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FORMULATION AND EVALUATION OF ZOLMITRIPTAN ORALLY DISINTEGRATING TABLETS

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Abstract:
*An Orally disintegrating tablet disperses readily in saliva and the drug is available in solution or suspension form for the immediate absorption and resulting in rapid onset of action. In the present research work Zolmitriptan Oral disintegrating tablet were prepared by wet granulation method using varying concentrations of Lycoat, Croscarmellose sodium and Ludiflash as super disintegrants. The formulations prepared were evaluated for precompression & post compression parameters. Form the drug excipient compatibility studies we observe that there are no interactions between the pure drug (Zolmitriptan) and optimized formulation (Zolmitriptan+ excipients) which indicates there are no physical changes. Post compression parameters was found to be within the limits. Among the formulation prepared the tablet containing concentration of Ludiflash shows 98.47±1.25% of the drug release within 60 min & follows first order kinetics. The overall result indicated that the formulation **F8** containing Croscarmellose sodium is better and fulfilling of the needs of the Orally disintegrating tablet.*
Key words: *Orally disintegrating tablets, Zolmitriptan, Croscarmellose sodium, FTIR.*

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1.INTRODUCTION:

There has been an increase in demand for more patient-friendly and compliant dose forms during the last decade. As a result, the demand for new technology development has been expanding year after year[1].

Because the cost of developing a new drug molecule is so high, pharmaceutical companies are now concentrating their efforts on the development of new drug dosage forms for existing drugs that have improved safety and efficacy while requiring less frequent dosing, as well as the production of more cost-effective dosage forms. The oral route is still the preferred route of administration for most therapeutic drugs used to elicit systemic effects, owing to its numerous advantages and high patient compliance when compared to many alternative routes[2].

Tablets and hard gelatin capsules constitute a major portion of drug delivery systems that are currently available. However, many patient groups such as the elderly, children, and patients who are mentally retarded, uncooperative, nauseated, or on reduced liquid-intake/diets have difficulties swallowing these dosage forms. Those who are traveling or have little access to water are similarly affected[3].

Pharmaceutical technologists have developed a novel oral dosage form called as Orally Disintegrating Tablets (ODTs) that dissolve fast in saliva, usually in a matter of seconds, without the requirement to consume it with water, to meet these medical needs. The rate of medication dissolution and absorption, as well as the beginning of clinical action and drug bioavailability, may be much faster than with traditional dose forms.[4-5]

Despite the fact that chewable pills have been around for a while, they are not the same as the new ODTs. Patients who find chewing difficult or painful can benefit from these new pills. Children who have lost their primary teeth but still have full use of their permanent teeth can benefit from ODTs. The ODTs technology, which allows tablets to dissolve or disintegrate in the oral cavity without the use of extra water, has received a lot of attention. Even when inserted in the mouth with limited bio-fluid, ODTs enable for fast solid breakdown or dissolving into a suspension or solution form. [8-9]. Orally disintegrating tablets are also known as orodispersible tablets, quick disintegrating tablets, fast disintegrating tablets, fast or rapid dissolving tablets, porous tablets, mouth dissolving tablets, and rapimelts, among other names. Excipients used in ODT technology are usually hydrophilic in nature and can be chosen based on the physicochemical qualities of the medication, such as hydrophilicity or hydrophobicity. If the active pharmaceutical ingredient is hydrophobic, the dosage form is referred to as a disintegrating tablet, whereas if it is hydrophilic, the dosage form is referred to as a quick dissolving tablet [10-11].

FORMULATION ASPECTS OF ODTs[12-19]

Important ingredients that are used in the formulation of ODTs should allow quick release of the drug, resulting in faster dissolution. This includes both the pharmacologically active ingredients (drug) and the excipients (additives).

Drug selection criteria

The ideal characteristics of a drug for oral dispersible tablet include

- Ability to permeate the oral mucosa.
- At least partially non-ionized at the oral cavity pH.
- Have the ability to diffuse and partition into the epithelium of the upper GIT.
- Small to moderate molecular weight.
- Low dose drugs preferably less than 50 mg.
- Short half-life and frequent dosing drugs are unsuitable for ODT.
- Drug should have good stability in saliva and water.
- Very bitter or unacceptable taste and odor drugs are unsuitable for ODT.

2. AIM & OBJECTIVES

The Aim and objective of this work is formulation and evaluation of oral disintegrating tablets of Zolmitriptan. More patient compliance dose forms have been in high demand for the previous two decades. As a result, the demand for this technology has been growing at a rate of three times per year. Because the expense of developing a new chemical entity is so high, pharmaceutical companies are concentrating their efforts on developing novel drug delivery systems for existing drugs with increased efficacy and bioavailability, as well as reduced dose frequency to lessen side effects. In these cases, the bioavailability of drugs are significantly greater than those observed from conventional dosage forms such as tablets and capsules.

Pre formulation studies:

- Selection of suitable drug,
- Selection of suitable excipients,
- Design of Zolmitriptan ODTs formulations by wet granulation technique using lycoat, Croscarmellose sodium and Ludi flash as super disintegrant.
- Drug-excipient interaction studies.

