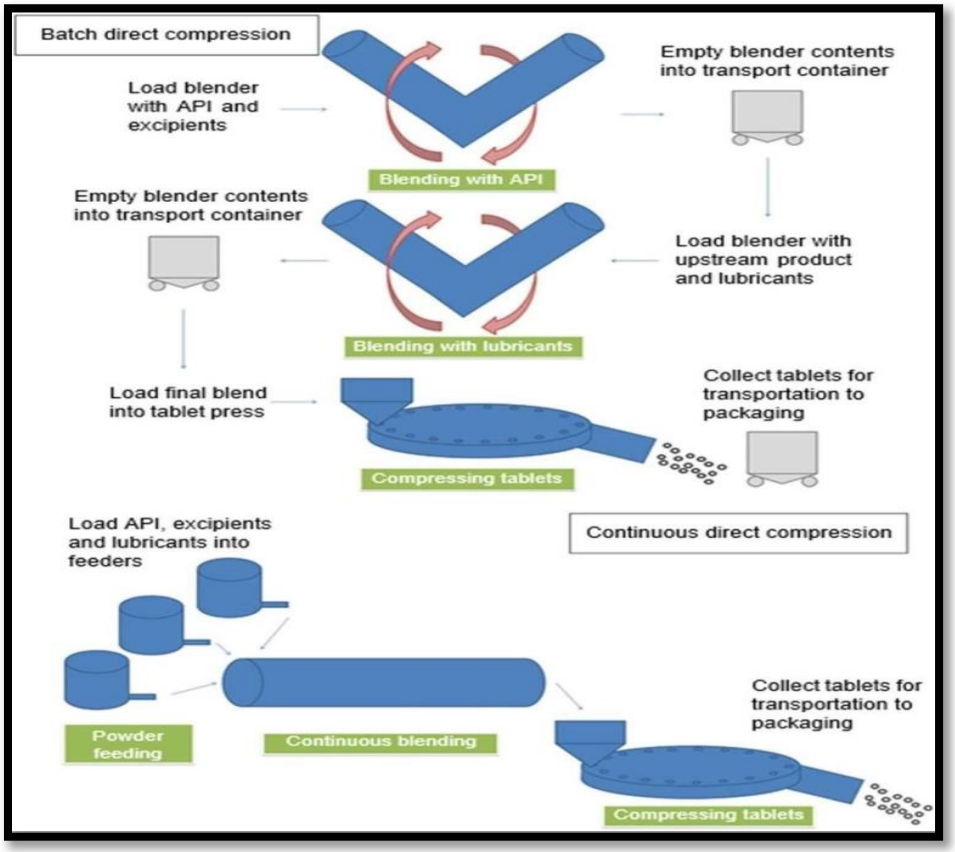

Fig. 7: Direct compression techniques

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III. BASIC STEPS INVOLVED IN DIRECT COMPRESSION TECHNIQUE

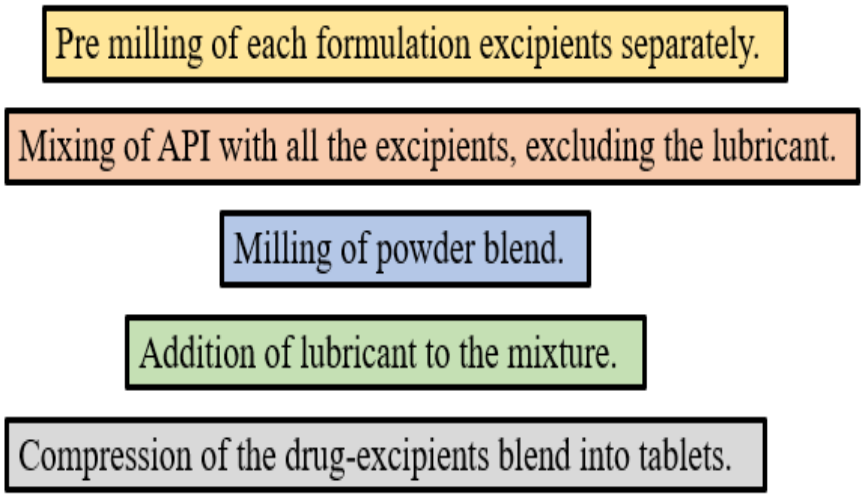

Fig. 8: Steps involved in direct compression method

PATENTED TECHNOLOGIES FOR FAST DISSOLVING TABLETS

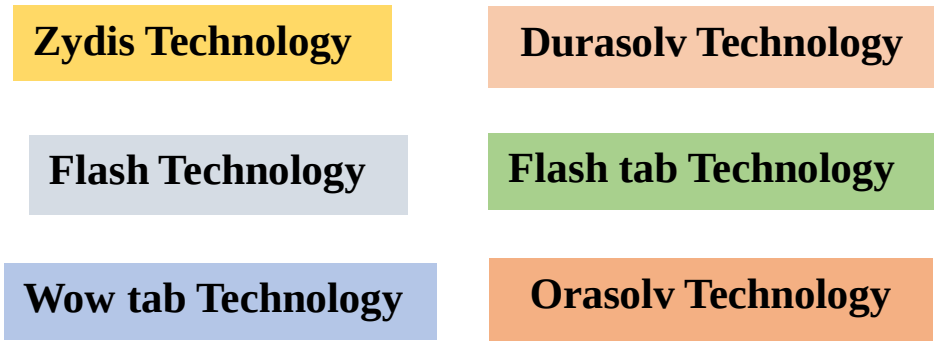

Fig. 9: Different Patented technologies

- **Zydis Technology**-The first newly marketed tablet was Zydis, the most well-known of the fast-dissolving/disintegrating tablet formulations. Within seconds, the tablet dissolves in the mouth. A Zydis tablet is made by lyophilizing or freeze-drying the medication in a gelatin-based matrix. The product must be distributed in a unique blister pack because it is extremely fragile and light. Patients should be instructed to peel back the foil sheet instead of pushing the tablets through it in order to release them. The Zydis product is designed to dissolve in 2 to 3 seconds when placed on the tongue.Due to the final water concentration in the freeze-dried product being too low to support microbial development, the Zydis formulation is also self-preserving.

While different gums are used to prevent the sedimentation of dispersed drug particles in the manufacturing process, water is used to ensure the production of porous units toachieve rapid disintegration. Glycine and other collapse protectors stop zydis units from contracting during the freeze-drying process or during long-term storage.

