3. Need for the study:
The orally administered drugs which are soluble in gastric medium, that type of drugs, completely absorb and exhibit the better bioavailability. The drugs which less soluble in water shows less absorption in the intestine due to limited solubility leading to less bioavailability. Thus, improve the solubility profile of poorly water solubility drug is optimum in order to increases their absorption and bioavailability problem. The poorly water soluble and relatively low dissolution of water insoluble drugs as for long had been a problems in the formulations of oral dosage form. This limits such as bioavailability absorption.

Despite of many disadvantages, the oral DD systems remain the preferred important routes of DD systems. Oral DD systems is the most prepared route which is to easy of ingestion, pains avoidance, patient compliances versatilities. Fast Dissolving tablets are intended to designed to disintegrates and dissolved in mouth, then it is easy consumed without the water, it is most important benefits over the other oral conventional dosage forms.

The oral routes of drug administration is the most used route, comparing to other routes, for the delivery of drug to systemic effect, by different dosage forms using different pharmaceutical products. Due to ease of transportability, comparatively low manufacturing cost and does not require sterile manufacturing condition, seems to be most popular in the conventional tablet formulations [Vishwakarma et al., (2011)]. To attain such popularity for solid oral dosage forms the administered drug is well absorbed in the form of stuffs of food that are daily ingested in spite of inherent constraints of GI physiology of oral drug delivery systems are subjected for varying extents of optimization for dosage form characteristics. Hence, it is very much essential to understand the fundamentals of different disciplines, including the pharmacodynamics, pharmacokinetics gastrointestinal physiology and the formulation design which in turn helps to develop an oral pharmaceutical dosage forms successfully.
Some problems associated with existing oral dosage forms.

- Swallowing powder and liquids may become difficult in patients who may suffer from tremors.
- There may be gastrointestinal ulceration due to adherence to an esophagus, dysphasia and obstacles.
- Due to the swallowing of solid forms of tablets or capsules dosage forms may produce the difficulty in young adult patients due to incomplete development of nervous system muscular systems.
- The liquid medicaments like, syrups and suspensions stored in multidoses bottles, uniformity of the each dose is difficult.
- The buccal tablets formulation leads irritation to oral cavity of mucosa, due to this reason the patients may refused to take such medications.
- The main factors is cost of products for parenteral preparations which are more costly and discomfort [Panigrahi et al., (2010)].

Different criteria for selection of an ideal FDT dosage forms and ideal properties of the dosage forms.

- It should be pleasing mouths feel effect without the need of water for administration.
- Fast dissolving / dispersersing/ disintegrating in mouth in a few seconds.
- It should be acceptable amount of taste masking property.
- After administration of dose it leave minimal residue on the mouth. [Panigrahi et al., (2010)].

The approach of sophisticated multiple disciplines yield much complexity in the design and optimization of the system. The well understanding of aspects such as pharmacokinetic, pharmacodynamics and physicochemical aspects of the drug. Based on the mode of drug delivery the physiological characteristics of the GIT and physicochemical characteristic factor the dosage form is designed [Chien et al., (1992)] The drug development is essential in any case of scientific framework which helps in
development of this delivery system. The percent acceptability of oral drug administrations is reported up to the 50 to 60% of dosage forms in spite of difficulty in swallowing tablets and capsule dosage forms. [Indurwade et al., (2002)]. Dysphagia is kind of common symptom characterized by problem in difficulty of swallowing especially in pediatric and geriatric patients, by the physiological changes associated with the patients. In view of this problem rapidly dissolving or disintegrating tablets in the oral pediatric and geriatric patients people but are also ideal for active people [Bhushan et al., (2000)].

Presently the population of geriatric patient though is minor, its rate of growth is increased and hence the pharma industry has increasingly aware the need of the drug this group may be considered as a separate group in pharmaceutical Medicare. The pharmaceutical industry will have significantly impact to the development of oral drug delivery systems. [Bhushan et al., (2000)]. FDT are dosages, which dissolve fastly in the saliva. FDT are formulated to dissolves in saliva for fast release. termed as FD tablets and those contains some superdisintegrants which increases the disintegration of tablets in the mouth cavity, and are named as FD tablets [Prajapati et al., (2009)].

