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Comparision of disintegrants and super disintegrants activity in oral disintegration tablets

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Orally disintegrating tablets offer an advantage for populations who have difficulty in swallowing (dysphagia), disperse quickly in mouth and shows rapid action. Bioavailability of drugs can be increased by formulating oral-disintegrating tablets which can bypass first pass metabolism and provide a better therapeutic profile than oral route. Dissolution time is important for therapeutic action and it mainly depending upon the characters and percentage of disintegrating agents used. The main objective of this research was to compare the oral disintegrating time and % dissolution of sumatriptan succinate ODTs prepared by using disintegrants (carbopol 940, sodium CMC and sodium alginate) and superdisintegrants (crosspovidone, crosscaramellose and sodium starch glycollate). The tablets are prepared by direct compression method. The formulations was optimized by incorporating varying composition of different superdisintegrants (1.5, 3and 6% conc. each), disintegrants (2%, 4% and 6% conc. each) and combination of superdisintegrants, with other additives. All the excipients are tested for compatability. The preformulation parameters were analyzed for prepared tablet blend before compression. The thickness, hardness, friability, weight variation, disintegration time and drug content uniformity was evaluated for core tablets. The effect of these variables on drug release also studied. Based on the disintegration time, dissolution profiles, F-3 formulation (containing 6% crosspovidone) disintegrates with in 15±0.48 sec., gives 96.96% drug release with in 10min, F-10 formulation (containing 2% carbopol 940) disintegrates with in 24±0.33 sec., gives 94.10% drug release with in 10min and F-20formulation (the combination of cross povidone 6% and cross caramellose 6%) disintegrates with in 10±0.24 sec., gives 98.86% drug release with in 10min. so the crosspovidone at 6% and carbopol 940 at 2% concentration release the drug faster when compared to the other superdisintegrants and disintegrants respectively. But the combination of superdisintegrants will improve the disintegration time as well as drug release than simple disintegrants or superdisintegrants alone.

Biography

T. Vedavathi working as Professor and HOD in CMR College of pharmacy, Hyderabad. I completed her Ph.D. in A.U., Visakhapatnam, under the guidance of Dr. J Vijaya Ratna, in Pharmaceutics. She has 13 years experience in academics and has both national and international publications and participated and presented various national and international conferences and workshops. She chaired some scientific sessions in national seminars. She has guided 49 B.Pharm and 12 M.Pharm projects. My interest of research field is novel drug delivery systems and pharmaco economics.

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