LITERATURE REVIEW

1. **Raghavendra Kumar Gunda, et.al. (2016)** worked on Formulation Development and Evaluation of Carbamazepine Fast Dissolving Tablets. Carbamazepine, an antiepileptic, belongs to BCS Class-II and used to control some types of seizures in the treatment of epilepsy and Neuropathic Pain by blocking use-dependent sodium channels. He concluded that as the concentration of Superdisintegrant increases the release rate of drug was RAPID (Improved Solubility) eg: Crospovidone and Croscarmellose sodium, both of these Superdisintegrants can be used in combination since do not interact with the drug which may be more helpful in achieving the desired fast Dissolving of the dosage form for rapid action and improved Bioavailability.

2. **Rohit Gundamaraju, et.al. (2015)** studied the In vitro and in vivo evaluation of fast-dissolving tablets containing solid dispersion of lamotrigine. The effect of various hydrophilic polymers on the aqueous solubility of LM was studied. Polyethylene glycol (PEG 6000) was selected as the vehicle and SDs were prepared by melting and solvent evaporation method (SEM). Evaluation of SD for dissolution indicated SVM was more appropriate as seen from an enhancement in drug dissolution and concluded that the SDs prepared by SEM using PEG 6000 as hydrophilic carrier can be successfully used for improvement of dissolution of LM and resulted in faster onset of action as indicated by in vivo studies.

3. **VS. Ughde, et.al. (2015),** worked on Fast dissolving tablets and concluded that FDT serves as an alternative dosage form for patients who experience dysphasia (difficulty in swallowing) or for where compliance is a known issue and therefore an easier dosage form to take ensures that medication is taken. The target population has expanded to those who want convenient dosing anywhere, anytime, without water. The future potential for these products is promising because of the availability of new technologies combined with strong market acceptance and patient demand. Future possibilities for improvements in Rapid disintegrating and drug delivery are bright, but the technology is still relatively new.

4. **Samar A. Afifi, et.al. (2014)** focused to develop fast dissolving tablets of Stiripentol: a novel antiepileptic drug. Stiripentol (STP) is a novel orphan drug which is used as adjunctive therapy for the treatment of severe myoclonic epilepsy in infancy (SMEI, Dravet syndrome). Due to sudden onset of epileptic attack, it is necessary to formulate antiepileptic into such a delivery system, which provides immediate relief. Fast dissolving tablets of Stiripentol were prepared by direct compression method using different types of superdisintegrants such as croscarmellose sodium and sodium starch glycolate. The combined effect of croscarmellose sodium and sodium starch glycolate gave synergistic drug release effect. Fast drug release from mouth dissolving tablets of Stiripentol could enhance its bioavailability.

5. **Ujjwal Nautiyal, et.al. (2014),** studied the advantages, limitations, need for formulating FDTS, Formulation factors, excipients used, methodology and evaluation parameters. in pediatric and geriatric patients. FDT concept evolved to
overcome some of the problems that existed in conventional solid dosage form i.e. difficulty in swallowing of tablet in pediatric and geriatric patients. FDT may lead to improve efficacy, bioavailability, rapid onset of action, better patient compliance due to its quick absorption from mouth to GIT as the saliva passes. In future FDT may be most acceptable and prescribed dosage form due to its quick action (within minute).

6. Geetika Sharm., et.al. (2013), studied that orally disintegrating tablets have potential advantages over conventional dosage forms, with improved patient compliance, convenience, bioavailability and rapid onset of action. They are a very good alternative for drug delivery to geriatric and pediatric patients. They have significant advantages of both solid and liquid dosage forms, as they remain solid during storage which aid in stability of dosage forms and transform into liquid form within few seconds after its administration. As a result of the variety of technologies for its formulation, several commercial products are available in the market. Thus ODT has tremendous scope for being the delivery system for most of the drugs in near future.

7. Saurabh Mann., et.al.(2011), worked on various formulations and technologies developed to achieve fast dissolution/dispersion of tablets in the oral cavity, also describes in detail FDT technologies based on lyophilization, molding, sublimation, and compaction, as well as approaches to enhancing the FDT properties, such as spray drying and use of disintegrants. In addition, taste-masking technologies, experimental measurements of disintegration times, and dissolution have been also studied.