A FDT in more cases, the tablet that dissolve in the mouth without the presence of water. Most of the oral FD drug delivery systems also available in film form contain taste masking agents. This masked active drug content is then swallowing with saliva along to the soluble ingredients and insoluble additives. This is known as melt of tablets in mouth, Porous tablets, dispersible tablets (ODT), quick dissolving tablets [Prajapati et al., (2009)].

Some advantages over the other conventional tablets formulations

- Improved compliance/added convenience with superior therapeutic benefit.
- No water and chewing needed with good taste obtained by taste masking.
- It should be formulated to, after administration of dose it leave minimal residue in the mouth.
- Enhanced stability, less sensitivity to different environmentals conditions.
Various Challenges for the development of FDT”s

- Bringing the fast disintegration of the tablets, this leads to increase the solubility of drug in the mouth.
- Ensure that to avoid more frequency of administration of tablets, within the less frequency only gives the action.
- Bringing sufficient amount of mechanical strength. In some other type of the oral dosage forms not sufficient mechanical strength is produced, due to so many reasons behind it, for that reasons only, in this work make to produce the sufficient mechanical strength.
- Ensure minimum residue in the mouth cavity.
- Protection from the environmental conditions like, moisture.
- Good packaging design of tablets. [Bandari et al., (2008)].

Formulation aspects in developing the FDT”s tablets: 

- FDT”s are formulated by utilization of different processes, which different in their methodology and different in various properties like, mechanical strength, taste and mouth feeling, swallowability, drug dissolving in saliva, stability and bioavailability [Bandari et al., (2008)].

Some Conditions and reasons of using FDT”s dosage forms:

- Pains, diarrheas, migraine, Anxiety, Insomnia.
- Parkinsons diseases.
- Alzheimers disease.
- Psychosis.
- Hypertension.
- Cholesterol.
- Transplantation.[Ghosh et al., (2011)].

Cholesterol and triglycerides are the major plasma lipids present in the body which are essential for human health. Cholesterol is synthesized by the liver and is important
component of the cell membranes serves as precursors to the bile acid and steroid hormones. Lipids are insoluble in water and they must be transported through blood in specialized complexes, called lipoproteins [Tierona and David Riley., (2009)]

Following are different types of cholesterol

Very low density lipoprotein (VLDL): This cholesterol is composed of 50% to 65% glycerides and 20% to 30% cholesterol and is synthesized by the liver. It is responsible for transporting the triglycerides to adipose and muscular tissue.

Low density lipoprotein cholesterol: It is a cholesterol consists of a predominantly cholesterol inner core. It is obtained from the breakdown of the metabolites of VLDL. It is made up of 51% - 58% of cholesterol and 4% - 8% of triglycerides. The important function is to deliver the cholesterol from the liver cells.

High density lipoprotein (HDL): This type of cholesterol is a good cholesterol, it protects arterial disease from occurring as it takes away from the cells and back to liver. Once in the liver it is breakdown or excreted from the body in the form of waste. The HDL is the densest of lipoprotein. Other lipids that play a role in healthy arteries are chylomicrons and triglycerides, if these cholesterols increases in the body, there may be chances of diseases.

Hyperlipidemia is a disease characterized by increased plasma lipids level may be due to genetic factors (primary) and secondary factors such as diabetes, hypothyroidism, and nephritic syndrome. The daily consumption of food provides required cholesterol and 20%-25% is synthesized by the liver. The remaining is synthesized by the intestine, adrenal glands, reproductive organs and other tissues. Elevated blood levels are harmful and lead to cardiovascular diseases. Particularly the low density lipoproteins cholesterol (LDL), it deposited in the inner wall of large, medium sized arteries such as atherosclerotic plaque. This causes obstruction to the arteries, leads to the hypertension and reduction of oxygenated blood to which is reach to the heart and leads to increase the risk of coronary heart diseases, myocardium infarctions and cerebral arterials disease. The liver of an individual with average frame and weight synthesizes about 1000 mg of
cholesterol daily. The total cholesterol content of the body is approximately 35 grams. It is transferred by the bile into the intestinal tract. About 50% of excreted cholesterol is reabsorbed by the digestive system and pumped back into circulation. This cholesterol recycling is continuous in nature [Tierona and David Riley., (2009)].

