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Preparation and Evaluation of Immediate Release Tablets

Sakshi Ghuge[1], Prof. Smita More[2]

[1]Pharmaceutics, Modern College of Pharmacy (for Ladies), Pune, Maharashtra, India
[2]Savitribai Phule Pune University, Pune, Maharashtra, India

ABSTRACT

Background: Tablet is that the preferred among all dosage forms existing today thanks to its convenience of self administration, compactness and simple manufacturing; however in many cases immediate onset of action is required than conventional therapy. There are novel kinds of dosage form. The scenario of pharmaceutical drug delivery are expeditiously challenging, but conventional pharmaceutical dosage forms are still dominating. Immediate release dosage forms are those wherein ≥85% of labeled amount dissolves within 30 min. Superd is integrants are accustomed improve the efficacy of solid dosage forms. orms that act very quickly after administration To overcome these drawbacks, immediate release pharmaceutical dosage form has emerged as alternative oral dosage forms. There are novel forms of dosage forms that act very quickly after administration. the fundamental approach utilized in development tablets is that the use of superdisintegrants like Cross linked carboxymelhylcellulose (Croscarmeliose), Sodium starch glycolate (Primogel, Explotab), Polyvinylpyrrolidone (Polyplasdone) etc. which give instantaneous disintegration of tablet after administration. Immediate release liquid dosage forms and parenteral dosage form have also been introduced for treating patients. Dosage form can be suspensions with typical dispersion agents like hydroxypropylmethylcellulose, (dioctylsulfosuccinate) etc. a replacement dosage form allows a manufacturer to increasemarket exclusivity, while offering its patient population a more convenient dosage form or dosing regimen.

These superdisintegrants provide instantaneous disintegration of the tablet after administration within the stomach. This article provide an exhaustive account illustrating the significances of superdisintegrant within the immediate release of tablets and therefore the mechanism of disintegration together with various conventional techniques and novel granulation technology wont to prepare immediate-release tablets. ach. Thus, decreasing the disintegration time which successively enhances drug dissolution rate.

Results: From this review, we can ready to develop and evaluate immediate release tablets.also we must always understand role of immediate release tablets.

Conclusion: Most of the patients need quick therapeutic action of the drug, leading to poor compliance with conventional drug therapy which results in reduced overall therapy effectiveness. For this we will conclude that immediate release tablets are simpler. because immediate release tablet shows quick effect.

KEYWORDS: *Immediate release tablets, evaluation*

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INTRODUCTION

The Oral route is one in every of the foremost asked for route for the systemic effect because of its easy ingestion, simple, safest, convenient, non-invasive, versatility and most significantly, patient compliance. Oral administration is that the most well liked route for systemic effects thanks to its easy ingestion, pain, avoidance, versatility and most significantly, patient compliance. Also solid oral delivery systems don't require sterile conditions and are therefore, less costly to manufacture. Patient compliance, high precision dosing, and manufacturing efficiency make tablets the solid dosage sort of choice Patient compliance, high precision dosing, and manufacturing efficiency make tablets the solid dosage sort of choice. Excipients and equipments choices are significantly affected should solid dosage form technologies change in response to the unprecedented shifts within the drug discovery like genomics. the last word goal of any drug delivery system is effective disease/disorder management, minimum side effects and greater patient compliance during a cost effective manner. The drug therapeutic indices might be maximized while indices of adverse reactions or side effects may be minimized by regulating the drug release in body in a well-

defined controlled manner. This would eliminate the haphazard and uncontrolled blood plasma profiles of medication usually related to conventional dosage forms1.

Solid oral delivery systems are cheaply manufactured because they don't require sterile conditions 1. Although, increased focus and interest generated within the area of controlled release and targeted drug delivery system in recent years, tablet dosage forms that are intended to be swallowed whole, disintegrate, and release their medicament Many patients require quick onset of action particularly therapeutic condition and consequently immediate release of medicament is required. it's estimated that fifty of the population is littered with this problem, which ends in a veryhigh incidence of ineffective therapy 9, 10. The term "immediate release" pharmaceutical formulation includes any formulation during which the speed of release of drug from the formulation and/or the absorption of drug, is neither appreciably, nor intentionally, retarded by galenic.

Definition:

Immediate Release Tablets: Immediate release tablets are invented to disintegrate and release their dosage form with no special rate controlling features, like special coatings and other techniques. Immediate release tablets are those which disintegrate swiftly and obtain dissolved to release the medicaments 5. The oral bioavailability of drug passionate about disintegration, dissolution and various physiological factors 6. a direct release dosage form helps a International Journal of Pharmaceutical Sciences and Research 3608 manufacturer to diversify market and simultaneously offering patients a convenient dosage form or dosage regimen 7

DIFFICULTIES

Patient may suffer from tremors therefore • they need difficulty to require tablet, powder and liquids. In dysphasia physical obstacles and adherence to an oesophagus may cause gastrointestinal ulceration. Swallowing of solid dosage forms like tablet and capsules and produce difficulty for young adult of incomplete development of muscular and • system and elderly patients susuffer from dysphasia.

CRITERIA FOR IMMEDIATE RELEASE DRUG DELIVERY SYSTEM

Immediate release dosage form should-

In the case of solid dosage it should dissolve or disintegrate in the stomach within a short period.

