

## 3<sup>rd</sup> World Congress on Bioavailability & Bioequivalence

March 26-28, 2012 Marriott Hotel & Convention Centre, Hyderabad, India

## Design development and in-vitro evaluation of mouth dissolving films of Granisetron hydrochloride

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Methods to improve patient's compliance have always attracted scientists towards the development of fancy oral drug delivery systems. Among them, mouth dissolving drug delivery systems have acquired an important position in the market by overcoming previously encountered administration problems. The main aim of present study is to develop a novel mouth dissolving tablet of Granisetron hydrochloride. It is an antiemetic drug used in both chemotherapy and radiotherapy induced emesis and belongs to BCS Class III which has oral bioavailability of 60% due to hepatic first pass metabolism. To overcome this drawback, the study was carried out to formulate and evaluate mouth dissolving tablet. The tablets were prepared by direct compression method using Emcosoy (soy-polysaccharide) as a novel superdisintegrant, microcrystalline cellulose as a diluent, talc as lubricant and aspartame as a sweetener. Drug-excipient interactions were investigated by DSC, FT-IR and isothermal stress testing. The results showed that there is no interaction. Satisfactory results were obtained when subjected to physico-chemical tests such as hardness, weight variation, thickness, surface pH, friability, drug content. Tablets were also subjected to in vitro drug release studies by using modified dissolution apparatus. The dissolution profile and disintegrating time were found to be satisfactory. It was found that the tablet disintegrates within 6 seconds. Hence it is concluded that the mouth dissolving tablet of Granisetron hydrochloride is the promising formulation that could improve the bioavailability of the drug and also provide immediate relief from emesis.

## New spectrophotometric methods for the determination of Zolpidem tartrate

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Zolpidem behaves as a sleep inducer without the muscle relaxant and anticonvulsant effects of the benzodiazepines. The GABA receptor complex. Zolpidem tartrate is a non benzodiazepine hypnotic agent binds preferentially to one benzodiazepine receptor subtype  $\omega$ -1 bezodiazepine-1 thought to mediate hypnotic effects. Two simple, precise, accurate, rapid and sensitive spectrophotometric methods were developed for the determination of Zolpidem tartrate in pharmaceutical dosage forms in phosphate buffer (pH 6.8). A double beam UV-VIS spectrophotometer (UV-1800, Shimadzu, Japan) connected to computer loaded with spectra manager software UV Probe was employed with spectral bandwidth of 1nm and wavelength accuracy of  $\pm$  0.3 nm with a pair of 10 mm matched quartz cells. In the first method the absorption maxima ( $\lambda_{max}$ ) was chosen at 242.86 and in the second method (Derivative spectroscopy) the amplitude was recorded (minima at 253.57 and maxima at 231.64) for the determination of Zolpidem tartrate. Zolpidem tartrate follows Beer-Lambert's law over the concentration range of 0.5-20 µg ml-1 (r<sup>2</sup>= 0.999) for both the methods. The % RSD in precision and accuracy studies was found to be less than 2.0. The proposed methods were validated and can be successfully applied for the determination of Zolpidem tartrate in pharmaceutical formulations.