ABSTRACTS

The basic aim behind development of any drug delivery system (DDS) is to achieve a safe and effective therapy for the human being. The dispersible tablet provides a utility dosage form, reducing the need for multiple formulations of the same drug. The novel concept of Rapid dispersible drug delivery system emerged from the desire to provide patient with conventional mean of taking their medication. In recent days major concentration for development work is laid down on the development of organoleptically elegant such as good in taste and patient friendly drug delivery system for the usage of pediatric and geriatric patients. The greater bioavailability of a drug from Rapid dispersible and or dissolving formulations also make it preferable dose as compare to conventional oral dosage forms.

The main aim of this study is to develop new concept for the formulation of rapid dispersible tablets or Fast dissolving tablets using novel concepts such as solubility enhancement of active for fast and better release of drug to achieve better bioavailability of active in vivo, taste masking of active with various techniques to improve organoleptic properties and patience compliance. The design of formulation was basically developed for the pediatric and geriatric patients. Paracetamol and Tolfenamic Acid were used as model drugs in formulation study. The present study is an attempt towards application of some novel concepts in formulation of Rapid Dispersible Tablets.

On the basis of preformulation study and characterization of active, development of rapid dispersible tablets of Tolfenamic acid initiated with concept of co-micronization with diluents requires. The rapid release of formulation was the basic behind the experimental study. Optimization of formulation parameters was completed to achieve the balance between various physical properties such as disintegration and dispersion time and analytical properties such as release profile of
Abstracts

Tablets. The co-micronization showed a promising effect in the particle size reduction of Tolfenamic acid and providing more surface area in enhancement of wetting and dispersion properties of formulations. The release profile of tablets was directly affected by changing the particle size of co-micronized blend in formulation. The comparative evaluation of formulation F-1 (as reference formulation without micronization of active) proved the concepts of co-micronization in the Tolfenamic acid rapid dispersible tablets. There were no significant changes observed on physical and analytical parameters of optimized formulation during study.

Approach of dual technologies was the next step of research work. Formulation of Paracetamol rapid dispersible tablets was formulated with combination of two approaches such as solid dispersion and polymer coating of granules. Since the formulation was basically developed for the pediatrics so the taste of formulation was also an important factor in development of rapid dispersible tablets of paracetamol. The taste was also improved by using sweetener and flavors. Formulation of paracetamol was developed and evaluated on the basis of various physical and analytical evaluations; the comparative evaluation of formulation F-5 and F-6 with other formulations showed a better release profile and acceptable organoleptic properties proved the advantages of combined technology over mono technologies for formulation. The stability profile of formulation at accelerated conditions such as 40°C temperature and 75% relative humidity for 6 months does not have significant effect on physical and analytical properties of finished product.

A fixed dose combination also called as FDCs is defined as formulation of two or more active ingredients combined in a single dosage form available in certain fixed doses. On the basis of preformulation studies, there were no significant changes observed on FDCs of Tolfenamic acid and paracetamol. The formulation was designed by using optimized formulation of Tolfenamic acid and Paracetamol. Various physical parameters including disintegration and dispersion properties of finished formulation was found as per the regulatory requirement of pharmacopoeia (British and European Pharmacopoeia). The usage of disintegrants improves the release profile of co-micronized Tolfenamic acid but do not have any impact on solid dispersion of paracetamol in FDCs. The positive taste results during organoleptic evaluation of FDCs also showing promising acceptance of FDCs in pediatrics and
geriatric patient. The stability profile of formulation at accelerated conditions such as 40°C temperature and 75% relative humidity for 6 months does not have significant effect on physical and analytical properties of finished product.