- In the case of liquid dosage form it should be compatible with taste masking.
- Be portable without fragility concern.
- Have a pleasing mouth feel.
- It should not leave minimal or no residue in the mouth after oral administration.
- Exhibit low sensivity to environmental condition as humidity and temperature.
- Be manufactured using conventional processing and packaging equipment at low cost.
- Rapid dissolution and absorption of drug, which may produce rapid onset of action. offer from dysphasia.

CANDIDATE FOR IMMEDIATE RELEASE ORAL DOSAGE FORM:

- Analgesics and anti inflammatory Agents:
  Aloxiprin, auranofin, azapropazone, benorylate, diflunisal, etodolac, fenbufen, fenoprofen calcim, flurbiprofen, ibuprofen, indomethacin, ketoprofen, meclofenamic acid, efenamicacid, nabumetone, naproxen, oxaprozin, oxyphenbutazone, phenylbutazone, piroxicam, sulindac.

- Anthelmintics:
  Albendazole, bephenium, hydroxynaphthoate, cambendazole, dichlorophen, ivermectin, mebendazole, oxamniquine, oxfendazole, oxantel embonate, praziquantel, pyrantel embonate, thiabendazole.

- Anti-Arrhythmic Agents:
  Amiodarone HCl, Disopyramide, flecainide acetate, quinidine sulphate.

- Anti-bacterial Agents:
  Benethamine penicillin, cinoxacin, ciprofloxacin HCl, clarithromycin, clofazimine, cloxacillin, demeclocycline, doxycycline, erythromycin, ethionamide, Imipenem, nalidixic acid, nitrofurantoin, rifampicin, spiramycin, sulphabenzamide, sulphadoxine, sulphamerazine, sulphacetamide, sulphadiazine, sulphafurazole, sulphamethoxazole, sulphapyridine, tetracycline,

- Anti-coagulants:
  Dicoumarol, dipyridamole, nicoumalone, phenindione. Anti-depressants: Amoxapine, ciclazindol, maprotiline HCl, mianserin HCl, nortriptyline HCl, trazodone HCl, trimipramine maleate. Anti-diabetics Acetohexamide, chlorpropamide, glibenclamide, gliclazide, glipizide, tolazamide, tolbutamide.

- Anti-epileptics:
  Beclamide, carbamazepine, clonazepam, ethotoin, methoin, methsuximide, methylphenobarbitone, oxcarbazepine, paramethadione, phenacemide, phenobarbitone, phenytoin, phensuximide, primidone, sulthiame, antiepileptic drug.

- Anti-fungal Agents:
  Amphotericin, butoconazolenitrate, clotrimazole, econazolenitrate, fluconazole, flucytosine, griseofulvin, itraconazole, ketoconazole, miconazole, natamycin, nystatin, sulconazole nitrate, terbinafine HCl, terconazole, tioconazole, undecenoic acid.

- Anti-gout Agents:
  Allopurinol, probenecid, sulphinpyrazone.

- Anti-hypertensive Agents:
  Amlodipine, carvedilol, benidipine, darodipine, dilitazem HCl, diazoxide, felodipine, guanabenz acetate, indoramin, isradipine, minoxidil, nicardipine HCl, nifedipine, nimodipine, phenoxybenzamine HCl, prazosin HCL, reserpine, terazosin HCl.

- Anti-malarial:
  Amodiaquine, chloroquine, chlorproguanil HCl, halofantrine HCl, mefloquine HCl, proguanil HCl, pyrimethamine, quinine sulphate.

- Anti-migraine Agents:
  Dihydroergotamine mesylate, ergotamine tartrate, methysergidemaleate, pizotifen maleate, sumatriptan succinate.

- Anti-muscarinicAgents:
  Atropine, benzhexol HCl, biperiden, ethopropazine HCl, hyoscine butyl bromide, hyoscyamine, mepenzolate bromide, orphenadrine, oxyphencylcimineHCl, tropicamide.

- Anti-neoplasticAgents and Immunosuppressants:
  Aminoglutethimide, amsacrine, azathioprine, busulphan, chlorambucil, cyclosporin, dacarbazine, estramustine, etoposide, lomustine, melphalan, mercaptopurine, methotrexate, mitomycin, mitotane, mitozantrone, procarbazine HCl, tamoxifen citrate, testolactone.

- Anti-protazoalAgents:
  Benznidazole, clioquinol, decoquinate, diiodohydroxyquinoline, diloxanide furoate, dinitolmide, furzolidone, metronidazole, nimorazole, nitrofurazone, omidazole, tinidazole.

- Anti-thyroid Agents:
  Carbimazole, propylthiouracil.

- Anxiolytic, Sedatives, Hypnotics and Neuroleptics:
  Alprazolam, amylobarbitone, barbitone, bentazepam, bromazepam, bromperidol, brotizolam, butobarbitone, carbromal, chlordiazepoxide, chlormethiazole, chlorpromazine, clobazam, clotiazepam, clozapine, diazepam, droperidol, ethinamate, flunanisone, flunitrazepam, fluopromazine, flupenthixol decanoate, fluphenazine decanoate, flurazepam, haloperidol, Cardiac InotropicAgents:Amrinone, digitoxin, digoxin, enoximone, lanatoside C, medigoxin.