Causes of hyperlipidemia:

   Hyperlipidemia is mainly due to genetic and environmental factors, including:

7) Presence of diseases such as diabetes, hypertension, hypertriglyceridemia, kidney and liver related diseases.
8) Family history to developing CHD or CVA early in their life (under 55 for brother and father and under 65 years of age for mother and sister).
9) Gender: Men have more risk to developing hyperlipidaemia compared to women.
10) Age: A person becomes older, so there may be chance for developing atherosclerosis.
11) Many foods like eggs, butter, liver, kidneys, and certain sea foods contain cholesterol, and other foods, like red meat, many cheeses, creamy cakes, ice cream, sausages and hot dogs have high contents of saturated fats and may affect to outcome of cholesterol blood concentration.

12) Sedentary lifestyle: It has been shown that non-vigorous physical activity leads to reduce LDL and elevate HDL blood levels. The bad habits such as smoking and over bodyweight are also responsible for hyperlipidaemia.

Major risks of Hyperlipidaemias:

Atherosclerosis:

It is a disorder, occurs when the cholesterol, fat and calcium deposits in the arterial linings form multiple plaques. A plaque normally consists of three components Atheroma it is a fatty, soft, yellowish nodular mass deposit in the centre of a larger plaque that is consists of macrophages, which are the cells that play a role in immunity. A layer of cholesterol crystals. Calcified outer layer. Atherosclerosis is leads to cardiovascular disease.
Coronary Artery Disease:

It is a condition which arteries are narrowing leads to less supply the blood to myocardium, and results in limiting blood flow and insufficient amounts of oxygen to meet the needs of the heart. The narrowing may progress to the extent that the heart muscle would sustain damage due to lack of blood supply.

Myocardial Infarction:

It is a condition, when blood and oxygen supplies are partially or completely blocked from flowing in one or more cardiac arteries, leads to damage or death of heart cells. The blockage is by formation of a clot in the artery. This condition is known as heart attack.

Angina Pectoris:

It is termed as angina, this condition is not an disease. This is characterized by chest pain, discomfort or a squeezing pressure. The pain may be felt in the shoulders, arms, neck and back. Angina is a condition occurs as a result of reduction or lack of blood supply to a part or the entire heart muscle and impairment of waste removal. Poor blood circulation is usually due to CHD when partial or complete obstruction of the coronary arteries is present. Angina attacks may be spasm of the arteries. Angina may be a symptom of coronary micro vascular disease (MVD), a condition that affects the heart’s smallest arteries.

Stroke:

This condition affects, when blood circulation of the brain is blocked. The blood supply which carries oxygen, glucose, and other nutrients is disrupted leads to brain cells die and become dysfunctional. Usually the strokes occur due to blockage of artery by a blood clot that breaks loose in a small vessel within the brain.

The enhancement of solubility, rate of dissolution and enhancement of bioavailability of a drug is a task of challenge in development of drug formulation. Around 40 percentages of the NCEs presently revealed are drugs of poor water solubility. Solubility and rates of dissolution are the basic factors affecting the progression of development of formulations.
Majority of newly discovered drug molecules fail to reach the market because of their poor solubility in water due to their lipophilicity. Pharmaceutical investors are investing large amount of shares on New Chemical Entities, and in due course, the ability to convey drugs that are poorly water soluble will be significantly increasing in the forthcoming days. In the same manner, manufacturers of generic medicines are forced to follow commercially able techniques for drug delivery because more number of low water soluble drugs is patented and there will be an immense competition due to pricing factors.

These workers carried out their research on new methods for the enhancement of solubility, enhancement of bioavailability and enhancement of rates of dissolution of class II and Class IV drugs. Therapeutically efficacy of drugs depends primarily upon bioavailability and finally on the water solubility of drug entities. Important parameter for the achievement of required drug concentration in blood circulation for the correct pharmacological activity to be demonstrated is the solubility criteria.

