Formulation and Evaluation of Dry Syrup of Anti Retroviral Drug

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Abstract

The aim of present investigation was to formulate and evaluate dry syrup of an anti retroviral drug Nevirapine. As Nevirapine is BCS class II drug, to improve solubility β-cyclodextrin was used. To investigate complexes phase solubility studies performed in both 0.1 N HCL and 6.8 pH phsosphate buffer. Phase solubility studies indicating that A_L type curve obtained that means complexation follows K1:1. For complexation of drug three methods used, among them kneading method given better results. By using complexed drug dry syrup was prepared. In the dry syrup formulation poloxamer-188, hydroxyl ethyl cellulose were used as wetting agent, stabilising agent, dispersing agent. The concenstrations of 1%, 3%, 5% of poloxamer 188 and 1%, 1.5% 2% of HEC were selected. Dry syrup evaluated for flow properties like angle of repose and Hausner's ratio before reconstitution. Dry syrup evaluated after reconstitution for the following parameters like drug content, Invitro dissolution study, Dispersibility, Redispersibility, pH, Viscosity, Sedimentation volume and Time taken to disappear bubbles. F2 batch containing poloxamer 3% and HEC 1% was optimized. Accelerated stability studies conducted at 40±2˚C/75±5% RH for one month. After one month storage under accelerated conditions dry syrup was evaluated before and after reconstitution. Assay and pH were evaluated periodically within a week after reconstitution. From stability studies the prepared dry syrup found to be stable.

Key words: Dry syrup, Antiretroviral drug, Phase solubility study, β-cyclodextrin, kneading method,Evaluation.