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Formulation, Optimization and Evaluation of Immediate Release Tablet of Apixaban

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Abstract: Apixabanis anticoagulant drug is an anticoagulant for the treatment of venous thromboembolic events. It is taken by mouth. It is direct factor Xa inhibitor. Apixaban has half-life 9-14 hrs. In Artial fibrillation the intial dose 5mg once daily. Apixban is poorly soluble in water hence the basic objective of this study was to produce immediate release apixaban tablets containing super disintigrants via direct compression, to improve disintegration, dissolution and to get faster onset of action. Super disintigrants used in this formulation are microcrystalline cellulose and cross carmellose sodium, sodium starch glycolate. The drug-excipients interaction was investigated by FT- IR. Tablets were subjected to physicochemical characterization such as thickness, weight uniformity, drug content, in vitro drug release, and stability studies. Tablets were found to be satisfactory when evaluated for thickness, weight uniformity, *invitro* drug release, drug content and disintegration time. The in vitro drug release for optimized formulation $N_5$was found to be 96 % in 2.45 min. The optimized formulation N_5 (8% CCS) also showed satisfactory drug content (99.68%) and satisfactory stability. The optimized formulation $N_5$is further selected and compared with the *in-vitro* release profile of the innovator product.

Keywords: Apixaban, venous thromboembolic events, super disintigrants, Cross carmellose sodium.

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