Low bioavailability is a major problem during the development of oral delivery systems for pharmaceutical formulations arising due to poor water solubility. Oral dosage formulations occupy the 90 percent share in the totally administrated dosage formulations. Absorption of drug substances, enough and reproducible bioavailability, satisfactory pharmacokinetic profile and other factors are largely dependent on aqueous medium solubility or solubility in water regarding the particular compound in question. This aspect was the motivation for this present study.

Pharmaceutical approach, pharmacokinetic approach and biological approaches were the different approaches followed for the improvement of bioavailability. Pharmaceutical approach includes alteration of formulation, manufacturing process or adjustment of physicochemical properties of a compound. Pharmacokinetic approach involves the adaptation of changed structural properties of a substance. Biological approach follows the change in the route of administration of a drug. This approach depends on the rate of dissolution and solubility of the compound under study. When an active pharmaceutical
ingredient is orally delivered, it first dissolves in gastric acid and/or fluids of intestine and permeated through the walls of GIT to reach systemic blood circulation. Therefore absorption of a drug from GIT is limited by a number of factors, most important factor being low water solubility in turn low membrane permeability of that drug molecule. Because of this, during the enhancement of drug bioavailability, these two areas become very significant i.e. enhancement of drug aqueous solubility and improvement of permeability through membranes play an important role in the research area. BCS is the proper approach for the classification of drugs based on their water solubility and gastric/intestinal membrane permeability. Size reduction of particles, complexation involving the techniques (physical mixture, kneading method, method of co-precipitation), hydrotrropic technique for improvement of water solubility, solid dispersion techniques involving methods of (fusion or melt method, solvent method, dropping method), spray drying technique including spray drying and spray chilling methods, superficial fluid techniques by various techniques of (superficial anti solvent precipitation, gas anti solvent re-crystallization, solution enhanced dispersion by the use of supercritical fluids), preparation of nano-suspensions by methods like (media milling of nano crystals or nano systems, homogenization of water i.e. dissocubes, combined precipitation or homogenization, nano jet technology).

Emulsification and solvent evaporation techniques, preparation of nano crystals by preparation of drug crystals by using various solvents (organic solvents, preparation of drug crystals by adding water, by employing nano pure XP technology), spray drying, formulation of self-emulsifying drug delivery systems, chitosan based solvent change approach, preparation of dry elixir, preparation of drug composite particles, preparation of dihydrochloride drug particles and amorphous systems were the steps followed in their study. They concluded finally as to overcome the problems of drug solubility and limiting steps in rates of dissolution and to avail a quick action onset, dissolution enhancement of poorly wettable drug substances provides a modern approach and which is a challenging task for formulation researchers; use of bioavailability and solubility characters in drug formulation is an ideal approach [Pawar and Choudhary, (2012)].
The technological innovations in the formulation of orally fast dissolving films. Orally fast dissolving films called as OFDFs are the very recently marketed formulations which offer advantages over routine conventional and traditional dosage forms such as orally disintegrating formulations in convenient and easily usable manner. OFDFs are a type of advanced drug delivery system which as soon as positioned in the oral cavity, disintegrated immediately and dissolved within some seconds with no need to intake water. Such films are capable of releasing the drug in blood circulation throughout intra-gastric, sublingual or buccal route of drug administration and for local action. These films are specially used for the group of patients belonging to the category of pediatric, geriatric, psychic and chronically ill patients. Anti-asthamatic drug Salbutamol, Anti-histaminic drug Levocitirizine, Antiseptic drug Chlorhexidine and Anti emetic drug Ondensetran are the drugs which have been recently formulated as OFDFs. The pre requisite for the formulation for such films is that, the polymer used to prepare the films should be compulsorily water soluble.

