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Comparative study of formulations of ondansetron hydrochloride orodispersible tablets by effervescent and sublimation methods

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Oral drug delivery has been known for decades as the most widely utilized route of administration. Dysphagia is a common problem encountered in all age groups in concern to solid dosage forms. To solve the problem of dysphagia and to improve patient compliance orodispersible tablets emerged as an alternative to conventional oral dosage forms. Ondansetron hydrochloride is a selective 5-HT3 receptor antagonist which acts as antiemetic. In the present work orodispersible tablets of ondansetron hydrochloride were formulated by effervescent and sublimation method using factorial design. In the effervescent method, crospovidone (1.31%-4.68%) was used as superdisintegrant whereas citric acid (7.95%-18.04%) and sodium bicarbonate (5.22%-28.77%) were used as effervescent agent. In the sublimation method, crospovidone (1.58%-4.41%) was used as superdisintegrant whereas camphor (6.34%-17.35%) was used as subliming agent. The prepared batches of tablets were evaluated for hardness, friability, drug content uniformity, wetting time, disintegration time and *in vitro* drug release pattern. Total 15 batches were formulated by effervescent method and 9 batches were formulated by sublimation method. Disintegration time of the formulations prepared by effervescent method was found between 13-36 secs whereas formulations prepared by sublimation method showed disintegration time between 7-39 secs. Among all the formulations, the formulation (S6) prepared by sublimation method using crospovidone 4% and camphor 8% was found to have the minimum disintegration time (7 seconds). Finally, it was concluded that orodispersible tablet of ondansetron hydrochloride can be successfully formulated using effervescent and sublimation method and can be used as a novel drug dosage form for pediatric and geriatric with improved patient compliance and enhanced bioavailability.

Biography

Shrawani lamichhane has completed her graduation from Tribhuwan University, Nepal in 2014.

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