Formulation and Evaluation of Medicated Microemulsion for Topical Application

Mohamed E. Abdelrahim, Ahmed Abdelbary, Mahmoud Ghorab.

Abstract

Objective: To formulate a microemulsion for topical use from cheap components a pseudoternary phase diagrams were constructed with formulae consisting of paraffin oil, cosurfactant (sorbitol or glycerol), surfactant (Brij97) and water. The existence of microemulsion regions was demonstrated.

Methods: Indomethacin was added to the best formulae, which produce microemulsions in gel form and evaluating them for their physical characters, release rate, physical and chemical stability and Pharmacodynamic. Fifty five formulae produce stable microemulsions in gel form. On incorporation of indomethacin only four formulae remain stable, clear formulae. They were used for further studies.

Results: Their order of drug release rate was first order. The four formulae were stable when stored at room temperature, or under stress. Shelf life of them would be minimum of 492 days and maximum of 712 days.

Conclusion: Indomethacin significantly inhibits edema, induced in rat paw by different percentage. Effect of the prepared microemulsions were between the effect of commercial injection form, highest effect, and commercial topical form, lowest effect. The microemulsion formulae prepared with paraffin oil, brij97, sorbitol or glycerol and water showed acceptable physical properties, drug release, stability and Pharmacodynamic effect.