Orally fast dissolving films are prepared by the techniques of solvent casting, semisolid casting, hot melt extrusion, solid dispersion extrusion or rolling method. Orally dissolving films have many advantages over conventional or traditional routine dosage forms. OFDF is a film whereas oral disintegrating tablet is a tablet. OFDFs have larger surface area, in turn, have greater dissolution whereas oral disintegrating tablets have lesser dissolution due to smaller surface area. OFDFs are better durability compared with oral disintegrating tablets. Oral disintegrating tablets have less patient compliance in comparison with OFDFs. OFDFs require low dose whereas oral disintegrating tablets require high dose. Oral disintegrating tablets have risk of choking and OFDFs have no risk of choking. Oral fast dissolving films are evaluated for mechanical properties including thickness test, dryness test, tack test, tensile strength, percent elongation, Young's modulus, tear resistance and folding endurance, and other tests such as organoleptic test, swelling test, surface pH test, contact angle, transparency, assay and content uniformity, disintegration test and in-vitro dissolution test [Bhyan et al., (2011)].
Solubility is an occurrence of solubilization of a solid phase in a liquid segment to yield a homogenous coordination. Opted amount of a drug substance in systemic blood circulation can be effectively controlled by the control over the important parameter of solubility to achieve correct pharmacological action. High dose of orally administered drugs is needed to achieve suitable plasma concentration in case of low aqueous soluble compounds. Formulation and advancement of new chemical constituents is always stumbling upon by the unavoidable difficulty of poor water solubility. The primary requirement for drug absorption is the condition where the drug for action must be present in the form of an aqueous solution at the desired location of absorption. For the formulations of liquid orals, water is the solvent of preference, but especially for the formulations of weakly basic or weakly acidic drugs with low water solubility, it will be difficult. Therefore, different methods are employed for the development of solubility of low aqueous soluble drugs such as micronization, modification chemically, adjustment of pH, dispersion of solids, complexation, co-solvency, micelle solubilization, hydrotropic method etc. Such techniques are used for the improvisation of solubility of low aqueous soluble drugs and additional improvement in its bioavailability.

The conventional techniques for the drug solubility are adjustment of pH, co-solvency and reduction of particle size. Micro emulsification and self emulsification approaches are new or novel methods. If a drug substance contains protonated groups (basic groups) or deprotonated groups (acid groups) then the solubility of that drug substance can be potentially increased by simple change of pH.

This method is suitable for orally administered drugs as well as parenteral or intravenous formulations. The effectiveness is dependent upon the area of administration, buffer capacity and tolerance parameters. The solubility of a low aqueous soluble drug can also be improved by adding another aqueous miscible solvent the drug has sufficiently better solubility known as co-solvent. Co solvents are the combination of water and another or more water miscible solvents example, PEG, propylene glycol and ethanol, which are employed to produce a solution of improved solubility of low water soluble drugs. This simple procedure is one of the most extensively employed method and easy for
evaluation too. The co solvency method is applicable for the formulation of both orally administered as well as parent rally administered substances. Particle size reduction is another traditional approach to improve inherently interrelated bioavailability and particle size. By the reduction of particle size, dissolution property is enhanced because of increase in surface area. Reduction of particle size is usually done by milling methods like jet milling and colloidal milling etc. It can also be achieved by the methods like micronization and nano suspension. Production of microemulsions is another technique used to increase the solubility. A micro emulsion is a pre-concentrated and optically lucid preparation which includes a combination of oil, hydrophilic surface active agent and hydrophilic vehicle solvent which can solubilize a low aqueous soluble drug.