Evaluation for the pre-compression parameters of the formulations prepared by the Direct Compression Method:

- Bulk density
- Tapped density
- Angle of repose
- Carr's index
- Hausner's ratio

Evaluation of ODTs formulations:

- Hardness and friability
- Thickness & Diameter
- Weight variation
- Drug content uniformity
- Disintegration time
- Drug content
- *In vitro* dissolution rate
- Kinetic studies

Pre formulation studies[20-23]

Solubility

Solubility of Zolmitriptan was determined in pH 1.2, pH 7.4, pH 4.5 and 6.8 phosphate buffers. Solubility studies were performed by taking excess amount of Zolmitriptan in beakers containing the solvents. The mixtures were shaken for 24 hrs. at regular intervals. The solutions were filtered by using whattmann's filter paper grade no.41. The filtered solutions are analyzed by spectrophotometrically.

Determination of λ_{max}:

10 mg of Zolmitriptan was dissolved in 10 ml of 0.1 N HCl Buffer by slight shaking (1000 µg/ml). 1 ml of this solution was taken and made up to 10 ml with 6.8pH Phosphate Buffer, which gives 100 µg/ml concentration (stock solution). From this Stock solution (100µg/ml) pipette out 1ml to 10ml volumetric flask and makeup with 0.1 N HCl Buffer up to 10ml was prepared in 0.1 N HCl Buffer. This solution was appropriately diluted with 0.1 N HCl Buffer to obtain a concentration of 10µg/ml. The resultant solution was scanned in range of 200-400nm on Single beam spectrophotometer (YIS-294).

Calibration Curve for Zolmitriptan In 0.1 N HCl Buffer

Procedure:

Preparation of Standard Stock Solution:

10 mg of Zolmitriptan was accurately weighed into 10 ml volumetric flask and dissolved in small quantity of 6.8 phosphate buffer. The volume was made up to 10 ml with the 0.1 N HCl Buffer to get a concentration of (1000 µg/ml) SS-I. From this,1ml was withdrawn and diluted to 10 ml with distilled water to get a concentration of (100 µg/ml) SS-II.

Calibration Curve in 0.1 N HCl Buffer:

From the standard stock solution (SS-II), 0.2, 0.4, 0.6, 0.8,1 and 1.2 ml were withdrawn and volume was made up to 10 ml with 6.8 phosphate buffer to give a concentration of 2, 4, 6,8 10 and 12µg/ml. Absorbance of these solutions was measured against a blank of 0.1 N HCl Buffer at 223 nm for Zolmitriptan and the absorbance values are summarized in Table 2.

Calibration curve was plotted, drug concentrations versus absorbance was given in the Figure 2.

Compatibility Studies:

Infra-Red spectroscopy is one of the most powerful analytical techniques to identify functional groups of a drug.

Method: - The pure drug and its formulation were subjected to IR studies. In the present study, the potassium bromide disc (pellet) method was employed.

Formulation Of Oral Disintegrating Tablets of Zolmitriptan: [24-27]

Oral disintegrating tablets of Zolmitriptan were prepared by wet granulation technique according to the formulae given in the table. All the ingredients were weighed as per weighing record. Zolmitriptan, MCC, and povidone were sifted together through mesh#30.

Preparation of binder solution:

Weighed quantity of purified water was dispensed in a stainless-steel container and kept aside.

Dry mixing:

Zolmitriptan, MCC, and povidone were transferred into rapid mixer granulator and mixed for 10 minutes with impeller at slow speed(100rpm) and chopper off.

Granulation:

The binder solution was added to the above mixture and mixed for 2minutes with impeller at slow speed (70rpm) and chopper at high speed (100rpm). Purified water was added to the dry mix blend for 2minutes with impeller at slow speed(70rpm) and chopper at high speed(100rpm). The wet mass was kneaded for 1minute with impeller at slow speed (100rpm) and chopper at high speed(200rpm). The kneaded mass was milled using cone mill through 8mm screen at 15HZ speed.

Drying:

The wet mass was dried using hot air oven by maintaining 60^0c for 1 hour 45 minutes.

Sifting & milling:

The dried granules were sifted through mesh#24. particles retain on the sieve were further milled using multi mill through 1.5 mm screen at 100rpm with knives in forward direction.

Milled granules were sifted through mesh #24.

Sifting of extra granular materials:

Super disintegrants were sifted through #40. Magnesium stearate was sifted through mesh #60. Finally, the granules were transferred into 5litre double cone blender and blended for 5minutes at 20rpm.Then the granules were compressed using tablet punching machine. The formulated tablets were evaluated for post compression parameters.

