

Formulation of topical hydroalcoholic gel containing indomethacin 0.2% using carboxy methyl cellulose and hydroxyl propyl cellulose

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Background and Aims: Indomethacin is an NSAID (non-steroidal anti-inflammatory drug) that is used in treatment of pain and inflammatory diseases. This medicine is more potent than piroxicam. Immediate and sustained release products of this drug have side effects on nervous and gastrointestinal systems so a proper replacement is needed. Use of the medicine via topical and cutaneous routes has advantages such as avoiding side effects on gastrointestinal; and supplying an amount of medicine in plasma for long time and long treatment. The purpose of the present study was preparation and evaluation of a topical gel of indomethacin with an appropriate appearance and stability to reduce side effects especially on gastrointestinal and to deliver enough amount of the drug to target site.

Methods: First the standard curve of indomethacin was plotted and then gels with different concentration of CMC and HPC were prepared. After examination the appearance and stability of different formulations, the best formulations were chosen and rheology, stability and release experiments were done.

Results: 5% HPC and 2.5% CMC were chosen as the best percentages of these polymers to prepare formulation of indomethacin. Drug release from these formulations followed a first order rate and rheograms of both formulations showed a mild plastic behavior.

Conclusions: According to the data obtained from the study, the best results were obtained with HPC polymer so that with increasing concentration, transparency and viscosity was much better but in concentration more than 5% the quality of the gels decreased.

Keywords: Indomethacin; Polymer; gel; Topical formulation