- Corticosteroids:
  Beclomethasone, betamethasone, budesonide, cortisone acetate, desoxymethasone, dexamethasone, fludrocortisoneacetate, flunisolide, flucortolone, flutica sonepropionate, hydrocortisone, methylprednisolone, prednisolone, prednisone, triamcinolone.

- Diuretics:
  Acetazolamideamiloride, bendrofluazide, bumetanide, chlorothiazide, chlorthalidone, ethacrynic acid, frusemide, metolazone, spironolactone, triamterene.

- Anti-parkinsonianAgents:
  Bromocriptine mesylate, lysuride maleate.

- Gastro-intestinal Agents:
  Bisacodyl, cimetidine, cisapride, diphenoxylate HCl, domperidone, famotidine, loperamide, mesalazine, nizatidine, omeprazole, ondansetron HCL, ranitidine HCl, sulphasalazine

- Histamine H, -Receptor Antagonists:
  Acrivastine, astemizole, cinnarizine, cyclizine, cyproheptadine HCl, dimenhydrinate, flunarizine HCl, loratadine, meclozine HCl, oxatomide, terfenadine, triprolidine.

- Stimulants:
  Amphetamine, dexamphetamine, dexfenfluramine, fenfluramine, mazindol, pemoline.

Classification and Types of Tablets

A. Oral Tablets for Ingestion
1. Compressed tablets
2. Multiple compressed tablets
3. Layered tablets
4. Compression-coated tablets
5. Repeat-action tablets
6. Delayed-action and enteric-coated tablets
7. Sugar and chocolate-coated tablets
8. Film coated tablets
9. Chewable tablets

B. Tablets Used in the Oral Cavity
1. Buccal tablets
2. Sublingual tablets
3. Troches and lozenges
4. Dental cones

C. Tablets Administered by Other Routes
1. Implantation tablets
2. Vaginal tablets

D. Tablets Used to Prepare Solutions
1. Effervescent tablets
2. Dispensing tablets
3. Hypodermic tablets
4. Table

Various considerations for Immediate release:

Tablets Biopharmaceutical Consideration When new drug delivery system placed on, it's must that to think about Biopharmaceutical factor like metabolism and excretion.

Pharmacokinetics

In this consideration, study has done on absorption, distribution, metabolism and excretion.

Pharmacodynamic

Drug reception interaction impaired in elderly also as in young adult thanks to undue development of organ

1. Decreased ability of the body to reply reflexive stimuli, flow, and hypotension may even see in taking antihypertensive like prazosin.
2. Decreased sensitivity of –adrenergic agonist and antagonist.
3. Immunity is a smaller amount and brought into consideration while administered antibiotics.

- Advantages of Immediate Release Drug Delivery System: 10, 11.

1. improved compliance/added convenience
2. Improved stability
3. Suitable for controlled/sustained release actives
4. Allows high drug loading.
5. Ability to produce advantages of liquid medication within the kind of solid preparation.
6. Adaptable and amenable to existing processing and packaging machinery
7. Cost- effective
8. More flexibility for adjusting the dose
9. It Iis prepared with minimum dose of drug.
10. There Is not any dose dumping problem

Disadvantage::

1. Frequent dosing

2. It is important for a drug with a brief half-life.
3. Drug release at a time may produce high plasma concentration
4. which can produce toxicity Various considerations for Immediate release tablets.