These microemulsions are suitable for oral, parenteral, transdermal and percutaneous formulations. Cyclodextrins are constantly used for complexation with drugs to improve the solubility of drugs with low aqueous solubility and enhance drug stability, bioavailability and permeability. Inclusion complexes resulted from hydrophilic exterior ring and lipophilic interior help in the enhanced aqueous solubility and chemical stability. Surface active agents are also used for the improvement of water solubility and the technique is called as micellar solubilization method which is greatly dependent on critical micelle concentration. Supercritical fluid process or SCF process is a novel technique which employs supercritical fluids which dissolves non volatile solvents with the critical point of Carbon dioxide. The technique is an eco-friendly method, cost-effective too with the advantage of low temperature and pressure operation environment. Preparation of solid dispersions is another method for the enhancement of aqueous solubility of poorly water soluble drug substances. Solid dispersions are obtained by employing various methods such as fusion (melt) method and solvent technique. Here, the poorly soluble component is dispersed in an extremely soluble solid hydrophilic medium. Hydrotropic solubilization technique is another method employed for the solubilization of poorly aqueous soluble components in which a large amount of second solute substance is added to increase the solubility of another solute by the use of alkali metal salts of organic acids [Vemula et al., (2010)].
The solubility improvement techniques with importance of hydrotropic technique. Availability of a suitable concentration of drug on the required site of action is the fundamental criteria for the effectiveness of a formulation in therapy. Bioavailability and water solubility are the major criteria for the therapeutic efficacy of a drug molecule. Majority of the new drug entities invented today are basically lipophilic in character and most of them have low water solubility. About 40 percent of drugs discovered are poorly soluble in aqueous medium and have low bioavailability. Presently wide varieties of methods have been developed for the improvement of poor aqueous solubility and are adopted for the improvement of rate of dissolution of low water soluble compounds. One of such methods is hydrotropic solubilization technique which is a solubility event in which large concentrations of solubilizers are added to a known solute to enhance the water solubility of that compound. A hydrotropic substance is a compound which acts as a solubilizer for the poorly soluble compound in water medium. To facilitate the solubilization of hydrophobic or poorly aqueous soluble drugs particularly for the formulation of oral dosage forms, solubility will be an affecting factor which relics throughout the process.

Solubility is a critical and important factor which controls the efficacy of pharmaceutical formulations which plays a significant part in the development of new formulations. Solubility of a substance in a definite solvent is the concentration of definite solute in a saturated solution at a particular given temperature. The solubility of a particular compound will always be a deciding factor for the determination of usefulness of a formulation since solubility directs the concentration of a substance that will be soluble in turn the concentration available for its effective absorption and finally its bioavailability. The low water solubility of a drug substance affects the rate of dissolution due to limited absorption in the GIT dwelling period. Importance of solubility criteria is well defined by the BCS system in biopharmaceutical terminology and is classified into various groups. The explanation parameter according to BCS classification is based on solubility and permeability of a drug substance. Solubility is a vital and decisive factor for the final absorption and bioavailability of drugs.
Among the four distinct classes i.e. class 1, 2, 3 and class 4, the criteria is solubility with increasing permeability. Class 1 drugs are highly water soluble and have high permeability through membranes, and also have rapid rate of dissolution. Examples of such drugs are acyclovir, acetaminophen, buspirone, glucose antipyrine and diazepam. These have a well defined absorption pattern i.e. highly absorbed. Class 2 drugs are having low water solubility but have high permeability through membranes. Examples: amioderone, dapsone, glipizide. These drugs have a variable absorption pattern. Class 3 drugs show high water solubility but low permeability through membranes. For these drugs also absorption pattern is variable. Examples are: cloxacillin, cetrizine, and dicloxacillin. Class 4 drugs have low water solubility and low permeability. Absorption pattern of these drugs is very poor and examples for this category are mebendazole, furosamide, colistin, neomycin and amphoterecin B.

The common terms used to express solubility in water are very soluble (deltiazam, metaprolol), freely soluble (ipratropium bromide), soluble (carmustine, cyclophosphamide, procainamide, cyclophosphamide), sparingly soluble (Ramipril, quinidine sulphate, fluorouracil), slightly soluble (Atenolol, Valsartan), very slightly soluble (lomustine, flecainide,) and practically insoluble (irbesartan, melphalan, nifedipine,). The concentration is expressed in terms of number of parts of solvent required to solubilize 1 part of solute. Percentage, parts per million, molarity, normality, molality, mole fractions and milli equivalents are the associated terms.

These authors explained various techniques used for enhancement of solubility. The methods are nanonization, supercritical fluid re-crystallization (SCF), use of surfactants, evaporative precipitation, micronization, sonocrystallization, high pressure homogenization, nanomorph technology (NT), drug dispersion in carriers, use of co-solvents, crystal habit modifications, molecular encapsulation with cyclodextrins and chemical modifications. The authors discussed the importance and applications, mechanism of action of hydrotopes, method of preparation of hydrotropic solid dispersions and advantages of hydrotropic solubilization techniques.
Hydrotropes are classified into categories of aromatic anions (sodium benzoate, sodium salicylate), aromatic cations and aliphatic linear anions (sodium alkanoate) etc. The authors paid attention on mixed hydrotropic solubilization method and discussed the solubilization of curcuminoids, glipizide, aceclophenac etc [Sajid and Choudhary., (2012)].