- **Durasolv Technology-** CIMA Labs' proprietary technique is called Durasolv. This method creates tablets that contain a medication, fillers, and lubrication. Typical tableting equipment is used to create tablets, which are well-rigid. These can be put into a standard packaging system like blisters. For solutions that need only small amounts of active chemicals, Durasolv is the right technology.

- **Orasolv Technology-** Orasolv Technology has been created by CIMA labs. This technique masks the taste of the active medication. Effervescent disintegrating agent is also present.To reduce the amount of time needed for oral dissolving, tablets are manufactured using the direct compression technique at low compression force. The tablets are produced using standard blenders and tablet presses. The manufactured tablets are pliable and squishy.

- **Flash tab Technology-** Fuisz has patented flash dosage technology. The first commercially available ibuprofen product made using flash dosage technology is called Nurofen Meltlet.introduction of a product by Biovail Corporation. The "floss" component of flash dosage tablets is a self-binding shearform matrix.Flash heat processing is used to create shearform matrices.

- **Wow tab Technology-** Yamanouchi Pharmaceutical Co. has a patent on Wowtab Technology. WOW is short for "Without Water." To create a rapidly melting, robust tablet, a combination of low mouldability and high

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mouldability saccharides is used in this procedure. The active substance is combined with a saccharide that is low in moldability, granulated with a saccharide that is high in moldability, and compacted into a tablet.

