The purpose of the present study is to optimize, formulate and evaluate sublingual tablets of anti-migraine drugs zolmitriptan (5mg/tablet) and rizatriptan (10mg/tablet) to give fast relief and an increase in the patient compliance. The powdered materials were compressed by direct compression technique using superdisintegrants like sodium starch glycollate, croscarmellose sodium and crospovidone and mannitol, avicel pH 102 are used as diluents. The blend was examined for Carr’s Compressibility Index, Hausner’s Ratio and Angle of repose were under the acceptable limits. The formulated tablets were evaluated for physiochemical properties and dissolution efficiency. The optimised formulations showed faster disintegration and more dissolution efficiency when compared to the other formulations. The wetting and disintegration time for the optimised formulation was found to be 5.0±1.0s and 7.7±0.58s for zolmitriptan tablets and 5.33±0.58s and 7.33±0.58s respectively for rizatriptan tablets. The optimised formulation showed 100.34±1.19 dissolution efficiency for zolmitriptan sublingual tablets and 97.47±0.36 dissolution efficiency for rizatriptan sublingual tablets respectively. The optimized formulations were characterized with the help of Scanning Electron Microscopy (SEM), Differential Scanning Calorimetry (DSC), Powder X-ray Diffractometry (PXRD) and Fourier Transform Infrared Spectroscopy (FTIR) studies show no interaction between the drug and the excipients. Based on disintegration and dissolution studies, the optimized formulations were subjected to stability studies and indicated good stability. These optimised formulations
were evaluated for *in vivo* release studies using rabbit model. The $C_{\text{max}}$, $T_{1/2}$, $T_{\text{max}}$ and AUC were calculated. These tablet formulations showed effective therapeutic $C_{\text{max}}$ when compared to clinical dose. The study concludes these formulated fast disintegrating sublingual tablets are promising alternative to oral administration route in acute management of migraine.