➢ Biopharmaceutical Consideration

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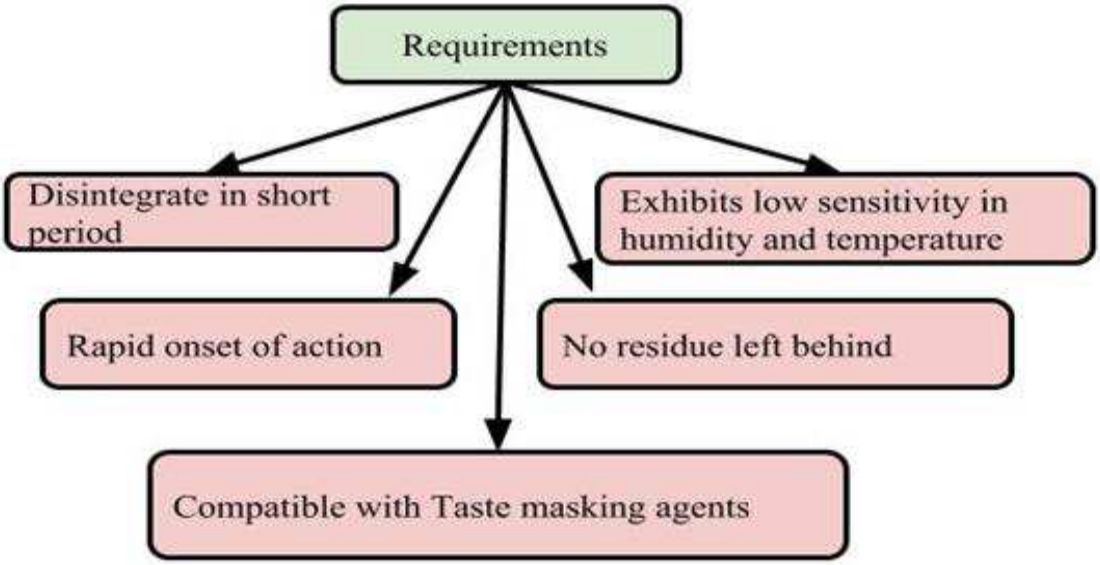
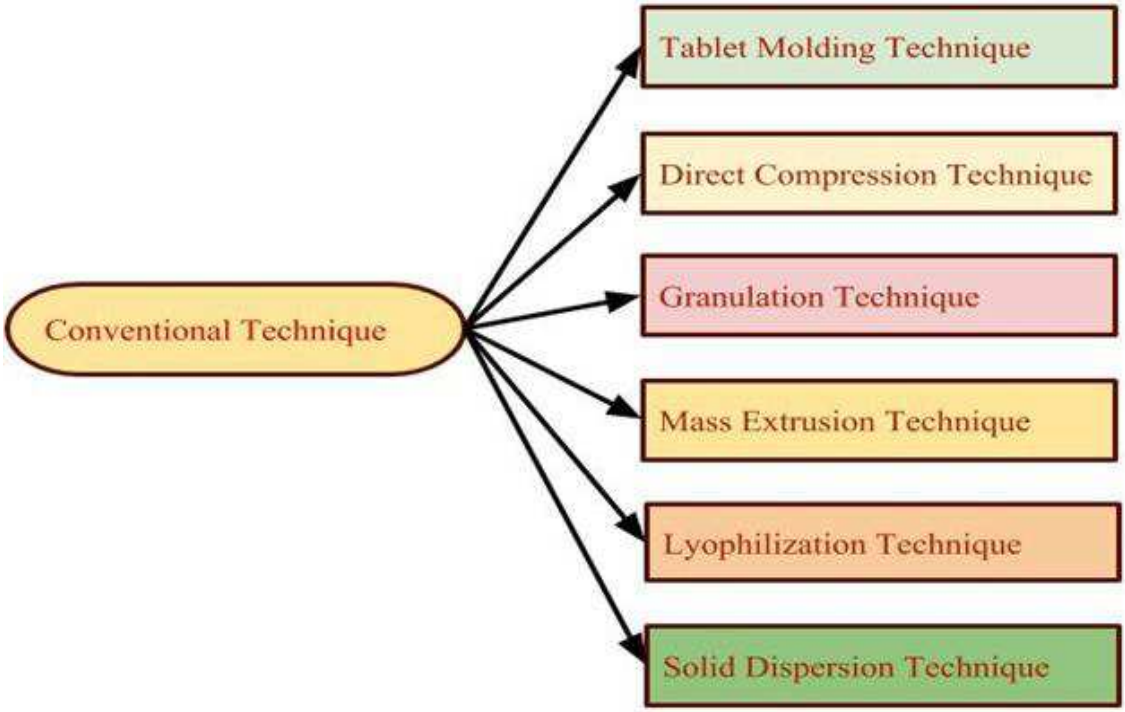
Essential requirement for immediate release tablets:



Types of conventional technique for immediate release tablets:



1. Tablet Molding Technique:

During this technology, water-soluble ingredients are incorporated to disintegrate and dissolve the tablet more swiftly. The hydro alcoholic solvents are accustomed moistened powder blend and so apply compression pressure that's below the traditional tablets compression to mold the tablet. The solvent is then removed by air-drying. Dissolution is enhanced by a porous structure of molded tablets.

2. Direct Compression:

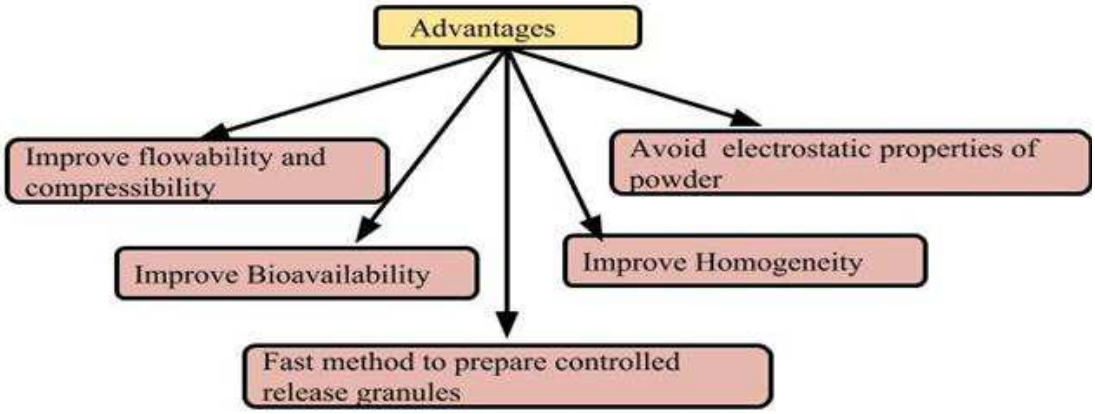
Within which tablets formulations are directly compressed from a powder blend of suitable excipients and API is termed an instantaneous compression method. Pre-treatment of blended powder by dry or wet granulation procedure isn't necessary. Its provide merits mostly in terms of speedy production, because it requires less machinery, reduced number of personnel, fewer unit operations and significantly less time interval together with improved product stability.

