NEED FOR THE STUDY

Convenience of administration, patient compliance and safety are gaining significant interest in the design of dosage forms. Amongst the various routes of drug delivery, oral route is perhaps the most preferred and acceptable. However, tablets, capsules, and liquids, which are ingested orally, are difficult to swallow in case of dysphagia patients. Dysphagic patients experience difficulty in swallowing the conventional dosage forms and consequently do not take medications as prescribed which leads to ineffective therapy. Dysphagia can occur at all age groups, preterm babies to the elderly. Dysphagia is common in general populations and more common in elderly institutionalized patients and persons in long-term care facilities due to significant primary illnesses, including cerebrovascular accidents and neurodegenerative disorders. People who have been treated for head and neck cancer, such as laryngeal cancer or oral cancer, often experience swallowing problems. To ensure safety during oral medication administration, patients with dysphagia require an appropriate oral dosage form or modification of the dosage form. Crushing tablets and opening capsules are the main alterations of dosage forms and account for up to one third of oral drug administrations in long-term nursing homes. The crushed tablets and opened capsules are often mixed with food or beverages for ease of administration either with or without patient’s knowledge. Drug alteration implies a high risk for potential drug instability and modification of the product performance that is neither tested nor authorized by the pharmaceutical manufacturer and the regulatory bodies.

Secondly, cancer is the second largest non-communicable disease and it has a sizable contribution in the total number of deaths. Cancer can occur at any age, from pediatrics to geriatrics but it is highly associated with percentage of aged population of a country. Drugs such as methotrexate, anastrozole, cyclophosphamide, imatinib mesylate and capecitabine were selected as they are used as 1st line therapy for the treatment of various types of cancers. Initial research reveals that patients prefer oral to IV chemotherapy, so long as efficacy is not compromised.
Hence in the present study, the increasing trend of dysphagia and cancer incidence in pediatrics, adults and geriatrics has led to the development of new pharmaceutical preparations such as fast disintegrating tablets, fast disintegrating films and eatable gels incorporating anticancer agents. These formulations were formulated, optimized and evaluated for various product parameters.