8. V.Ravichandiran., et.al.(2011), focused on the importance of Fast Dissolving Tablets and manufacturing methods. Fast dissolving concept provides a good opening for improving bioavailability of many drugs. FDTs offer lot of advantages over conventional dosage forms such as improved efficacy, bioavailability, rapid onset of action, better patient compliance. Particularly FDTs provide more comfort to pediatric and geriatric patients. FDTs can be prepared by several methods based on the drug and additives used. Usually FDTs possess less mechanical strength. But by applying some new technologies and additives FDTs with sufficient mechanical strength can be prepared. Even bitter drugs can be incorporated in FDTs by using taste masking agents. The research for FDTs is still going on. FDTs provide wide marketing also which makes the dosage form successful in the market. Many drugs will be formulated as FDTs in future for its market potential.

9. Gudas GK.,et al(2010), prepared FDT of chlorpromazine. The tablets were prepared with sodium starch glycolate, crospovidone, croscarmellose, L-HPC, pre-gelatinised starch. The blends were examined for angle of repose, bulk density, tapped density, compressibility index and Hausner’s ratio. The tablets were evaluated for hardness, friability, disintegration time, dissolution rate and drug content

10. Shirshand SB.,et al., (2010), developed fast disintegrating tablets of prochlorperazine maleate with a view to enhance patient compliance by direct compression method. In this
method, crospovidone and croscarmellose sodium in combination were used as superdisintigrant

11. Sarasija Suresh., et al., (2008), developed fast dissolving tablets of clonazepam by direct compression method with a view to enhance patient compliance. Three superdisintegrants, viz., crospovidone, croscarmellose sodium and sodium starch glycolate in different ratios with microcrystalline cellulose (Avicel PH-102) along with directly compressible mannitol (Pearlitol SD 200) to enhance mouth feel.

12. V.J. Kadam., et al. (2007), developed the fast dissolving tablets of Oxcarbazepine which offers a new range of products having desired characteristics and intended benefits. fast dissolving tablets of Oxcarbazepine were prepared containing Avicel PH 102 as a diluent and Ac-Di-Sol as a superdisintegrants by wet granulation technique.

13. BookyaPadmaja., et.al. (2018), worked on formulation and evaluation of metformin hydrochloride sustained-release oral matrix tablets. The aim of this investigation was to develop and optimize metformin hydrochloride matrix tablets for sustained release application. The sustained release matrix tablet of metformin hydrochloride was prepared by wet granulation technique using chitosan, xanthan gum, and hydroxypropyl methylcellulose at varying concentrations.

14. Basha Azeez Abdul Syed., et.al. (2017), worked on formulation and evaluation of sustained release matrix tablets of glipizide by employing synthetic and natural polymers. The aim of the study was to use different synthetic polymers like Ethyl cellulose, HPMC and natural polymers like Carrageenan, Chitosan, Gum karaya and Bhara gum which are suitable for delivering the drug for sufficient long time and reduce frequency of dose.

15. Mohanty Sangeeta., et.al. (2017), worked on evaluation of sustained release tablet of metformin in alloxan induced diabetic rat. In this study treatment of diabetic rats with the formulation significantly decreases blood glucose level for a prolonged period compared to pure Metformin HCL and Marketed Glyciphage treated rats.

16. KUMAR N., et.al. (2016), worked on formulation and evaluation of sustained released metformin hcl tablet using natural polymers . Metformin HCl matrix tablets were formulated and evaluated using different drug polymer (pectin/alginicate) by direct compression method. The blends were evaluated for precompression and post compression studies including swelling & erosion studies. In vitro release studies were carried out.

17. Laxmi Vijaya M., et.al. (2015), worked on oral sustained release tablets of metformin hydrochloride using natural polymers stated that the purpose of this research study is to formulate and evaluate Metformin HCl sustained release matrix tablet using natural polymers like xanthan gum and guar gum as release retarding agents by means of wet granulation method.
18. **Daharwall J. S., et.al. (2015)**, worked on formulation and characterization of metformin hcl sustained release matrix tablet by using *cassia toramucilage* as a release retardant and in this study various preformulation studies were performed leading with in-vitro studies of tablets to determine the rate of drug release.