Table No:1 Formulation table for Zolmitriptan oral disintegrating tablet

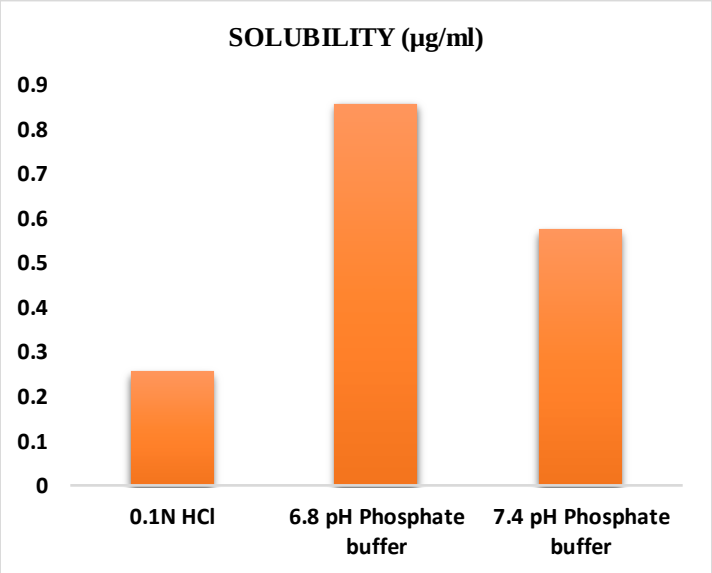
Ingredients (mg)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
Zolmitriptan	5	5	5	5	5	5	5	5	5	5	5	5
MCC	127	122	117	112	127	122	117	112	127	122	117	112
Povidone K30	5	5	5	5	5	5	5	5	5	5	5	5
Lycoat	5	10	15	20	-	-	-	-	-	-	-	-
Croscarmellose sodium	-	-	-	-	5	10	15	20	-	-	-	-
Ludiflash	-	-	-	-	-	-	-	-	5	10	15	20
Aspartame	4	4	4	4	4	4	4	4	4	4	4	4
Talc	2	2	2	2	2	2	2	2	2	2	2	2
Magnesium stearate	2	2	2	2	2	2	2	2	2	2	2	2
Purified water	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	**Q.S**
Total	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**

4.RESULTS & DISCUSSION:

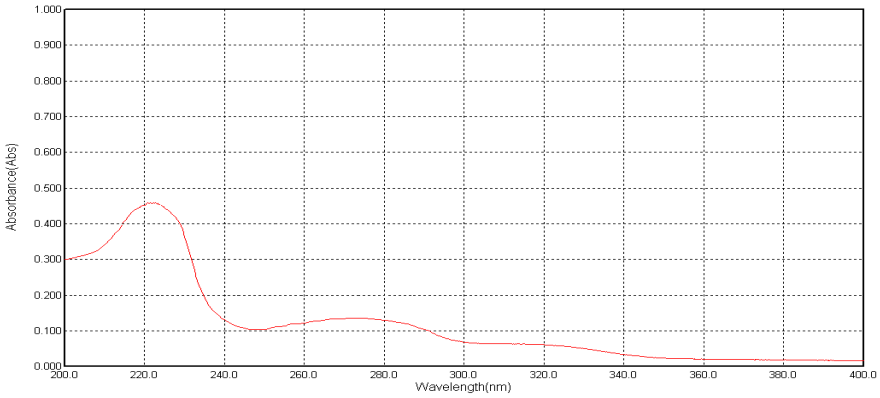
Solubility studies:

Solubility of Zolmitriptan was carried out at 25^0C using 0.1N HCl, 6.8 phosphate buffer, 7.4pH buffer and purified water.

MEDIUM	SOLUBILITY (mg/ml)
0.1N HCl	0.253
6.8 pH Phosphate buffer	0.856
7.4 pH Phosphate buffer	0.572



Discussion: From the above conducted solubility studies in various buffers, we can say 6.8 pH phosphate Buffer has more solubility when compared to other buffer solutions.



Determination of λ_{max}:

Fig 1: UV Spectrum curve of Zolmitriptan

Discussion: The Absorption maxima of Zolmitriptan drug in the 100% concentration by using 6.8pH Phosphate buffer was found to be at 223 nm.

Calibration curve of Zolmitriptan in 0.1 N HCl Buffer

Table No:2 Calibration curve of Zolmitriptan in 0.1 N HCl Buffer

Concentration(µg/ml)	Absorbance
0	0
2	0.112
4	0.228
6	0.345
8	0.463
10	0.575
12	0.681

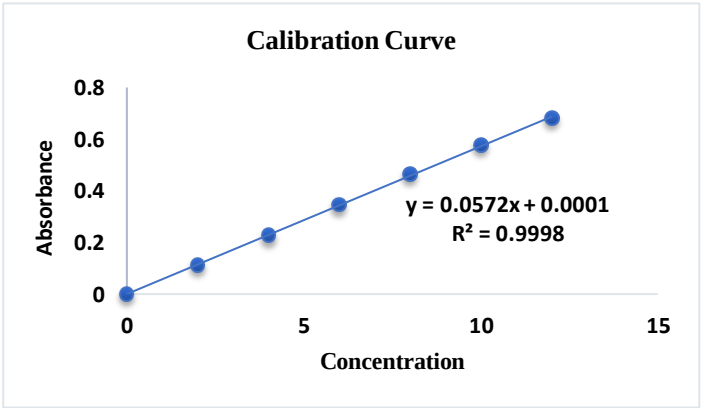


Fig 2: Standard graph of Zolmitriptan

Discussion: The standard calibration curve shown 0.9998, through that the drug obeys Beers and Lamberts law in the concentration range of 2 to 12 µg/mL. A standard graph was plotted by keeping the known concentration on X – axis and obtained absorbance on Y – axis

FTIR STUDIES:

Drug excipient compatibility: Drug and excipient compatibility was confirmed by comparing spectra of FT-IR analysis of pure drug with that of various excipients used in the formulation.

