Pharmacological Basis of Acute Care
Contents

Part I  General Principles of Pharmacology and Pharmaceutics

1  Why Drugs Are Administered 3  
   Yoo Kuen Chan and Debra Si Mui Sim

2  Drug Administration 9  
   Debra Si Mui Sim

3  Drug Absorption and Bioavailability 17  
   Debra Si Mui Sim

4  Drug Distribution 27  
   Debra Si Mui Sim

5  Drug Elimination 37  
   Debra Si Mui Sim

6  Steady-State Principles 49  
   Yoo Kuen Chan and Debra Si Mui Sim

7  Dose Response Relationship 57  
   Choo Hock Tan

8  Pharmaceutical Aspects of Drugs 65  
   Pauline Siew Mei Lai

9  Dosage Forms, Drug Calculations and Prescription 73  
   Pauline Siew Mei Lai and Yoo Kuen Chan

10  Drug Interactions 81  
    Debra Si Mui Sim and Choo Hock Tan.
Chapter 9
Dosage Forms, Drug Calculations and Prescription

Pauline Siew Mei Lai and Yoo Kuen Chan

Abstract The pharmacodynamics and pharmacokinetics of a drug play an important role in how the drug is formulated, and which dosage form is suitable for use. It is also necessary to have different dosage forms to meet the different requirements of the patient. Drug formularies are a list of medicines available in an institution or country. When drugs are prescribed from a drug formulary, the drugs are very likely to be available. A clearly written prescription allows the pharmacist to dispense the drug without error. Error from this is further reduced by electronic prescribing which incorporates an inbuilt decision support strategy. Drug doses are expressed in different units and may be confusing to providers. An understanding of what these units signify is essential to enable accurate and reliable calculation of drug doses. It is also important to have a good understanding of this to know how to dilute the drugs and to be able to administer the correct dosage from these dilutions.

Keywords Dosage forms • Dose calculations • Drug prescription • Drug formularies • Electronic prescribing

Introduction

Dosage forms refer to the form the pharmaceutical product takes when it is available for use by patients. It may exist in different forms to meet the requirements needed for the peculiarities of storage conditions, its various routes of administration, and to facilitate its arrival to the site of action in a form that is still active.

P.S.M. Lai, B.Pharm., Ph.D. (©)
Department of Primary Care Medicine, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia
e-mail: plai@ummc.edu.my

Y.K. Chan, M.B.B.S., FFARCS
Department of Anesthesiology, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia

© Springer International Publishing Switzerland 2015
Y.K. Chan et al. (eds.), Pharmacological Basis of Acute Care,
DOI 10.1007/978-3-319-10386-0_9