19. **Babu Sridhar G., et.al. (2014)**, worked on formulation and *in-vitro* characterization of sustained release matrix tablets of metformin hydrochloride and state that development of Metformin HCl sustained release tablets is a good approach to sustain the release rate to overcome frequent administration and also to release the drug for a prolong period thus maintaining plasma level above the MEC for desired time period.

20. **Goud Bhaskar Uday Goundla., et.al. (2014)**, worked on formulation and design of metformin hydrochloride extended release tablets.to design a extended release dosage form of Metformin hydrochloride using various grades of hydrophilic polymers, hydroxy propyl methyl cellulose (HPMC K4M, HPMC K15M, HPMC K100M and HPMC K200M) and MCC.

21. **SaidaraoD., et.al. (2013)**, worked on formulation and evaluation of metformin sustained release tablets the objective of this investigation was to design and develop sustained release of Metformin tablets. Metformin sustained release tablets were developed using different polymers like HPMC K4 M, Guar gum and Eudragit with different ratios.

22. **PrajapatiBhupendra.et.al. (2013)**, worked on Metformin hydrochloride sustained release tablet using different matrixing tablet. As a result matrix tablets of Metformin HCl were successfully prepared using Carbopol 71, Carbopol 971, Xanthan gum, HPMC K100M, MCC as excipients by wet granulation method.

23. **Diwedi Rohini., et.al. (2012)**, worked on preparation and *in vitro* evaluation of sustained release tablet formulations of metformin hcl in which the release mechanisms were explored and explained with zero order, first order, Higuchi, Kromayer’s and Hixon-Croweel equations. The optimized formulation was found to be buoyant in stomach.

24. **Kumar Sampath K.P., et.al. (2012)**, stated that sustained release dosage forms are 
   a. designed to release a drug at a predetermined rate in order to maintain a constant drug
   b. concentration for a specific period of time with minimum side effects. Sustained Release is also providing promising way to decrease the side effect of drug by preventing the fluctuation of the therapeutic concentration of the drug in the body.

25. **Satyanarayana T., et.al. (2012)**, worked on formulation and evaluation of Metformin HCl extended release tablets. This study was aimed at the formulation development and evaluation of extended release tablets of metformin HCl, which releases the drug in a sustained manner over a period of 12 hours.
26. Senthil Kumar. L. DRK., et.al. (2011), worked on formulation, development and evaluation of metformin hydrochloride sustained release tablets and the study was undertaken with an aim to formulate, develop and evaluate the Metformin sustained release tablets using different polymers as release retarding agent.

27. Chandira Margret., et.al. (2010), worked on formulation and evaluation of extended release tablets containing Metformin Hcl in which the author found that the extended release formulation of Metformin Hcl, prolongs drug absorption in the upper gastrointestinal tract and permits once daily dosing inpatient with Type 2 Diabetes Mellitus .This newer formulation may enhance patient compliance with oral therapy compared to conventional immediate release.

28. SaharA.Ali, et al. (2014), have study about a labor has been made to develop gel type of transdermal therapeutic system comprising different concentrations of metronidazole with hydrophilic polymeric combinations using solid dispersion method. Two main parts including chemical and biochemical were discussed in this study. In the chemical part, In vitro drug release and kinetics of drug release were studied for all the prepared pharmaceutical formulations in this study.

29. A.M Suthar, et al (2010), have study Non-compliance which is mostly associate with bitter taste can lead to worsening of diseased condition The purpose of this research was prepare palatable liquid formulation by masking the intensely bitter taste of metronidazole (MNZ).

30. Shivakumar Y, et al (2010), has formulated bymetrodinadazole gel for local treatment. Six batches of metronidazole gels was prepared using natural biodegradable polymers Chitosan, guar gum and Locust bean gum in variable concentrations and were evaluated. The results revealed that the surface pH was within the range of neutral pH.

31. Praveen Singh M , et al (2013), is the colon targeting is a value in the treatment of crohns disease ulcerative colitis and amoebiasis at the present work is time dependent and pH dependent compression coated tablets of metronidazole targeting drug release in the colon.

32. M. Praveen kumar, et al (2011), The targeting of drug to the colon by the oral rout could be achieved are the different approach involved matrix and coated system for which the drug release is controlled by the gastrointestinal pH. Transit time and intestinal flora