Pure Drug:

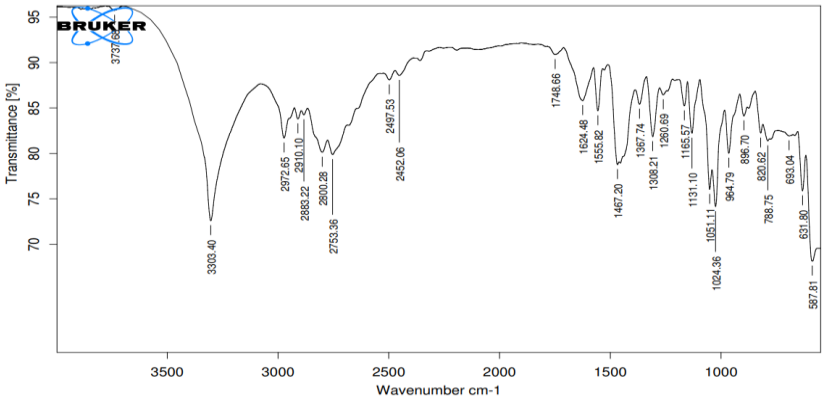


Figure 3: IR spectrum of Zolmitriptan

Optimized formulation:

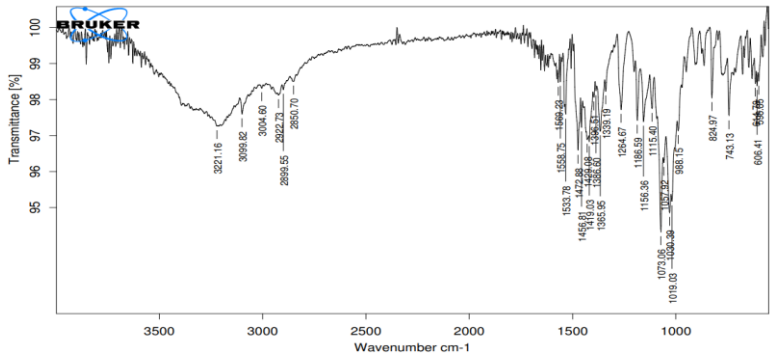


Figure 4. IR spectrum of Optimized formulation

Discussion: Form the drug excipient compatibility studies we observe that there are no interactions between the pure drug (Zolmitriptan) and optimized formulation (Zolmitriptan+ excipients) which indicates there are no physical changes.

Characterization of blend:

Table No:3 Pre-Compression parameters:

Formulation Code	Derived properties		Flow properties		
	Bulk density (mean± SD)	Tapped density (mean± SD)	Angle of repose (mean± SD)	Carr's index (mean±SD)	Hausner's ratio (mean± SD)
	0.518±0.08	0.624±0.09	22.58±0.42	11.84±1.16	1.12±0.09
F2	0.611±0.02	0.689±0.01	23.87±0.28	14.26±1.25	1.21±0.14
F3	0.585±0.07	0.654±0.05	25.65±0.47	15.26±2.15	1.20±0.22
F4	0.529±0.01	0.612±0.04	27.66±0.26	10.64±1.18	1.21±0.14
F5	0.571±0.05	0.667±0.08	25.85±0.78	13.68±1.19	1.18±0.12
F6	0.536±0.01	0.634±0.05	26.58±0.22	15.84±1.26	1.19±0.15
F7	0.541±0.08	0.646±0.04	27.29±0.48	13.54±1.47	1.18±0.12
F8	0.529±0.02	0.634±0.07	25.97±0.35	11.25±1.36	1.14±0.19
F9	0.581±0.01	0.674±0.05	27.55±0.74	11.74±2.25	1.18±0.15
F10	0.536±0.09	0.645±0.01	26.66±0.28	12.65±1.15	1.12±0.16
F11	0.571±0.07	0.685±0.07	24.85±0.36	13.85±1.26	1.15±0.17
F12	0.569±0.01	0.688±0.03	27.66±0.48	15.85±0.98	1.24±0.42

Discussion: The angle of repose of different formulations was ≤ 27.66±0.48 which indicates that material had good flow property. So, it was confirmed that the flow property of blends were free flowing. The bulk density of

blend was found between 0.518±0.08 g/cm^3 to 0.611±0.02 g/cm^3.Tapped density was found between 0.612±0.04 g/cm^3 to 0.688±0.03 g/cm^3.These values indicate that the blends had good flow property. Carr's index for all the formulations was found to be between 10.64±1.18-15.85±0.98 and Hausner's ratio from 1.12±0.09-1.24±0.42 which reveals that the blends have good flow character.

Characterization of tablets:

Post Compression parameters All the batches of tablet formulations were characterized for official evaluation parameters like Weight variation, Hardness, Friability, Tablet thickness and drug content and results are shown in the table no 4.