The work on mouth dissolving tablets as a new approach to delivery of drugs. Mouth dissolving tablets are the tablet formulations which dissolve in saliva within some seconds without the need of drinking water or chewing and dissolve by rapid disintegration process. A mouth dissolving tablet within a period of 15 seconds to 3 minutes dissolves in the oral cavity. The excipients used currently in the formulation of mouth dissolving tablet usually allow rapid release of the drug for absorption resultant with a quicker dissolution rate. Super disintegrants are the most important and basic ingredients in the formulation of mouth dissolving tablets which act by absorbing water and swelling. The disintegrants act by one of the mechanism of actions either by capillary action, by swelling, because of heat wetting, because of gas release, enzymatic action, disintegrating particle repulsive forces or by deformation.

Mouth dissolving tablets present various compensations from biopharmaceutical research point of view with enhanced effectiveness over routine traditional dosage formulations. To name a few, requirement of lesser amount of the active constituent for effective treatment, superior pharmacokinetic profiles and enhanced drug bioavailability than conventional dosage forms [Kaur et al., (2011)].

The oral fast dissolving drug delivery systems are gaining popularity and recognition recently as new drug release systems as these systems are easy to make use of and achieving a lot better patient compliance especially babies and elderly patients due to difficulty of swallowing conventional dosage forms. Any solid dosage form comprising of drug components, disintegrating quickly generally within seconds when positioned on tongue is defined as Oral disintegrating tablet by the center for drug evaluation and research. A definition of fast dissolving tablet is, it is a type of solid dosage form which
disintegrated into minor divisions of granules and gradually dissolved in the oral cavity. The time taken for disintegration of fast dissolving tablet dosage form differs some seconds to just over a minute depending on the type of tablet and volume of the tablet. Collectively, oral disintegrating or oral dissolving drug release system can be defined as a solid dosage form that can dissolve or disintegrated within a span of a minute in the mouth cavity which results in a solution form or suspension form without the use of water for further dissolution.

When a novel drug release system is in practice, the Biopharmaceutical contemplations become very important. With no doubt these factors are pharmacokinetic parameters like drug absorption, drug distribution into systemic blood circulation, drug metabolism and excretion or elimination of metabolized drug. In traditional dosage forms, usually there will be delay in disintegration time thereby dissolution time. In contrast, disintegration time of fast dissolving tablet in oral or mouth cavity is very rapid in turn dissolution is very quick. Pharmaco-dynamic parameters like drug receptor interactions also are important considerations. Few model characteristics of oral fast dissolving tablets are mouth feel, hygroscopic nature and friability.

The prospective contenders for the category of oral fast dissolving tablets are Anthelmintic drugs, Analgesics and Antipyretics, Anti-arrythmic drugs, Antibacterial agents, Anticoagulants, Anti depressants, Anti-diabetics, Anti epileptics, Antifungal agents, Anti gout agents, Antihypertensive drugs, Anti-malarial agents, Anti muscarinic drugs, Anti neoplastic agents, Anti protozoal drugs, Corticosteroids, Diuretics, Enzymes, GIT agents, Lipid regulating agents. Emulsifiers, lubricants, flavors and sweetening agents and super disintegrating agents are the common ingredients of oral fast dissolving tablets. Traditional methods employed in the manufacturing of oral fast dissolving tablets are freeze drying method, tablet molding procedure, method of spray drying, method of direct compression, sublimation, technique of mass extrusion and lyophilization. Zydus, Wowtab, Orasolv and Durasolv methods are the novel patented techniques available in the United States market. Flashtab, Oraquick and Flashdose are the three other patented methods available outside the US market.
Oral fast dissolving tablets were evaluated for weight variation test, friability test, hardness test, disintegration time, wetting time, water absorption ratio, taste and mouth feel, in vitro dissolution and stability studies. ANNOVA test was employed for statistical evaluation [Panigrahi et al., (2010)].