

ABSTRACT

The purpose of this research was to develop a matrix type, transdermal therapeutic system containing carvedilol which is having low bioavailability and short half life with different ratios of PVA : PVP polymeric combinations of 9:1, 8:2, 7:3. & with HPMC:EC Combinations of 8:1, 4:1, & 2:1 ratios. The physicochemical compatibility of the drug and polymers was studied by infrared spectroscopy. The results suggested no physicochemical incompatibility between drugs and the polymers. Invitro Release studies suggest combination of 7:3 of PVA:PVP & 8:1 of HPMC:EC to be the best. Skin permeation studies were performed by using keshary chein cell apparatus. DMSO, N-methyl 2- Pyrrolidone pharماسolve & tween 20 were used as the penetration enhancer in 10% & 20% proportion w/w of the dry polymers, on the selected combination by invitro release studies, results indicate that DMSO increases the skin permeation greater than the other two, tween 20 shows the least effect among the three, the combination of 8:1 HPMC:EC with DMSO 20% w/w was found to be the best formulation giving 88.66% of the skin permeation in the exvivo studies carried on skin of the wistar rats. The combination is also been proved to be safe in the skin irritation studies & stable at different conditions of temperature & relative humidity. As the drug directly enters the systemic circulation the developed transdermal films increases the efficacy of carvedilol for the therapy of hypertension.