Table No:4 Characterization Zolmitriptan oral disintegrating tablets

Formulation	Average Weight (mg)	Thickness (mm)	Hardness (kg)	Friability (%)	Disintegrating time(sec)
F1	151.4±1.19	2.8±0.14	7.2±0.01	0.19±0.01	32.41±0.12
F2	152.2±1.18	2.3±0.18	6.5±0.03	0.37±0.02	30.25±0.19
F3	148.3±1.11	2.6±0.12	7.9±0.02	0.25±0.01	26.31±0.21
F4	149.4±1.18	2.5±0.16	6.8±0.01	0.43±0.02	24.48±0.16
F5	150.5±1.45	2.6±0.11	6.3±0.01	0.35±0.01	29.14±0.17
F6	149.3±1.37	2.4±0.12	7.3±0.06	0.25±0.02	26.25±0.24
F7	150.5±1.45	2.6±0.19	7.5±0.05	0.22±0.01	24.16±0.15
F8	**150.4±1.19**	**2.5±0.12**	**7.9±0.07**	**0.16±0.01**	**22.24±0.02**
F9	151.6±1.27	2.6±0.10	6.3±0.08	0.37±0.02	37.17±0.06
F10	149.9±1.59	2.7±0.15	7.5±0.22	0.45±0.02	32.16±0.02
F11	148.2±1.18	2.5±0.12	7.9±0.28	0.27±0.02	27.29±0.12
F12	151.1±1.35	2.3±0.09	6.4±0.46	0.20±0.01	25.12±0.04

Discussion: Hardness of the tablet was acceptable and uniform from batch to batch variation, which was found to be 6.3±0.01–7.9±0.07kg/cm^2. All the formulations passed the weight variation test as the % weight variation was within the pharmacopoeial limits of the tablet weight. Friability values were found to be less than 1% in all the formulations F1 – F12 and considered to be satisfactory ensuring that all the formulations are mechanically stable. Disintegration time as per IP, for all the formulations was found to be within 22.24 seconds, which was well within IP limit. Formulations with Ludi flash as super disintegrants shows quicker disintegration among all the formulations. Ludi flash with 20mg concentration as a super disintegrant shows very less disintegration time.

Drug content uniformity of formulations: The prepared formulations were analyzed for drug content and the data is reported in below Table 5. The drug content was found to be within the limits which show that the drug was uniformly distributed in all the formulations.

Table No:5 Drug content uniformity of formulations F1-F12

Formulation	%of drug content
F1	92.25±1.74
F2	94.68±1.61
F3	96.15±1.85
F4	97.42±1.25
F5	94.29±1.69
F6	96.45±1.20
F7	97.26±1.75
F8	98.16±1.09
F9	93.26±1.25
F10	94.18±1.64
F11	96.44±1.78
F12	98.71±1.29

Discussion: % drug content values of formulation F1 –F12 was found to be in the range of 92.25±1.74-98.16±1.09%.

Dissolution studies:

The prepared tablets were subjected to dissolution studies in order to know the amount drug release. As the concentration of super disintegrant increased, the drug release time decreased.

Table No:6 % Cumulative drug release of formulations F1-F12

Time (Min)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
0	0	0	0	0	0	0	0	0	0	0	0	0
5	30.25 ±1.45	37.28 ±1.54	39.18 ±1.32	45.42 ±1.51	36.28 ±1.20	37.17 ±1.67	51.25 ±1.28	55.17 ±1.57	39.38 ±1.21	41.86 ±1.42	45.21 ±1.74	48.94 ±1.54
10	44.75 ±1.64	44.15 ±1.95	48.17 ±1.02	59.26 ±1.45	43.15 ±1.62	45.42 ±1.54	65.47 ±1.67	66.26 ±1.02	43.85 ±1.45	46.24 ±1.67	51.81 ±1.56	53.13 ±1.47
20	53.86 ±1.84	49.48 ±1.67	56.31 ±1.65	64.18 ±1.36	55.47 ±1.27	58.16 ±1.20	73.15 ±1.25	74.74 ±1.36	53.23 ±1.61	54.72 ±1.55	59.98 ±1.25	61.47 ±1.59
30	67.38 ±1.57	55.26 ±1.57	78.46 ±1.25	88.25 ±1.20	66.15 ±1.54	67.25 ±1.65	82.26 ±1.75	86.19 ±1.45	65.53 ±1.28	68.32 ±1.67	65.85 ±1.57	75.21 ±1.47
45	73.21 ±1.78	77.18 ±1.29	87.82 ±1.20	93.41 ±1.74	78.87 ±1.56	79.41 ±1.84	89.78 ±1.61	94.28 ±1.67	78.74 ±1.64	80.48 ±1.45	78.25 ±1.68	86.43 ±1.64
60	85.44 ±1.62	89.48 ±1.58	93.12 ±1.36	95.58 ±1.62	83.48 ±1.28	85.84 ±1.26	96.29 ±1.74	98.47 ±1.25	86.85 ±1.94	89.42 ±1.84	92.46 ±1.21	96.26 ±1.28

