Pharmaceutics: The Science of Dosage Form Design

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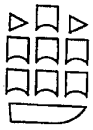

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S G Proudfoot

Factors influencing bioavailability: factors influencing drug absorption from the gastrointestinal tract

DRUG ABSORPTION FROM THE GASTROINTESTINAL TRACT

The various factors which can influence drug release from dosage forms and absorption into the systemic circulation will be considered in this chapter by reference to the peroral (i.e. gastrointestinal) route of administration. This route is chosen as the example, since the majority of drugs are administered orally and the vast majority of orally administered drugs are intended to be absorbed from the gastrointestinal tract. Thus, a detailed consideration of the factors which can influence the absorption of drugs from this region is warranted.

In order that the reader may gain an insight into the numerous factors which can potentially influence the rate and extent of appearance of intact drug into the systemic circulation, a schematic illustration of the steps involved in the release and gastrointestinal absorption of a drug from a tablet is presented in Fig. 9.1. It is evident from this diagram that the rate and extent of appearance of intact drug into the systemic circulation depends

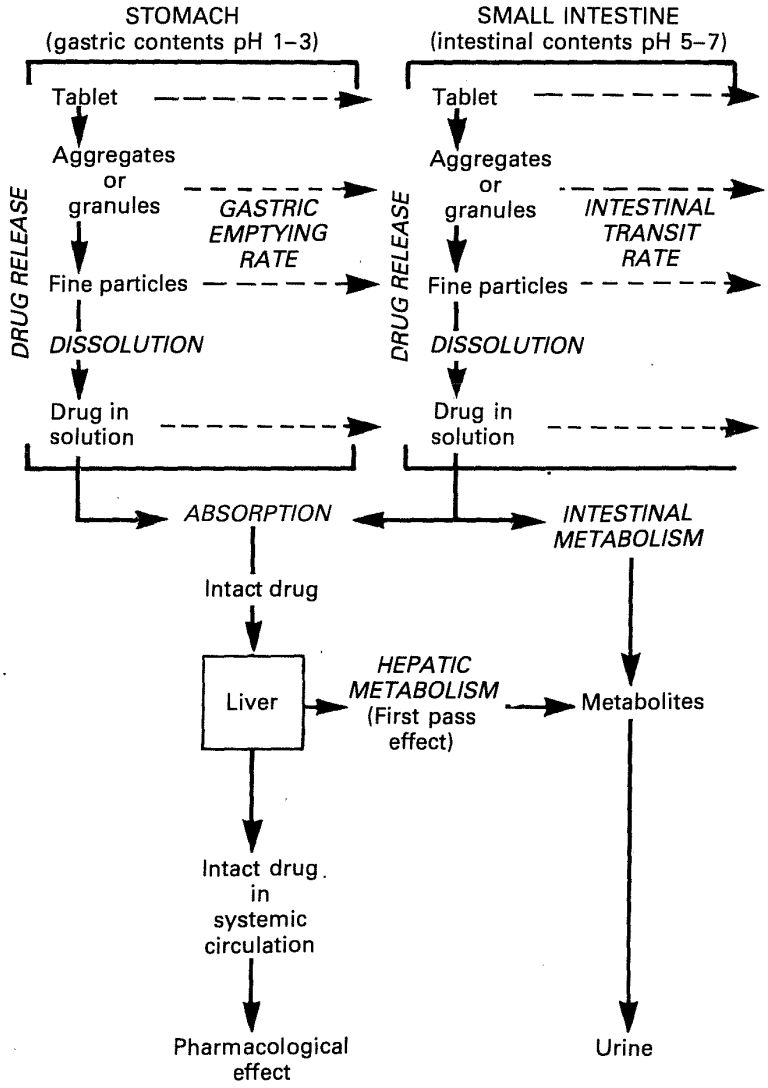

Fig. 9.1 Schematic illustration of steps involved in the appearance of intact drug in the systemic circulation following peroral administration of a tablet. Potential rate-limiting steps with respect to drug bioavailability are shown in italic capitals. (After Barr, 1972)

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