- **Flash Technology-** The Flashtab technology is a trademark of Prographarm laboratories. This technique produces tablets that include a tiny crystallised active component. Drug micro granules can be made utilising traditional methods including coacervation, micro encapsulation, and extrusion spheronization. Conventional tabletting technology was used for all of the processing. Coacervation, micro encapsulation, and extrusion spheronization are examples of traditional methods that can be used to create drug micro granules. Conventional tableting technology was used for all of the processing.[26-30]

- **Mechanism of tablets disintegration:** Capillary action is followed by the expansion of superdisintegrants particles in the mechanism of disintegration of dispersible tablets. A dispersible tablet starts to dissolve when it touches water or saliva. The particles of the super disintegrants swell when there is water present, which is what causes this. Water can enter the pores that the swelling SD particles create. This results in the tablet's surface eroding, followed by a quick disintegration of the entire tablet, leaving it suspended in water. [31]

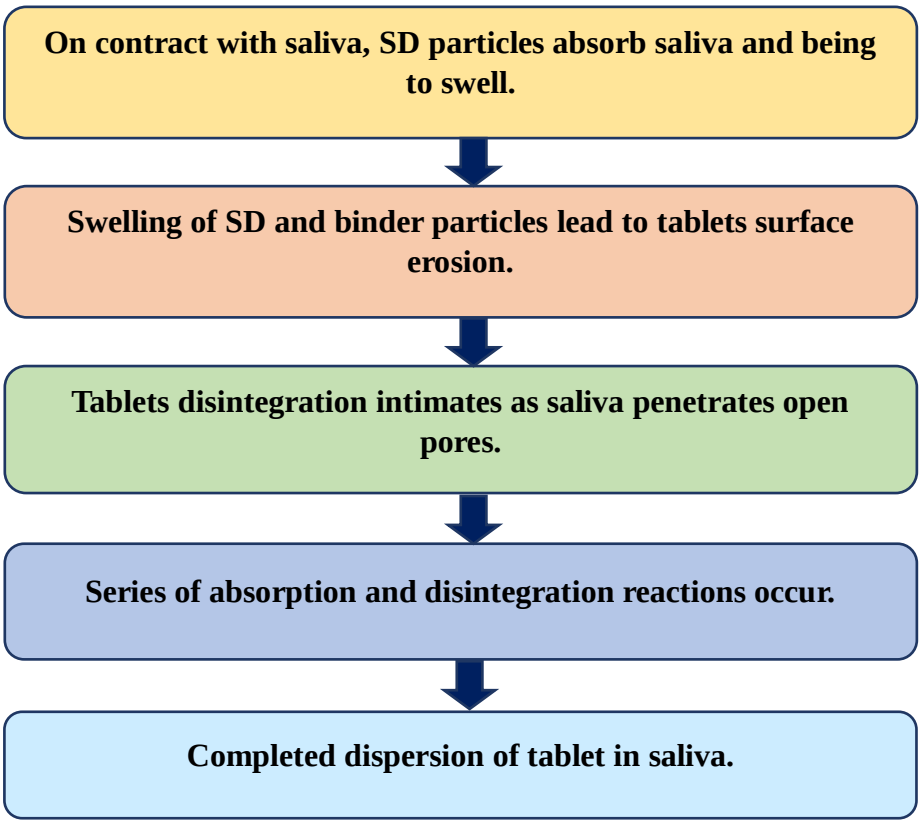

Fig. 10: Mechanism of tablets disintegration

COMMON EXCIPIENTS USED IN FAST DISSOLVING FORMULATION

A. Croscarmellose Sodium

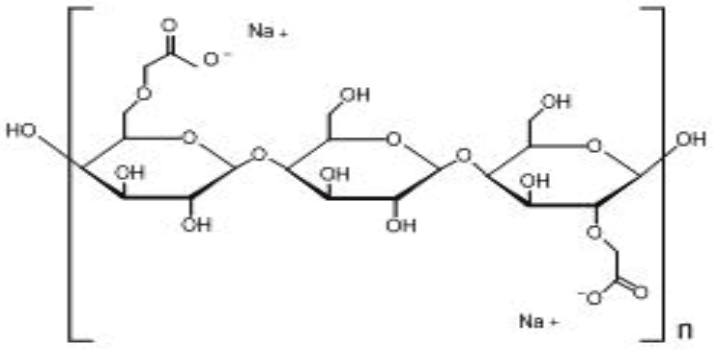

Fig. 11: Chemical stracture of Croscarmellose Sodium

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- **IUPAC Name** - 2,3,4,5,6-pentahydroxyhexanal; sodium acetate
- **Chemical Name and CAS Number** – Cellulose carboxymethyl ether sodium salt crosslinked [74811-65-7]
- **Molecular Formula** – (C8H16NaO8) n
- **Molecular Mass** - 263.20n g/mol
- **Synonyms** – Crosslinked carboxymethylcellulose sodium, Ac-Di-Sol, modified cellulose gum, Explocel, Primellose.
- **Physical Description** - Slightly hygroscopic white or slightly yellowish or greyish odourless and tasteless, granular or fibrous powder.