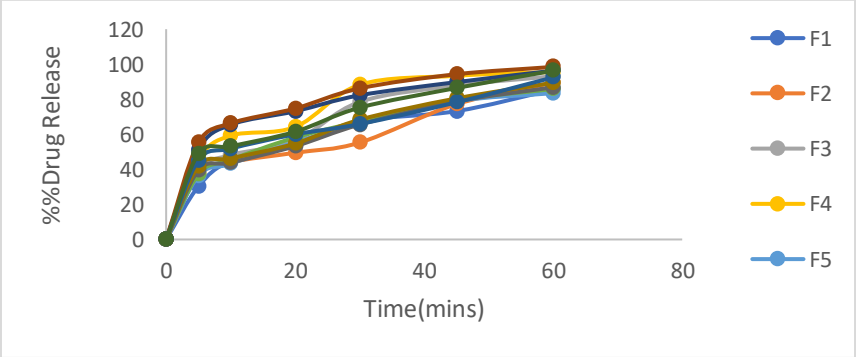


Figure 6: %DR of F1-F12

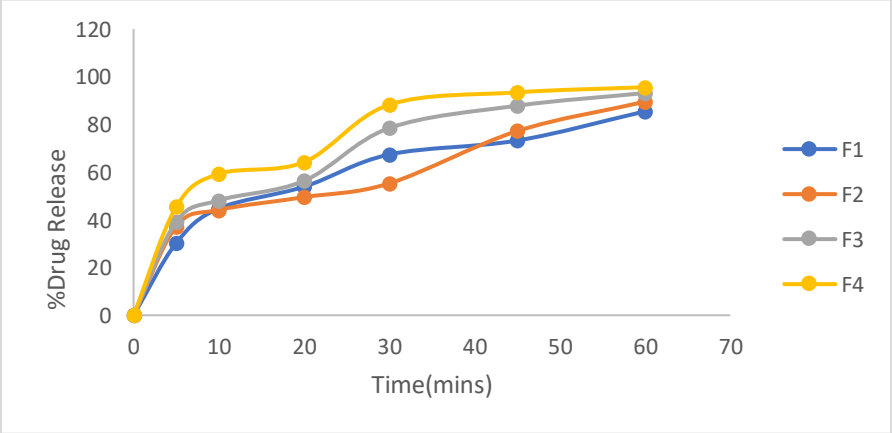


Figure 7: % DR of F1-F4

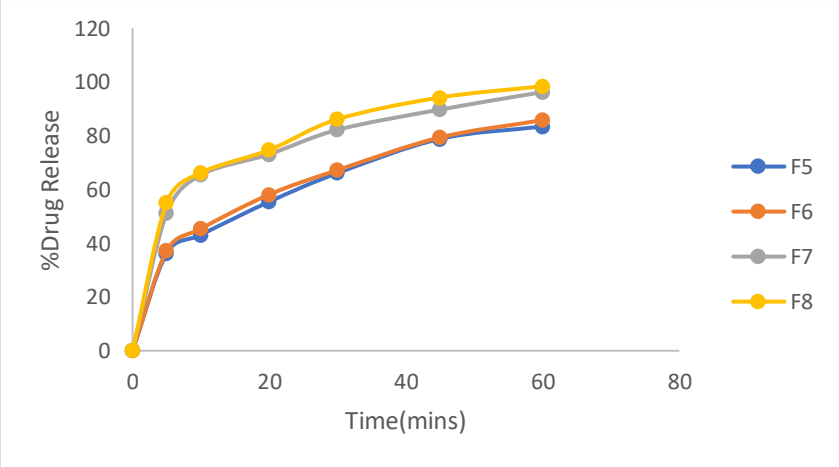


Figure 8: %DR of F5-F8

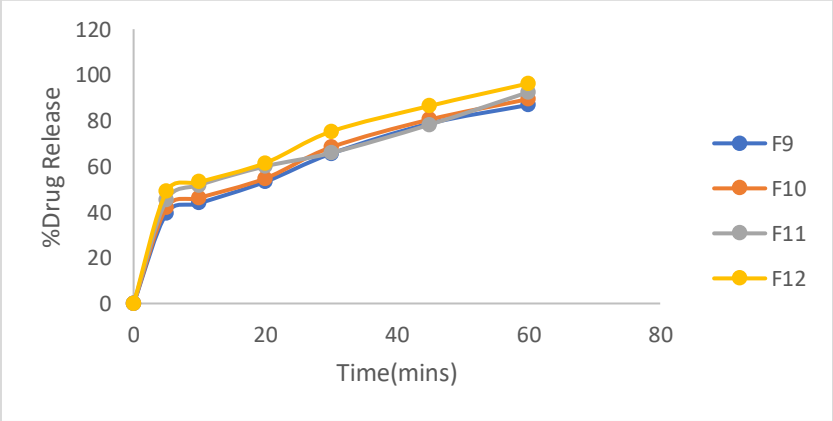


Figure 9: %DR of F9-F12

Discussion:

Among all the formulations F12 containing 20mg Croscarmellose sodium shows 98.47±1.25% drug release at the end of 60min. So F12 formulation was considered as the optimized formulation. Further kinetics were measured for F12 formulation.