3. Granulation Technique:

it's a process of size enlargement within which small particles convert into larger agglomerates and make it physically stronger. it's beneficial to avoid segregation of the product's constituent, refine powder flow and handling and minimize the dustiness.

It is ideally spherical, the smaller particle size is efficiently filling the void spaces between granules. This method also can be classified as two types:

1. wet granulation
2. dry granulation



A. Wet Granulation Method:

Wet granulation could be a process of employing a liquid binder to lightly agglomerate the powder mixture. The amount of liquid needs to be properly controlled, as over-wetting will cause the granules to be too hard and under-wetting will cause them to be too soft and friable. Aqueous solutions have the advantage of being safer to pander to than solvent-based systems but might not be suitable for drugs which are degraded by hydrolysis.

B. Dry Granulation:

In dry granulation process the powder mixture is compressed without the utilization of warmth and solvent. The 2 basic procedures are to create a compact of fabric by compression then to mill the compact to get granules. Below two methods are used for dry granulation

4. Mass-Extrusion:

during this technology softening the blend of active drug with water-soluble solvent methanol, polyethylene glycol and softened mass put into the extruder to make a cylinder shape of the merchandise and segmented with using the heated blade to formulate a dosage form as tablets.

5. Solid Dispersions:

Solid products containing a minimum of two different components, mainly hydrophilic matrix and a hydrophobic drug. The matrix may be either crystalline or amorphous. This method house the challenge of blending a matrix and drug, preferably on a molecular level, while matrix and drug are generally poorly miscible. When formulating immediate release solid dosage forms from solid amorphous dispersion for oral administration to effective use in an environment like the channel of a personality's, it's often desirable to extend the number of dispersion occurs within the dosage form 20.

6. Lyophilization:

It depends on simple principle i.e. sublimation. The sublimation is processed within which conversion of a substance from a solid st without changing within the liquid phase. Lyophilisation is performed at temperature and pressure conditions below the triple point. the entire process is performed at temperature and pressure by applying vacuum; hence it's suitable for drying of thermo labile compounds 21.

7. Novel Granulation Technologies:

A. Pneumatic Dry Granulation (PDG): it's a completely unique technique of dry method during which the formulation of granules is dispensed by automatically or semi-automatically. This techniques granule has excellent properties as compared to dry granulation, direct compression, wet granulation and granules are showing high compressibility and flowability the end result may be attained without utilizing exotic and high-cost excipients, ate to vapor state,

B. Freeze Granulation Technology (FGT): Integrated Bio systems, Inc. (California, USA) had patented freeze GT that leads to spherical and free flowing granules with ideal homogeneity. Its require spraying of a suspension containing powder

into cryogen where the drops were swiftly frozen to make granules which upon subsequent freeze-drying yields dry granules.

C. Spray Drying Granulation: This technology facilitated to improved flow, homogeneous distribution of colours, drug and required less lubricant as compared to wet massed products. It are often co-precipitate a lively pharmaceutical ingredient with an appropriate polymer to create a stable amorphous solid dispersion and promote improved bioavailability and dissolution rate of the many drug products 24.

D. TOPO (TOPO Granulator) Technology: Hermes Pharma has developed a novel technology for completing single pot granulation, and a really small volume of liquid is required to begin the chain reaction. Pure water or water-ethanol mixtures are used. TOPO Technology fabricates granules for tablets which carries with it a minimum of one solid crystalline, an organic acid and one alkaline or metallic element metal carbonate that reacts with the organic acid in solution to create greenhouse gas. As a result, finished products free from solvent residue and granules have excellent hardness and stability. it absolutely was employed for manufacture effervescent tablets following TOPO vacuum granulation technology, patented by Hermes Pharma. It requires granulation under vacuum to forestall uncontrolled chain reaction 25.

E. Moisture Activated Dry Granulation (MADG): during this technology, moisture is employed to activate granule formation, without the necessity to use heat to dry the granules. There are two main stages in MADG 26.

F. Continuous Flow Technology: This method doesn't use liquid to precede chain reaction. Granules are formulated within the inclined drum during which powder is loaded to inlet duct and formulated granules are faraway from the opposite side. each day up to 12 a lot of granules can produce by CF technology 27.

G. Thermal Adhesion Granulation Process: it's an alternate to moist granulation and requires alittle quantity of binder liquid and warmth to provide agglomeration. Moreover, the granulation process is facilitating by the utilization of warmth. The mixture of excipient and API is heated at temperature in a very closed chamber that's set for tumble rotation to provide the agglomeration process of the powder particle. this method terminates the drying process because less amount of liquid is employed which is consumed during agglomeration of powder particles. After cooling and sieving required particle size of granules will be obtained 28.

H. Granurex Technology: This technology consistently and precisely accomplishes the powder layering processes, single coating, and multiple coating processes and powder layers that manifest the accuracy and better drug release mechanism 29.