- **Solubility** - Insoluble in water, ethanol, and acetone. Although croscarmellose sodium rapidly swells up to 4-8 times its original volume on contact with water.
- **pH** – 5-7 in aqueous dispersions.
- **Functional Category** – Tablet and capsule disintegrant.
- **Pharmaceutical Applications** – Croscarmellose sodium is used in oral pharmaceutical formulations as disintegrant for tablets, capsules, and granules. It is generally regarded as a non-irritant and nontoxic in apt amount. In tablet formulations, it may be used in both direct compression as well as wet granulation technology. The concentration limit of croscarmellose sodium for tablets is 0.5-5 % and for capsules is 10-25 %.

B. Microcrystalline Cellulose

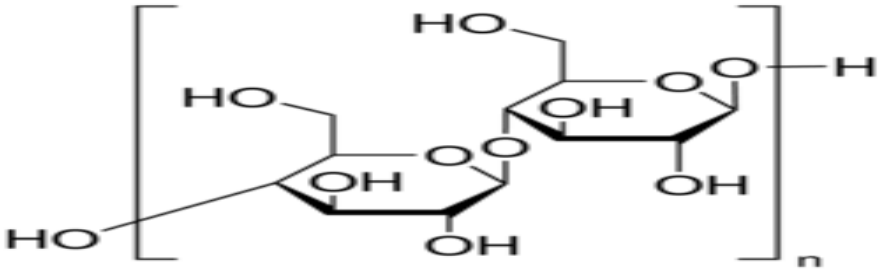

Fig. 12: Chemical stracture of Microcrystalline Cellulose

- **IUPAC Name** - 2-[4,5-dihydroxy-2-(hydroxymethyl)-6-methoxyoxan-3-yl]oxy-6- (hydroxymethyl)-5-methoxyoxane-3,4-diol
- **Chemical Name and CAS Number** – Cellulose [9004-34-6]
- **Molecular Formula** – (C6H10O5)n
- **Molecular Mass** – 370.35n g/mol
- **Synonyms** – Avicel PH, Cellulose microcrystalline, cellulose gel, Pharmacel.
- **Physical Description** – It is a purified, partially depolymerized cellulose that occurs as a white odourless and tasteless crystalline powder composed of poros particles. It is a bit hygroscopic material. It is commercially available in different particle sizes and moisture grades that have different properties and applications.
- **Solubility** – Slightly soluble in 5% w/v NaOH solution, practically insoluble in water, dilute acids, and most organic solvents.
- **Functional Category** – Tablet and capsule binder / diluent, adsorbent, tablet disintegrant, suspending agent.
- **Pharmaceutical Applications** – Microcrystalline cellulose is widely used as a binder or diluent in oral tablet and capsule formulations. It also is useful because of its lubricant and disintegrant properties. It is also used in cosmetics, food products, and in some pharmaceutical formulations as an adsorbent and antidherent.

