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Review article

A comprehensive review on gastro-retentive drug delivery system.

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Abstract

The purpose of writing this review on Gastro-retentive drug delivery systems (GRDDS) was to compile the recent literature with special focus on the principal mechanism of floatation to achieve gastric retention. The Physiological problems like short gastric residence time and unpredictable gastric emptying time were overcome with the use of floating dosage forms which provide opportunity for both local and systemic effect. Floating drug delivery system enable prolonged and continuous input of the drug to the upper part of the gastro retention tract and improve the bioavailability of medication that is characterized by a narrow absorption window. GRDDS have bulk density less than gastric fluids that have sufficient buoyancy to float over the gastric contents and remain in the stomach for longer duration of time without affecting gastric emptying rate. Various attempts have been made to develop gastro retentive delivery systems such as high density system, swelling, floating system. In floating multiple unit and single unit system are design and their classification and formulation aspect is cover in detail. Floating dosage forms can be prepared as tablets, capsule by adding suitable ingredients with excipients like hydrocolloids, inert fatty materials and buoyancy increasing agents. Various categories of drugs like antacids, antidiabetic, antifungal and anticancer drugs are formulated into FDDES. FDDES have bulk density less than gastric fluids that have sufficient buoyancy to float over the gastric contents and remain in the stomach for longer duration of time. These systems are useful to several problems encountered during the development of a pharmaceutical dosage form and the future potential of FDDES.

Keywords: Gastro-retentive drug delivery systems, Effervescent, Non-effervescent, swelling index.

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