I. Foamed Binder Technologies: It assists in achieving an improved wet granulation product, by using with methocel polymers and homogenous distribution of binder solution to drug mixture. It decreases the necessity for water and provides reproducibility 30.

- **Procedure:**

Step 1: The active ingredient and excipients are weighed and mixed.

Step 2: The wet granulate is ready by adding the liquid binder–adhesive to the powder blend and mixing thoroughly. samples of binders/adhesives include aqueous preparations of cornstarch, natural gums like acacia, cellulose derivatives like methyl cellulose, gelatin, and povidone.

Step 3: Screening the damp mass through a mesh to form pellets or granules.

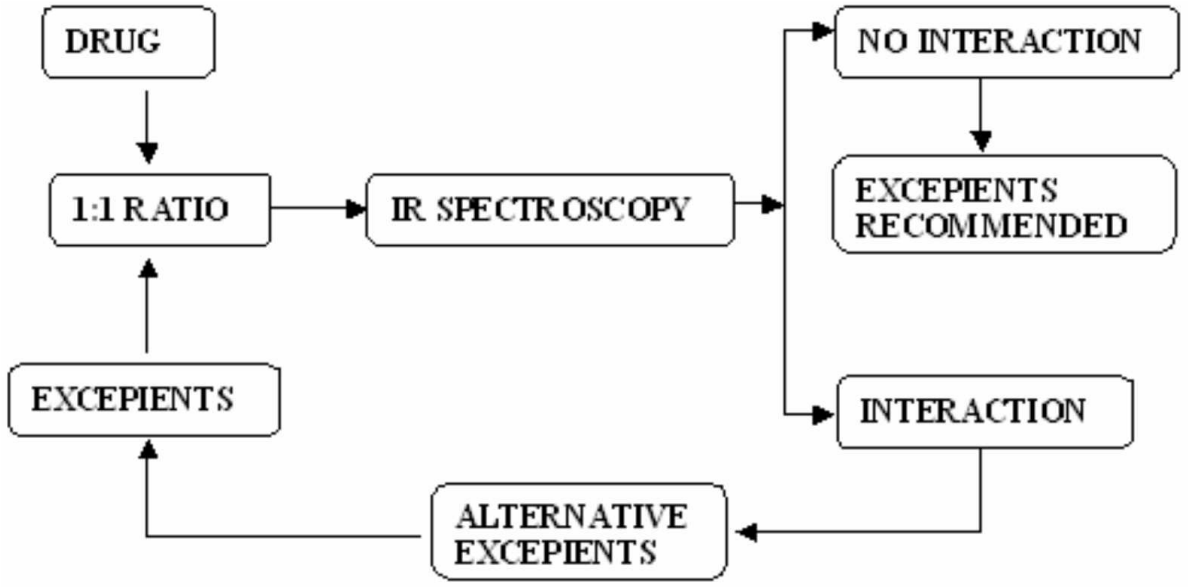
Step 4: Drying the granulation. a standard traydryer or fluid-bed dryer are most ordinarily used.

Step 5: After the granules are dried, they're passed through a screen of smaller size than the one used for the wet mass to make granules of uniform size

- **Drug-excipient compatibility studies**

The proper design and therefore the formulation of a dosage form require consideration of the physical, chemical and biological characteristics of the drug and excipients employed in fabricating the merchandise. The drug and excipients must be compatible with each other to produce a product i.e. stable, efficacious, attractive, easy to administer and safe. The compatibility studies provide the frame work for the drugs combination with the excipients within the fabrication of the dosage form. The study was carried .Superdisintegrants: Disintegrants are substances or a mix of gear incorporated to the drug formulations, which assist dispersion or breakup of tablets and contents of capsules into smaller fragments for rapid dissolution. out to establish that the therapeutically active drug has not undergone any changes, after it has been subjected to processing steps during formulation of tablets. Compatibility studies are carried out by mixing definite properties of drug and excipient and kept in glass vials, which is stored at 55°C for one month.

- **Representation of compatibility study:**



EVALUATION OF IMMEDIATE RELEASE TABLETS:

PRECOMPRESSION PARAMETERS:

1. Angle of repose

Angle of repose decided by using funnelmethod. The accurately weighed blend was taken in a very funnel. the peak of the funnel was adjusted in such a way that the tip of the funnel just touches the apex of the heap of blend. The drug excipient blend was allowed to flow through the funnel freely on to the surface. The diameter of the powder cone was measured and angle of repose was calculated using the following equation.

Tan = h/r

Where h and r are the peak and radius of the powder conc.

2. Bulk density

Apparent bulk density decided by pouring a weighed quantity of blend into graduate and measuring the degree and weight.

BD =Weight of the powder / Volume of the packing.

3. Tapped Density

It was determined by pl containing a known mass of drug-excipients blend.

The cylinder was allowed to make up its own weight onto a tough surface from the peak of 10cm at 2 second intervals. The tapping was continued until no further change in volume was noted.

TBD =Weight of the powder / volume of the tapped packing.

4. Compressibility Index

The Compressibility Index of the blends was determined by Carr's compressibility index.