C. Mannitol

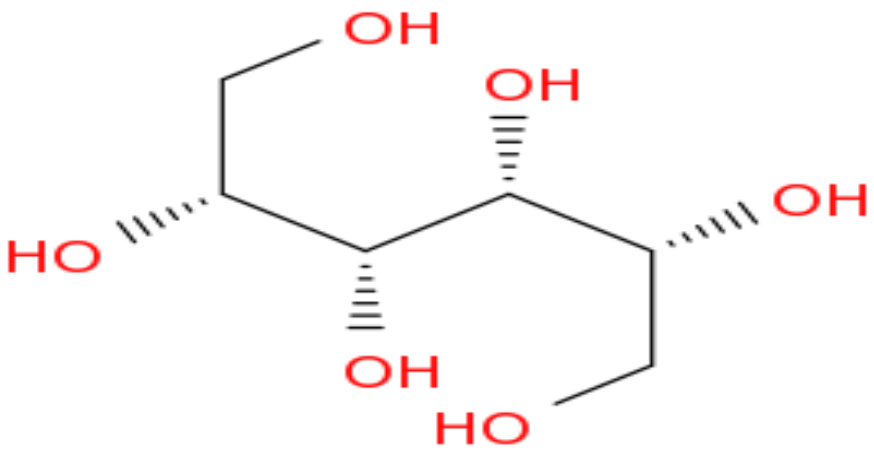

Fig. 13: Chemical stracture of Mannitol

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- **IUPAC Name –** (2R, 3R, 4R, 5R)-Hexane-1,2,3,4,5,6-hexol
- **Chemical Name and CAS Number –** D-Mannitol [69-65-8]
- **Molecular Formula –** C6H14O6
- **Molecular Mass –** 182.17 g/mol
- **Synonyms –** Manna sugar, D-Mannitol, mannite, cordycepic acis.
- **Physical Description –** Mannitol is a hexahydric alcohol related to mannose and is isomeric with sorbitol. It occurs as a white odourless and tasteless crystalline powder or free flowing granules. It is non-hygroscopic and is approximately as sweet as glucose. It shows polymorphism and appears as orthorhombic needles when crystallized from alcohol.
- **Solubility –** 1g is soluble in about 5.5 ml water (more sol in hot water), insoluble in ether, soluble in pyridine and aniline, soluble in aqueous solutions of alkalies, 1 g dissolves in 18 ml glycerol (density 1.24), 1 g dissolves in about 83 ml alcohol.
- **Functional Category –** Tablet and capsule diluent, diluent for lyophilized preparations, sweetening agent, tonicity agent.
- **Pharmaceutical Applications –** Manitol is primarily used as a diluent (10-90% w/w) in tablet and capsule formulations where it is of particular value since it is non-hygroscopic and thus can be used with moisture sensitive APIs. It is commonly used as an excipient in chewable and dispersible tablets.

