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**COLON: APPROACHES,DISEASES AND
POLYMERS-REVIEW ARTICLE**



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Abstract

In the present review, we have studied the different approaches which are made to deliver drug into the colon, without any degradation in the upper gut. We also studied the different diseases which occur into the colon and have harmful effects [Ibd, ulcerative colitis, crohn's, diverticulus, colon cancer]. These diseases causes ,symptoms and other factors are known to us. For better delivery of the drug to the colon the knowledge of the right polymer is the must so we studied different types of polymers strategies to deliver drug into the colon. From the above studies it is concluded that with the help of different approaches and the different polymers we can deliver drug to the colon easily and with better action.

Keywords: - IBD, Colon diseases, polymers ,

Introduction

The oral route is considered to be most convenient for administration of drugs to patients. Oral administration of conventional dosage forms normally dissolves in the stomach fluid or intestinal fluid and absorb from these regions of the gastrointestinal tract (GIT) depends upon the physicochemical properties of the drug. It is a serious drawback in conditions where localized delivery of the drugs in the colon is required or in conditions where a drug needs to be protected from the hostile environment of GIT.[1] Oral delivery of drugs to the colon is valuable in the treatment of diseases of colon (ulcerative colitis, Crohn's disease ,carcinomas and infections) whereby high local concentration can be achieved while minimizing side effects that occur because of release of drugs in the upper GIT or unnecessary systemic absorption. The colon is rich in lymphoid tissue, uptake of antigens into the mast cells of the colonic mucosa produces rapid local production of antibodies and this helps in efficient vaccine delivery.[2] The colon is attracting interest as a site where poorly absorbed

drug molecule may have an improved bioavailability. The colon has a longer retention time and appears highly responsive to agents that enhance the absorption of poorly absorbed drugs. The simplest method for targeting of drugs to the colon is to obtain slower release rates or longer release periods by the application of thicker layers of conventional enteric coatings or extremely slow releasing matrices.[3]

Approaches to deliver the intact molecule to the colon :-

1. Coating with polymers:-
The intact molecule can be delivered to the colon without absorbing at the upper part of the intestine by coating of the drug molecule with the suitable polymers, which degrade only in the colon.
2. Coating with pH sensitive polymers:-
The polymers used for colon targeting, however, should be able to withstand the lower pH values of the stomach and of the proximal part of the small intestine and also be able to disintegrate at the neutral or slightly alkaline pH of the terminal ileum and preferably at the ileocecal junction. These processes distribute the drug throughout the large intestine and improve the potential of colon targeted delivery systems.[4]
3. Coating with biodegradable polymers:-
Drugs that are coated with the polymers, which are showing degradability due to the influence of colonic microorganisms, can be exploited in designing drugs for colon targeting. These bacterial degradable polymers especially azo polymers have been explored in order to release an orally administered drug in the colon.

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