

Formulation of mouth dissolving tablets of glipizide by microencapsulation technique using various polymers

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ABSTRACT

Mouth dissolving tablet of glipizide was prepared by using the micro encapsules of Ethylcellulose. The micro encapsules was prepared by Coacervation-phase separation method by using different polymers like Xanthan gum, HPMC and Ethylcellulose. The best result was found of Ethylcellulose. Mouths feel taste was excellent after studied on 10 volunteers and no bitter taste or grittiness claimed by volunteers. The % drug release was 95.95% in 24 hrs which is much better than other formulations. The study was of Fast release component for quick onset of action by absorption through oral mucosa. Controlled release component, which will form a suspension in the oral cavity and after swallowing of the suspension, will provide sustained action of the drug. Purpose to include controlled component in mouth dissolving tablet is that to reduce dosing frequency, Increase $t_{1/2}$ and controlled blood glucose level for prolonged period of time. This has been achieved after disintegration and dissolution studied the mouth dissolving tablets of glipizide by using the micro encapsulation technique. Problems of swallowing encountered by pediatric and geriatric patients can be overcome by formulating mouth-dissolving tablets.

Key words: Glipizide, fast release, mouth dissolving tablets, micro encapsulation, xanthan gum, HPMC, ethyl cellulose.

INTRODUCTION

Recent developments in technology have presented viable dosage alternatives for patients who may have difficulty swallowing tablets or liquids. Traditional tablets and capsules administered with an 8-oz. glass of water may be inconvenient or impractical for some patients. For example, a very elderly patient may not be able to swallow a daily dose of antidepressant. An eight-year-old with allergies could use a more convenient dosage form than antihistamine syrup. A schizophrenic patient in the institutional setting can hide a conventional tablet under his or her tongue to avoid their daily

dose of an atypical antipsychotic. A middle-aged woman undergoing radiation therapy for breast cancer may be too nauseous to swallow her H₂-blocker. Fast-dissolving/disintegrating tablets (FDDTs) are a perfect fit for all of these patients.^[1] FDDTs disintegrate and/or dissolve rapidly in the saliva without the need for water. Some tablets are designed to dissolve in saliva remarkably fast, within a few seconds, and are true fast-dissolving tablets. Others contain agents to enhance the rate of tablet disintegration in the oral cavity, and are more appropriately termed fast-disintegrating tablets, as they may take up to a minute to completely disintegrate¹.