Carr's compressibility index (%) = [(TBD-LBD) X 100] / TBD

A similar index has been defined by Hausner

5. Hausner's ratio

Hauser's ratio = Tapped density/ Poured density

Hausner's ratio <1.25 – Good flow = 20% Carr 1.25 – Poor flow =33% Carr

6. Compression

Mixed Blends is compressed by direct compression method using Cadmach single punch machine. Caput punches and die (8 mm.) were employed in this study.

EVALUATION OF TABLETS:

POST COMPRESSION PARAMETERS:

The tablets are subjected to the subsequent quality control tests:

1. Weight variation
2. Friability
3. Hardness
4. Disintegration
5. In vitro Dissolution

1. Weight variation:

The weight variation test is administered so as to ensure uniformity within the weight of tablets in an exceedingly batch.

The total weight of 20 tablets from each formulation was determined and also the average was calculated. The individual weights of the tablets were also determined accurately and also the weight variation was calculated.

2. Hardness:

The hardness of tablet is a sign of its strength. Measuring the force required to interrupt the tablet across tests it. The force is measured in kg and also the hardness of about 3-5 kg/cm2 is taken into account to be satisfactory for uncoated tablets.

Hardness of 10 tablets from each formulation made up our minds by Monsanto hardness tester.

3. Friability test:

Friability is that the loss of weight of tablet in acing a graduate, container because of removal of fine particles from the surface. Friability test is allotted to access the ability of the tablet to resist abrasion in packaging, handling

and transport. Roche friabilator was employed for locating the friability of the tablets.

20 tablets from each formulation were weighed and placed in Roche friabilator that rotated at 25 rpm for 4 minutes. The tablets were dedusted and weighed again the share of weight loss was calculated again.
using the formula
% Friability = [(W1-W2)100]/W1
Where,
W1= Weight of tablet before test
W2 = Weight of tablet after test

4. Disintegration test:
The USP device to rest disintegration was six glass tubes that are "3 long, open at the highest, and held against 10" screen at the underside end of the basket rack assembly. One tablet is placed in each tube and the basket rack is poisoned in 1 liter beaker of distilled water at 37± 2 oC, specified the tablets remain below the surface of the liquid on their upward movement and descend not closer than 2.5cm from the underside of the beaker.

5. In vitro drug release studies
The immediate release tablets are subjected to in vitro drug release studies in pH 6.8 phosphate buffer for half-hour to access the power of the formulation for providing immediate drug delivery. Drug release studies were applied in eight stage dissolution test apparatus using specified volume of dissolution media maintained at 37±10C. The tablets are kept in the cylindrical basket and rotated at 100 rpm 5ml of the sample from the dissolution medium are withdrawn at every time interval (2, 3, 5, 10, 15&30 minutes) and 5ml of fresh medium was replaced each time. The samples were filtered and from the filtrate 1ml was taken and diluted to 10ml.

6. Dissolution Profile
The compositions of the current invention preferably are immediate release compositions from which about 50% of the micronized drug is dissolved in vitro within about quarter-hour, more preferably at least about 80% of the drug is dissolved in vitro within about half-hour, and still more preferably at least about 90% of the e is dissolved in vitro within about 45 minutes using 1% sodium dodecyl sulfate (SDS) in water because the dissolution medium at 37°c

CONCLUSION:
Most of the patients need quick therapeutic action of the drug, leading to poor compliance with conventional drug therapy which ends up in reduced overall therapy effectiveness. Immediate release tablets are designed to release the medicaments with an enhanced rate. As highlighted above current technologies, there's an unmet need for improved manufacturing processes for immediate release pharmaceutical form that are mechanically strong, allowing easy handling and packaging and with production price resembling that of conventional tablets Due to the constraints of the present technologies as highlighted above, there's an unmet need for improved manufacturing processes for immediate release pharmaceutical form that are mechanically strong, allowing easy handling and packaging and with production costs kind of like that of conventional tablets.

Results: From this review, we can able to develop and evaluate immediate release tablets. also we should always understand role of immediate release tablets.

Reference:

[1] Leon Lachmann, Herbert A, Liberman, Joseph L. Kaing. The theory and practice of Industrial Pharmacy: 293-303.

[2] Ansel`s Pharmaceutical dosage forms & drug delivery systems, eighth edition, 227-260.

[3] Aulton`s Pharmaceutics, The design & manufacture of medicines, Biopharmaceutics and pharmacokinetics, A Treatise, second edition, Valabh Prakashan, 315-384

[4] Debjit Bhowmik, Chiranjib. B, Krishnakanth, Pankaj, R. Margret Chandira. Fast Dissolving Tablet: An Overview, Journal of Chemical and Pharmaceutical Research, 2009, 1(1): 163-177.

[5] Dali SHUKLA, Subhashis CHAKRABORTY, Sanjay SINGH, Brahmeshwar MISHRA, Mouth Dissolving Tablets II: An Overview of Evaluation Techniques, www.scipharm.at

[6] Susijit Sahoo, B. Mishra, P. IK. Biswal, Omprakash Panda, Satosh Kumar Mahapatra, Goutam Kumar Jana, Fast Disslving Tablet: As A Potential Drug Delivery System, Drug Invention Today 2010, (2), 130-133.

