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REVIEW

Orally disintegrating films: A modern expansion in drug delivery system

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Abstract Over the past few decades, tendency toward innovative drug delivery systems has majorly increased attempts to ensure efficacy, safety and patient acceptability. As discovery and development of new chemical agents is a complex, expensive and time consuming process, so recent trends are shifting toward designing and developing innovative drug delivery systems for existing drugs. Out of those, drug delivery system being very eminent among pediatrics and geriatrics is orally disintegrating films (ODFs). These fast disintegrating films have superiority over fast disintegrating tablets as the latter are associated with the risks of choking and friability. This drug delivery system has numerous advantages over conventional fast disintegrating tablets as they can be used for dysphasic and schizophrenic patients and are taken without water due to their ability to disintegrate within a few seconds releasing medication in mouth. Various approaches are employed for formulating ODFs and among which solvent casting and spraying methods are frequently used. Generally, hydrophilic polymers along with other excipients are used for preparing ODFs which allow films to disintegrate quickly releasing incorporated active pharmaceutical ingredient (API) within seconds. Orally disintegrating films have potential for business and market exploitation because of their myriad of benefits over orally disintegrating tablets. This present review attempts to focus on benefits, composition, approaches for formulation and evaluation of ODFs. Additionally, the market prospect of this innovative dosage form is also targeted.

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Contents

1. Introduction

Oral route of drug administration is a most preferred route due to its ease of administration, non-invasiveness, adaptability, patient compliance and acceptability. Regarding oral route of drug administration, many substitutes have continuously been presented by using recent novel technologies for pediatrics, geriatrics, nauseous and non-compliance patients. Bioadhesive mucosal dosage forms including adhesive tablets, gels and patches are outcomes of technological development. Among various dosage forms, the use of polymeric films for delivering medication into buccal cavity has developed great potential in recent era (Arya et al., 2010). Orally disintegrating films (ODFs), when placed on tongue, immediately hydrates by soaking saliva following disintegration and/or dissolution releasing active pharmaceutical agent from the dosage form (Chauhan et al., 2012). ODFs are kind of formulations which are commonly prepared using hydrophilic polymers enabling rapid dissolution upon contact with saliva. Oral disintegrating tablets (ODTs) and oral disintegrating films (ODFs) are the typical examples of orally disintegrating drug delivery systems. These systems were developed in late 1970 to serve as an alternative to conventional dosage forms, for instance, fast disintegrating tablets and capsules for geriatrics and pediatric patients having difficulty in swallowing conventional dosage forms (Liew et al., 2012). A typical ODF is usually equal to the size of a postage stamp. In market place, the introduction of ODT was strongly associated with counseling of patients about the appropriate administration by giving instruction like "do not chew/do not swallow". However, in spite of these