Objectives of the present work

Literature survey revealed that the present formulation will be the novel form of delivering drugs for a prolonged period, by applying it on an affected area in the oral cavity for local action. The formulation may provide more patient compliance over the conventional dosage forms; it will be an easy and sustained release formulation. It will have the advantage that patient can apply it by himself or herself without anybody’s assistance to get a quick relief.

The present project will be utilizing natural polymers and synthetic polymers or combination of the polymers, for the development of the novel drug delivery system. The natural polymers will be studied & selected from Anacardiaceae, Papilionaceae, Caesalpiniaceae, Leguminosae, Moraceae, Cochlospermaceae Labiateae, Pinaceae etc. Synthetic polymers like polymethylmethacrylate, Cellulose Acetate Butyrate, Ethyl cellulose, Hydroxy propyl cellulose, Acrycoat or any suitable polymers will be considered. In addition to polymers, natural resins containing triterpinoids will be considered for the design of the formulation. The formulation will contain an antibiotic alone and/or in combination with an anti-inflammatory agent, local anaesthetic etc., to combat with either one or multiple problem/s associated with the oral cavity.

The conventional dosage forms currently available in market, for treatment of oral diseases give higher side effects. Plus the onset of action is slow. Oral mouthwashes, gels etc. have a very short residence time leading to lesser absorption of the drugs. The novel delivery system targeted, will be in the form of patches, film or tablets, which will provide mucoadhesion as well as sustained release of the medicament. Mucoadhesion will result in prolonging the residence time of drug in the oral cavity. Longer residence time ensures enhanced absorption of the medicament. As the delivery system will be confined to a small area, penetration enhancers utilized will be acting on the specified area only, the drugs absorption will also be confined to a small area and thus dose of the drug can be reduced. As the medicament is giving local action and reaches directly to systemic circulation, the side effects associated with the drug can be reduced or overcome and bioavailability of drugs which are metabolized due to first pass metabolism can be improved.