[7] A Gupta, AK Mishra, V Gupta, P Bansal, R Singh, AK Singh, REVIEW ARTICLE, Recent Trends of Fast Dissolving Tablet - An Overview of Formulation Technology, International Journal of Pharmaceutical & Biological Archives 2010; 1(1): 1 – 10

[8] A Review On New Generation Orodispersible Tablets And Its Future Prospective, Tanmoy Ghosh, Amitava Ghosh And Devi Prasad, International Journal of Pharmacy and Pharmaceutical Sciences ISSN- 0975-1491 Vol 3, Issue 1, 2011

[9] Reddy. L. H *et al*., "Fast dissolving drug delivery systems: A review of the literature, IJPS., July 2002: 331-336.

[10] Jon Gabrielsson, Nils-Olof Lindberg and Torbjorn Lundstedt, Multivariate Methods in Pharmaceutical Applications, J. Chemom 2002; 16:141-160

[11] Dedhiya *et al*, "Lercanidipine immediate release compositions" United States Patent Application 20060134212

[12] Eriksson *et al,* "New oral immediate release dosage form" United States Patent Application 20060034 911

[13] Thosar et al, Immediate release eplerenone compositions United States Patent 6410054

[14] Forsman *et al,* Immediate release tablet, United States Patent 6521253

[15] Luber *et al*, Immediate release tablet, United States Patent 7323192

[16] Jinjiang Li and, Xiaohui Mei, Applications of Cellulose and Cellulose Derivatives in Immediate Release Solid Dosage ACS Symposium Series, Vol.934

Polysaccharides for Drug Delivery and Pharmaceutical Applications Chapter 2, 19-55

[17] Sekar V, Chellan VR, Immediate release tablets of telmisartan using superdisintegrant-formulation, evaluation and stability studies. Chem Pharm Bull (Tokyo). 2008 Apr; 56(4): 575-7

[18] Rai V. K., Pathak N., Bhaskar R, Nandi B. C. Dey S. Tyagi L. K., Optimization of Immediate release tablet of Raloxifene hydrochloride by wet granulation method, International Journal of Pharmaceutical Sciences and Drug Research, 2009; 1(1) : 51-54

[19] *Rishikesh et al., IJPSR, 2013; Vol. 4(1): 124-131* ISSN: 0975-8232 Available online on www.ijpsr.com 131

[20] Hu RF, Zhu JB, Peng DY, Tang JH, Zhou A. [Optimization of formulation of Fufang Danshen immediate release tablet by colligation score] china journal of chinese materia medica Bibliographic details 2006, VOL 31; NUMB 5, 380-382, Publisher academy of traditional chinese medicine

[21] Margret Chandira. R., Jayakar. B, Pasupathi, A. Chakrabarty, B. L. Maruya P, Design, Development and evaluation of immediate release atorvastatin and sustained release gliclazide tablets Journal of Pharmacy Research, Vol. 2, No 6 (2009)

[22] Vaishali Kilor, Nidhi Sapkal, Jasmine Awari, Bharti Shewale, Development and characterization of Enteric-Coated Immediate-Release Pellets of Aceclofenac by Extrusion/ Spheronization Technique Using Carrageenan as a pelletizing Agent, AAPS PharmSciTech Vol. 11, Number 1, Mar 2010, DOI: 10.1208/s12249-010-9389-9, Pages: 336-343

[23] B.G. Shiyani, R. B. Dholakiyal, B. V. Akbari, D. J. Lodhiyal, G. K. Ramani, Development and evaluation of novel immediate release tablets of Metoclopramide HCI by direct compression using treated gellan gum as disintegration-accelerating agent. Journal of Pharmacy Research 2009, 2(9), 1460-1464

[24] Primojel® and Primellose® superdisintegrants, Product group overview, www.dmv-fonterra-excipients.com

[25] Margret Chandira. R., Jaykar. B., Chakrabarty B. L., Formulation and evaluation of Orodispersible tablets of terbutaline sulphate, Drug Invention Today 2010: 2(1), 31-33

[26] Guidance for Industry Immediate Release Solid Oral Dosage Forms Scale-Up and Post approval Changes: Chemistry, Manufacturing, and Controls, *In Vitro* Dissolution Testing, and *In Vivo* Bioequivalence Documentation, Center for Drug Evaluation and Research (CDER) November 1995 CMC 5

[27] Guidance for Industry, Dissolution Testing of Immediate Release Solid Oral Dosage Forms, U.S. Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER), August 1997, (Internet) http://www.fda.gov/cder/guidance.html

[28] Lawrence X. Yu, Jin T. Wang, and Ajaz S. Hussain, Evaluation of USP Apparatus 3 for Dissolution Testing of Immediate-Release Products. AAPS PharmSci. 200; 4(1): article 1. DOI: 10.1208/ps040101

[29] Syed azeem, Shawetsharma Immediate Release Drug Delivery Systems: A Review vol. 1, issue 1, may 2011. IJBTR.

[30] Loyd Allen V, Nicholas, Popo vich G and Howard Ansel C. Ansel's Pharmaceutical Dosage Forms and Drug Delivery System, 8th edition. 233.

[31] Prasanth Sai R. V., I. Pujitha, Srinivas Thota and Nagu A. Formulation and Development of Entecavir Tablets Vol. 2 (3) Jul – Sep 2011 IJRPBS. 1239-1247.