

















### CONCLUSION

In the present investigation Zolmitriptan immediate release tablets were successfully developed. The major challenge in this work was to study the effect of Primojel and AC-Di-Sol on *in vitro* release rate of immediate release tablet of Zolmitriptan. The immediate release drug delivery system was a promising approach to achieve quick release of drug and beneficial for acute diseases like migraine. FTIR and DSC studies revealed that the drug and excipients were compatible with each other and formulation is thermally stable. Direct compression methods were adopted for the preparation of Zolmitriptan immediate release tablets and the evaluation results of all the precompression parameters for dry blend of drug and excipients were satisfied the acceptance criteria that showed excellent flow properties. All the postcompression parameters like average thickness, hardness, friability, weight variation and disintegration also fall within acceptable limit. Formulation ZIRF<sub>10</sub> containing 2% of AC-Di-Sol and 4% of Primojel showed complete drug release within 35 minute (>99%) emerging as optimised formulation and using both the superdisintegrant in combination it gave better drug release profile. The formulation ZIRF<sub>10</sub> had also showed highest similarity factor and lowest difference factor when it was compared with the standard marketed formulation and considered as best formulation in dissolution profile point of view. By increase in superdisintegrant concentration the drug release profile became faster but the hardness and friability of the formulation were severely affected. Kinetic of *in vitro* drug release of optimized formulation ZIRF<sub>10</sub> found to follow Peppas's kinetic model having highest R<sup>2</sup> value with drug release mechanism as anomalous diffusion coupled with erosion. The stability studies were carried out according to ICH guideline and selected ZIRF<sub>10</sub> formulation were stable at accelerated stressed condition up to 3 months with a little change in physicochemical as well as drug release characteristics of the formulations. Thus from the results of the current study clearly indicate, a promising potential of the Zolmitriptan immediate release tablets drug delivery system can be used as an alternative to the conventional dosage form because it release the drug quickly and useful for the acute condition of migraine. However, further clinical studies are needed to assess the utility of this system for patients suffering from migraine.

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