ABSTRACT

The dissolution characteristic of furosemide was markedly enhanced by the preparation of drug dispersion in polyvinylpolypyrrolidone (PVPP) using solvent method with acetone solvent. The optimum drug - carrier ratio was 1:2 with solubility being 3.97 times greater than that of the drug alone. X - ray diffractometry and electron microscopy were used to determine the physical state of the loaded drug , whereas IR spectroscopy indicated insignificant interactions between the drug and the carrier. The amorphous nature of the drug in the dispersion was maintained over a year of storage. The chemical stability of the amorphous furosemide dispersed in PVPP was investigated at various temperature and humidity levels in comparison with that of pure furosemide. The acute oral LD_{50} value and subchronic toxicities (60 days) of orally administered furosemide and furosemide - PVPP (1:2) solid dispersion were studied at the dose level of 12 mg/kg/day in the laboratory rats. Although the treatment - related effects were detected in the histo - pathologic evaluation of liver and kidney tissues as compared to a control group , there were no meaningful differences in clinical blood chemistry values and histopathologic examinations of tissues from both furosemide and solid dispersion - treated animal.

Formulation of furosemide - PVPP solid dispersion

into direct compression tablets provided dosage form with fast - release property relative to test tablets of physical mixture and a commercial available product. The compressibility profiles of the test powders were also studied.