Drug Release Kinetics Studies:

Zero Order:

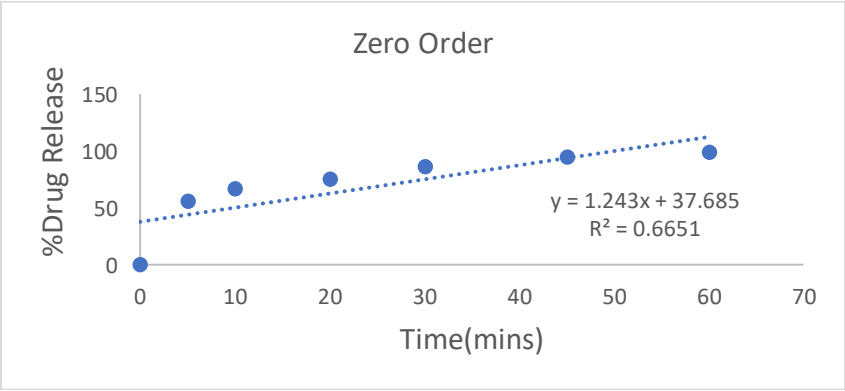


Figure no 10: Zero order plot of Zolmitriptan F8 Formulation

First Order:

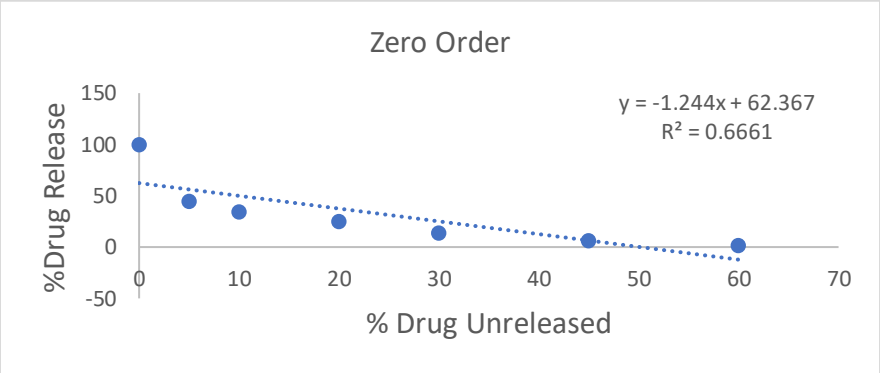


Figure No 11: First order plot of Zolmitriptan F8 Formulation (Time Vs Log% ARA)

Table No:7 Order of kinetic values of Formulation F8

Order of kinetics	Zero order	First order
Regression values	0.665	0.666

Discussion:

The drug release from the oral disintegrating tablets was explained by the using mathematical model equations such as zero order, first order methods. Based on the regression values it was concluded that the optimized formulation **F8** follows First order drug release.

5.SUMMARY:

The present study is an attempt to select the best possible diluent - disintegrant combination to formulate Oral disintegrating tablets of Zolmitriptan, which disintegrates in matter of seconds in the oral cavity, thereby reducing the time of onset of pharmacological action. Lycoat, Croscarmellose sodium and Ludi flash, were used as disintegrants. In all the formulations, and Magnesium stearate and talc were used as lubricant and glidant respectively.

The results of the drug – excipient compatibility studies revealed that there was no chemical interaction between the pure drug and excipients.

Wet granulation technique was employed to formulate the tablets, because of its cost effectiveness and due to reduced number of manufacturing steps.

The precompression parameters like bulk density, tapped density, Carr's index and angle of repose were determined. All the formulations showed acceptable flow properties. The post compression parameters like the hardness, thickness, friability and weight variation, disintegration time, disintegration time in oral cavity and Invitro release were carried out and the values were found to be within IP limits.

The percentage drug content of all the tablets was found to be between 85.18-96.71% of Zolmitriptan, which was within the acceptable limits.

Among all the formulations **F8** shows 98.47±1.25% drug release at the end of 60min. F12 contains Croscarmellose sodium (20mg), it shows better % drug release when compared to other formulations. So, F8 was considered as the optimized formulation.

The drug release kinetics shows that the optimized formulation F8 follows First order drug release.

6.CONCLUSION:

From the compatibility studies, it is concluded that, Lycoat, Croscarmellose sodium and Ludi flash, were compatible with drug Zolmitriptan and thus suitable for the formulation of Zolmitriptan Oral disintegrating tablets were prepared by wet granulation technique.

The pre-evaluation and post evaluation parameters like bulk density, tapped density, Carr's index and angle of repose and the hardness, thickness, friability and weight variation, disintegration time, disintegration time studies were performed for all the formulations, F1 to F12 by using 6.8 pH phosphate Buffer solution at 37^0C. Tablet containing Croscarmellose sodium (20mg), showed 99.26±1.28% drug release. *In-Vitro* release study is performed for 60 min. Optimized formula containing Croscarmellose sodium (F8) showed better release compare to other formulations and it followed First order drug release.