D. Talc

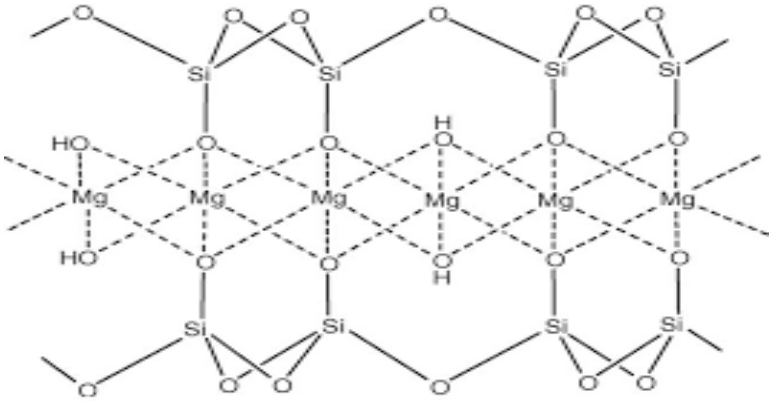

Fig. 14: Chemical stracture of Talc

- **IUPAC Name –** Dioxosilaneoxomagnesiumhydrate
- **Chemical Name and CAS Number –** Talc [4807-96-6]
- **Molecular Formula –** Mg6(Si2O5)4(OH)4
- **Molecular Mass –** 379.27 g/mol
- **Synonyms –** Hydrous magnesium calcium silicate, magnesium hydrogen metasilicate, hydrous magnesium silicate, purified French chalk, soapstone, steatite, powdered talc.
- **Physical Description –** Talc is an odourless, white to grayish-white, very fine crystalline powder (unctuous). It readily adheres to the skin, soft to touch, free from grittiness, non-flammable, non-combustible, and nontoxic.
- **Solubility –** Practically insoluble in water, dilute acids and alkalis, and most organic solvents. Sparingly soluble in acetone, very slightly soluble in methanol, isopropyl acetate, and ethanol.
- **Functional Category –** Glidant, anticaking agent, tablet / capsule diluent and lubricant. **Pharmaceutical Applications –** It is widely used as a dissolution retardant in controlled-release formulation, lubricant and glidant in tablet formulations, novel powder coating in extended-release tablets, and as an adsorbent. It is also used in cosmetic industries.

E. Magnesium Stearate

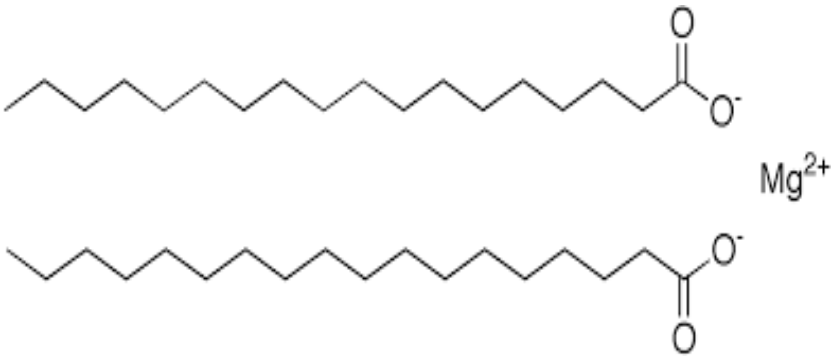

Fig. 15: Chemical stracture of Magnesium Stearate

- **IUPAC Name –** Magnesiumoctadecanoate
- **Chemical Name and CAS Number –** Octadecanoic acid, magnesium salt [557-04-0]
- **Molecular Formula –** C36H70MgO4
- **Molecular Mass –** 591.34 g/mol
- **Synonyms –** Magnesium octadecanoate, octadecanoic acid magnesium salt, stearic acid magnesium salt, dibasic magnesium stearate, magnesium distearate.
- **Physical Description –** Magnesium stearate is a very fine, light weight, white, precipitated or milled, impalpable powder of low bulk density. It has a characteristic taste and a faint odor of stearic acid. It is greasy to touch and readily adheres to the skin. It gets decomposed on contact with dilute acids.
- **Solubility –** Practically insoluble in water, ethanol, and ether. It is slightly soluble in warm benzene and 95% ethanol.
- **Functional Category –** Tablet and capsule lubricant.
- **Pharmaceutical Applications –** It is widely used in pharmaceutical, cosmetic, and food industries. It is primarily used as a lubricant and as an anticaking agent in tablet and capsule formulations in concentration range of 0.25-5.0% w/w. It is also used in barrier creams.

F. Saccharin Sodium

Fig. 16: Chemical stracture of Saccharin Sodium

- **IUPAC Name –** sodium;1,1-dioxo-1,2-benzothiazol-2-id-3-one
- **Chemical Name and CAS Number –** 1,2-benzisothiazol-3(2H)-1,1-dioxide, sodium salt [128-44-9]
- **Molecular Formula –** C7H4NNaO3S
- **Molecular Mass –** 205.16 g/mol
- **Synonyms–** Sodium saccharin, saccharin sodium anhydrous, sodium 3-oxo-3Hbenzo[d]isothiazol-2-ide 1,1-dioxide, saccharin sodium salt, sodium o-benzosulfimide, soluble gluside, sucaryl sodium.
- **Physical Description –** Saccharin, sodium salt appears as odorless white crystals or crystalline powder. Aqueous solution is neutral or alkaline to litmus, but not alkaline to phenolphthalein. Effloresces in dry air. Its sweetening power is approximately 300 times that of sucrose and is thus intensely sweet with an additional metallic aftertaste.
- **Solubility –** Solubility of saccharin sodium differs from solvent to solvent and it varies depending on the nature and temperature of the solvent and surrounding conditions.
- **Functional Category** – Sweetening agent.
- **Pharmaceutical Applications –** Saccharin sodium is an intense sweetening and flavour masking agent used widely in a variety of pharmaceutical preparations, beverages, food items, and table-top sweeteners. It is also used in vitamin preparations. Saccharin sodium is considerably more soluble in water than saccharin and is thus more frequently used in pharmaceutical industry. Its injection has been used to measure the arm-to-tongue circulation time. [32]

