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Pharma – 2012 :Modelling and comparison of dissolution profiles of matrix tablet -Amol M. Sabale -Tatyasaheb Kore College of Pharmacy

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Over recent years, drug release from solid pharmaceutical dosage forms has been the subject of intense and profitable scientific developments. Whenever a new solid dosage form is developed or produced, it is necessary to ensure that drug dissolution occurs in an appropriate manner. The pharmaceutical industry and the registration authorities do focus, nowadays, on drug dissolution studies. The quantitative analysis of the values obtained in dissolution / release tests is easier when mathematical formulas that express the dissolution results as a function of some of the dosage forms characteristics are used. In some cases, these mathematic models are derived from the theoretical analysis of the occurring process. In most of the cases the theoretical concept does not exist and some empirical equations have proved to be more appropriate. Drug dissolution from solid dosage forms has been described by kinetic models in which the dissolved amount of drug (Q) is a function of the test time, t or Q5 f (t). Some analytical definitions of the Q (t) function are commonly used, such as zero order, first order, Hixson–Crowell, Weibull, Higuchi, Korsmeyer–Peppas and Hopfenberg models. Other release parameters, such as dissolution time (t), dissolution efficacy (ED), difference factor (f1), similarity factor (f2) can be used to characterize drug dissolution / release profiles. Matrix tablet is a crucial tool for controlled and sustained release dosage forms. The oral route remains the foremost common route for the administration of medicine. Tablets offer rock bottom cost approach to sustained and controlled release dosage forms. The hydrophilic polymer matrix is widely utilized in this dosage form. K-TAB tablets contains a wax matrix formulated to supply a controlled rate of release K-Dur 20 and thus to attenuate the likelihood of a high local concentration of potassium near the gastrointestinal wall. Matrix delivery system. During a matrix or monolithic delivery system the drug is either molecular dissolved or dispersed inside a matrix. Matrix mechanics was the primary conceptually autonomous and logically consistent formulation of quantum physics. Its account of quantum jumps supplanted the Bohr model's electron orbits. Matrix diffusion is that the migration of dissolved solutes from flowing macropores or fractures into the more-or-less stagnant pores of adjacent rock matrix. Scoping calculations indicate that matrix diffusion model assumptions are reasonable for the low-permeability, fractured tuffs within the saturated zone beneath YM. Sustained release tablets are during a sort of dosage where a drug is run to a patient at a given or calculated rate with the aim of maintaining a particular concentration of the administered drug over a selected period of your time into the patient's system while reducing possible side effects. The tablets should be swallowed whole. Don't break, chew or crush the tablets. When the medication is swallowed, it begins working to alleviate pain in about 2 to 4 hours, although it reaches its peak effect in 15 to 30 hours. It'll still work for a couple of days. A matrix may be a collection of numbers arranged into a hard and fast number of rows and columns. Usually the numbers are real numbers. Generally, matrices can contain complex numbers but we cannot see those here. Here is an example of a matrix with three rows and three columns: the highest row is row 1. Sustained-release dosage forms are dosage forms designed to release (liberate) a drug at a predetermined rate so as to take care of a continuing drug concentration for a selected period of your time with minimum side effects. Sustained release formulations. While prolonged release tablets are meant to effect after a while from the instant they're administered and that they are known to be released in small portions over an extended period of your time with no specifications to time or rate of concentration. Sustained release tablets are more of a controlled release. Delayed-release capsules are no-nausea designed, and bypass the stomach to deliver nutrients to the tiny intestine, where they're more easily absorbed. Capsugel's DRcap™ smoothly dissolves over a 3 hour period—creating a slow, gentle release of nutrients that mimic the way your body digests food. Modified-release dosage may be a mechanism that (in contrast to immediate-release dosage) delivers a drug with a delay after its administration (delayed-release dosage) or for a protracted period of your time (extended-release [ER, XR, XL] dosage) or to a selected target within the body (targeted-release dosage). Modified release – this suggests the drugs has been modified so it's released slowly and doesn't have to be taken so often. The quantity of drugs within the body increases slowly in order that the prospect of side effects is reduced. So as to measure how long OxyContin remains within the body, it are often helpful to understand the length of the estimated detection windows by detection method. on the average , OxyContin use are often detected in urine for up to 3-4 four days, in blood up to 24 hours, in saliva 1-4 days, and during a follicle up to 90 days. None of the asthma medications prescribed by your physician must be taken exactly twelve hours apart. Twice-a-day usually means morning and evening, on arising and on getting to bed, or maybe at breakfast and supper. It's usually taken every 12 hours (twice a day) or every 8 hours (three times a day) with or without food. The foremost common error people make with their medicines is taking - or giving - a double dose. For a few medicines, an additional dose can cause problems. Forinstance, an excessive amount of vital sign medicine could cause you to light-headed. An excessive amount of ADHD medicine might make a toddler jittery.

Biography

Amol M. Sabale, doing M.Pharm (Pharmaceutics) in Tatyasaheb Kore College of Pharmacy, Warananagar, Shivaji University, Kolhapur. Qualified GPAT and entrance examination for NIPER in 2011. Presented posters in various national and international conferences.

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