From this study, it was concluded that Ludiflash can be used in formulation of Zolmitriptan oral disintegrating tablet.

7.REFERENCES:

1. Sastry SV, Nyshdham JR, Fix JA. Recent technological advances in oral drug delivery: A

review. Pharmaceutical Science and Technology Today. 2000; 3:138-45.
2. Seager H. Drug-delivery products and the Zydis fast-dissolving dosage form. Journal of Pharmacy and Pharmacology. 1998; 50(4):375-82.
3. Lindgren S, Janzon L. Dysphagia; Prevalence of swallowing complaints and clinical findings. Medical clinics of North America., 1993; 77: 3-5.
4. Fu Y, Yang S, Jeong SH, Kimura S, Park K. Orally fast disintegrating tablets: Developments, technologies, taste-masking and clinical studies. Critical Review in Therapeutic Drug Carrier System. 2004; 21:433-76.
5. Brown D. Orally Disintegrating Tablets- Taste over Speed. Drug Delivery Technology. 2003; 3:58-61.
6. Kumaresan C, Orally Disintegrating Tablet - Rapid Disintegration, Sweet Taste, And Target Release Profile, pharmainfo.net sep9 2008.
7. Makino T, Yamada M. and Kikuta, J. Fast dissolving tablet and its production, 1993, European Patent. 0553777 A2.
8. Reddy L. H, Ghosh B, and Rajneesh. Fast dissolving drug delivery systems: a review of the literature. Indian Journal of Pharmaceutical Science. 2002; 64(4): 331- 336.
9. Seager H. Drug-deliver products and the zydis fast-dissolving dosage form. Journal of Pharmacy and Pharmacology. 1998; 50: 375-382.
10. Modi A and Tayade P. Enhancement of dissolution profile by solid dispersion (kneading) technique. AAPS Pharm. Sci.Tech., 2006; 7(3): 68-75.
11. Reig AR, Plazas F, Galvan CJ, Heras NJ, Artes FM and Gabarron HE. Acceptance survey of a fast-dissolving tablet pharmaceutical formulation in allergic patients. Satisfaction and expectancies. Allergol. Immunopathology. (Madr.,). 2006;34(3): 107-12.
12. Doheny K. You really expect me to swallow those horse pills? Am Druggist, 1993; 208: 34-35.
13. Chang RK, Guo X, Burnside BA, Couch RA. Fast dissolving tablets. Pharm Tech, 2000; 24:52-58.
14. Bogner RH, Wilkosz MF. Fast dissolving tablet. http://www.us pharmacist.com/old format. asp? url =new look/files/feat/fast dissolving.htm. Accessed 16 May 2008.
15. Yarwood R. Zydis – A novel fast dissolving dosage form. Man Chem, 1990; 61:36-37.
16. Pfister WR, Ghosh TK. Orally Disintegrating Tablets: Products, Technologies and Development issues. Pharm Tech, 2005; October: 136-150.
17. Biradar SS, Bhagavati ST, Kuppasad IJ. Fast dissolving drug delivery system: A brief overview. Accessed 20 January, 2006.
18. Harmon TM. Orally disintegrating tablets: A valuable life a cycle management strategy. http://www.PharmaceuticalCommerce.com. Accessed 6 February, 2008.
19. Reddy LH, Ghosh BR. Fast dissolving drug delivery systems: A review of the literature. Ind J Pharm Sci, 2002; 64(4): 331-336.
20. Wade Ainley and Weller J Paul. Handbook of pharmaceutical Excipients.2nd edition London the Pharmaceutical Press,1994; p.280- 282.
21. Nagarajan J. S. K., Muralidharan S. A validated RP-HPLC method for estimation of Domperidone in pharmaceutical formulation. Der Pharmacia Lettre, 2009, 1(1):162-168.
22. Jabbari bar F, Mortazavi A, Jalali-Milani A, Jouyban A. Analysis of Domperidone in Tamiflu® Capsules Using Micellar Electrokinetic Chromatography. Chem Pharm Bull., 2008, 56:1639-1644.
23. Validation of Analytical Procedures, Methodoly, ICH Harmonised tripartite guidelines; 1996:1.
24. V. Metker, A. Kumar, N. Pathak, K. Padhee, and S. Sahoo, "Formulation and evaluation of orodispersible tablets of lornoxicam," International Journal of Drug Development and Research, vol. 3, no. 1, pp. 281–285, 2011.
25. A. Arya, S. Sharma, J. Kumar, A. Chandra, and P. Jaiswal, "Formulation and evaluation of mouth dissolving tablets of ranitidine HCL," International Journal of Pharm Tech Research, vol. 2, no. 2, pp. 1574–1577, 2010.
26. R. B. Parmar, A. H. Baria, H. M. Tank, and S. D. Faldu, "Formulation and evaluation of domperidone fast dissolving tablets," International Journal of PharmTech Research, vol. 1, no. 3, pp. 483–487, 2009.
27. B. Senthilnathan and A. Rupenagunta, "Formulation development and evaluation of venlafaxine hydrochloride orodispersible tablets," International Journal of Pharmaceutical Sciences and Research, vol. 2, no. 4, pp. 913–921, 2011.