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ABSTRACT BOOK

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Solubility and Dissolution Rate Enhancement of Rosuvastatin Calcium by Advanced Techniques

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Keywords: Solubility, Rosuvastatin, Nanosuspension, Microwave assisted, Solid dispersion,

Aim and Objectives: The aim of the present study was to improve the solubility and dissolution rate of Rosuvastatin calcium (RVS ca) by advanced techniques like nanonization by sonication and microwave assisted fusion method

Methodology: Batches of RVS ca nanosuspension were prepared followed by its conversion into solid dispersion (SD) by sonication and microwave assisted fusion method. Batches of SD of RVS ca were characterized for DSC, SEM, XRD and FTIR along with solubility study and dissolution rate.

Results and Discussion: Selected batch shows particle size of 134.2 nm, zeta potential of -33.2 (Fig 1), entrapment efficiency was 82.35%. Entrapment efficiency was found to be decreased with increased polymer concentration. Different polymers ratios were shown variation in particle size, drug content, entrapment efficiency and in-vitro drug dissolution. Solubility of RVS ca in distilled water was 0.315 mg/ml which was found to increased up to 0.478 mg/ml (Fig 2). In-vitro drug release of drug RVS ca was found to be 55.40% in 120 min whereas in case of solid dispersion it was 65.15% in 120 min. Conclusions: Solubility of RVS ca was increased by solubility enhancement techniques like nanonization by sonication and microwave assisted fusion methods.

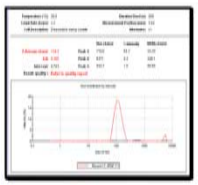

Fig 1: Particle size of RVS ca nanosuspension

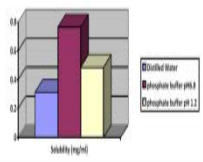

Fig 2: Solubility study of RVS ca solid dispersion

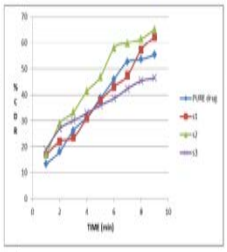

Fig 1: Dissolution study of RVS ca solid dispersion

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