G. List of super disintegration

Table 1: Different types of super disintegration with example and mechanism of action [33]

Superdisintegrants	Example	Mechanism of action	Special comment
Crosscarmellose® Ac-Di-Sol® Nymce ZSX® Primellose®Solutab® Vivasol®L-HPC	Crosslinked cellulose	- Swells 4-8 folds in < 10 seconds. -Swelling and wicking both.	- Swells in two dimensions. -Direct compression or granulation -Starch free
CrospovidoneCrospovidone M® Kollidon® Polycladose®	Crosslinked PVP	-Swells very little andreturns to original size aftercompression but act by capillary action	-Water insoluble and spongy in nature so get porous tablet
Sodium starch glycolate Explotab® Primogel®	Crosslinked starch	-Swells 7-12 folds in < 30 seconds	-Swells in three dimensions and high level serve as sustain release matrix
Alginic acid NF Satialgine®	Crosslinked alginic acid	Rapid swelling in aqueous medium or wicking action	Promote disintegration in both dry or wet granulation
Soy polysaccharides Emcosoy®	Natural super disintegrant	-Does not contain any starch or sugar. Used in nutritional products	-
Calcium silicate	-	-Wicking action	Highly porous,Optimum concentration is between 20-40%

H. List of Marketed fast dissolving tablets

Table 2: List of various marketed formulation[34,35]

S. No.	Trade name	Active drug	Manufacturer
1.	Felden fast melt	Piroxicam	Pfiser Inc., NY, USA
2.	Claritin redi Tab	Loratidine	Schering plough Corp., USA
4.	Zofran ODT	Ondansetron	Glaxo Wellcome, Middlesex, UK
5.	Torrox MT	Rofecoxib	Torrent pharmaceuticals, India
6.	Olanex instab	Olanzapine	Ranbaxy lab. Ltd. New-Delhi, India
7.	Propulsid Quicksolv	Cisapride monohydrate	Janssen pharmaceutics
8.	Zolmig Repimelt	Zolmitriptan	Cima Labs,Inc.
9.	Cibalgina DueFast	Ibuprofen	Eurand International
10.	Relivia Flash dose	Tramadol HCl	Fuisz Technology, Ltd.
11.	Allegra ODT	Fexofenadine	Sanofi Aventis
12.	Clarinex RediTabs	Desloratadine	Schering-Plough
13.	Clonazepam ODT	Clonazepam	Par Pharmaceutical
14.	Prevacid SoluTab	Lansoprazole	Takeda Pharmaceuticals
15.	Zyprexa Zydis	Olanzapine	Eli Lilly and Company

IV. CONCLUSION

Fast dissolving tablets emerged as innovative dosage forms that solve some of the issues associated with conventional solid dosage forms, such as the patient's inability to swallow the in elderly and young patients taking a tablet. Fast-dissolving tablets are created to break down or dissolve quickly in the saliva, usually in less than 60 seconds (range: 5–60 seconds). compared to conventional oral dosage forms, fast-dissolving tablets are more convenient, safer, and have better patient compliance and acceptance. They may also have better biopharmaceutical properties, bioavailability, and improved efficacy.In order to achieve rapid disintegration and immediate dissolution of the tablet as well as good taste masking properties and excellent mechanical strength, the basic strategy used by all currently available technologies in the formulation of Fast dissolving tablets is to maximise the porous structure of the tablet matrix and incorporate super disintegrating agents in the optimal concentration. Fast dissolving tablets' broad spectrum of benefits and availability to many technologies are certain to increase their popularity in the near future.The delivery of conventional dosage forms has been compared to the emergence of fast-dissolving drug delivery systems.

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