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Formulation and Evaluation of Mouth Dissolving Film of Glycopyrrolate

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Abstract: *The present study focuses on the formulation and evaluation of glycopyrrolate mouth dissolving films (MDFs) as an innovative drug delivery system aimed at improving patient compliance and rapid onset of action. Glycopyrrolate, an anticholinergic agent widely used for its antisecretory and antispasmodic effects, typically suffers from delayed onset and poor patient acceptability due to conventional oral dosage forms. Mouth dissolving films offer a promising alternative by dissolving rapidly upon contact with saliva, eliminating the need for water and facilitating ease of administration, especially for pediatric, geriatric, and dysphagic patients.*

In this work, glycopyrrolate MDFs were prepared using solvent casting technique employing polymers such as Carboxymethyl cellulose (CMC) and polyvinyl alcohol (PVA), combined with suitable plasticizers, sweeteners, and taste-masking agents to enhance palatability. The films were evaluated for physicochemical properties including thickness, weight uniformity, folding endurance, surface pH, and drug content uniformity. In vitro dissolution studies demonstrated rapid disintegration and release of glycopyrrolate within minutes, confirming the efficiency of the formulated films.

Stability studies indicated that the films maintained their integrity and drug content over time under accelerated conditions. Overall, the optimized glycopyrrolate mouth dissolving films showed promising results as a convenient, effective, and patient-friendly drug delivery platform, potentially improving therapeutic outcomes in clinical practice...

Keywords: Glycopyrrolate, Mouth Dissolving Film, Carboxymethyl cellulose (CMC), Polyvinyl Alcohol (PVA), Solvent Casting, Rapid Disintegration, Anticholinergic, In Vitro Dissolution, Patient Compliance, Taste Masking..

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