Nursing Pharmacology: Principles, Practices, and Patient Care

Introduction

Nursing pharmacology is a specialized field of nursing that focuses on the administration, distribution, metabolism, and excretion of drugs. It also involves the study of drug interactions and adverse effects. Nurses are responsible for ensuring that patients receive the right medication at the right dose and at the right time. They also need to be able to educate patients about their medications and how to take them properly.

This book provides a comprehensive overview of nursing pharmacology. It covers all the essential topics that nurses need to know, including the basics of pharmacology, drug classifications, and

pharmacodynamics. It also discusses the nursing process and how to safely administer medications.

This book is divided into 10 chapters. Each chapter covers a different aspect of nursing pharmacology. The chapters are organized in a logical order, starting with the basics and then moving on to more advanced topics.

This book is written in a clear and concise style. It is easy to read and understand, even for those who have no prior knowledge of pharmacology. The book is also well-organized and easy to navigate. Each chapter is divided into sections and subsections, making it easy to find the information you need.

This book is an essential resource for nurses who want to learn more about pharmacology. It is also a valuable reference for nurses who are already working in the field. The book provides up-to-date information on the latest drugs and treatments, and it can help nurses stay

current with the latest developments in nursing pharmacology.

Whether you are a student nurse, a practicing nurse, or a nurse educator, this book is a must-have resource. It is the perfect way to learn about nursing pharmacology and to stay up-to-date on the latest developments in the field.

Book Description

Nursing Pharmacology: Principles, Practices, and Patient Care is a comprehensive and up-to-date resource for nurses and other healthcare professionals who administer, distribute, and monitor drug therapy. This book provides a solid foundation in the principles of pharmacology, drug classifications, and their mechanisms of action, as well as the latest information on safe medication administration, patient education, and monitoring drug therapy effectiveness.

Key Features:

- **Comprehensive Coverage:** Covers all major drug classifications, their mechanisms of action, and their clinical applications.
- **Nursing-Focused:** Provides a nursing perspective on pharmacology, including safe medication administration, patient education, and monitoring drug therapy effectiveness.

- **Up-to-Date:** Includes the latest information on new drugs and treatments, as well as emerging trends in pharmacology.
- **Easy-to-Use:** Organized in a logical and easy-to-navigate format, with chapters devoted to specific drug classifications and their clinical applications.
- **Written by Experts:** Authored by a team of experienced nurses and pharmacists, this book is a trusted resource for healthcare professionals.

Nursing Pharmacology: Principles, Practices, and Patient Care is an essential resource for nurses and other healthcare professionals who want to deliver safe and effective drug therapy to their patients. This book is also a valuable resource for students in nursing and pharmacy programs.

About the Author:

Pasquale De Marco is a registered nurse with over 10 years of experience in critical care and oncology

nursing. She is also a certified pharmacology instructor. Pasquale De Marco has a passion for teaching pharmacology to nurses and other healthcare professionals, and she is committed to providing them with the knowledge and skills they need to deliver safe and effective drug therapy to their patients.

Chapter 1: Foundations of Pharmacology

Basic Concepts of Pharmacology

Pharmacology is the study of drugs and their effects on living organisms. It is a vast and complex field that encompasses many different areas of study, including the following:

- **Pharmacokinetics:** This is the study of how drugs are absorbed, distributed, metabolized, and excreted from the body.
- **Pharmacodynamics:** This is the study of how drugs interact with receptors and other molecules in the body to produce their effects.
- **Clinical pharmacology:** This is the study of how drugs are used to treat diseases and improve patient outcomes.

Pharmacology is a vital field of study for nurses because it provides them with the knowledge they need to safely and effectively administer medications to patients. Nurses must be able to understand the following:

- The different types of drugs and their effects
- The proper dosage and administration of drugs
- The potential side effects of drugs
- The drug interactions that can occur

Nurses also play a vital role in patient education. They must be able to teach patients about the medications they are taking, including the following:

- The name of the drug
- The purpose of the drug
- The dosage and administration of the drug
- The potential side effects of the drug
- The drug interactions that can occur

Pharmacology is a challenging but rewarding field of study. Nurses who are knowledgeable about pharmacology can provide safe and effective care to their patients.

The History of Pharmacology

The history of pharmacology can be traced back to ancient times. The earliest known drugs were plant extracts and animal products that were used to treat various illnesses. In the 16th and 17th centuries, European scientists began to develop new drugs based on their understanding of the human body. In the 19th century, the development of synthetic drugs led to a major expansion in the field of pharmacology.

In the 20th century, pharmacology became a recognized medical specialty. Nurses began to play a more significant role in pharmacology as they were increasingly responsible for administering medications to patients. Today, pharmacology is a vital part of nursing education and practice.

The Importance of Pharmacology in Nursing

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Chapter 1: Foundations of Pharmacology

Drug Administration and Absorption

Drug administration is the process of introducing a drug into the body. It can be done through various routes, including oral, sublingual, buccal, transdermal, topical, inhalational, parenteral, and rectal. Each route has its own advantages and disadvantages, and the choice of route depends on factors such as the drug's properties, the desired effect, and the patient's condition.

Oral administration is the most common route of drug administration. It is simple, convenient, and cost-effective. However, some drugs are not absorbed well from the gastrointestinal tract, and others may be destroyed by stomach acid.

Sublingual and buccal administration involves placing the drug under the tongue or between the cheek and

the gum. This allows the drug to be absorbed directly into the bloodstream, bypassing the gastrointestinal tract. This route is often used for drugs that are rapidly absorbed and have a short half-life.

Transdermal administration involves applying the drug to the skin. The drug is absorbed through the skin and into the bloodstream. This route is often used for drugs that need to be delivered continuously over a long period of time.

Topical administration involves applying the drug to the skin or mucous membranes. This route is often used for drugs that are intended to have a local effect, such as pain relievers or antihistamines.

Inhalational administration involves breathing in the drug in the form of a gas, vapor, or aerosol. This route is often used for drugs that are intended to have a rapid effect, such as bronchodilators or anesthetics.

Parenteral administration involves injecting the drug into the body. This can be done intravenously (IV), intramuscularly (IM), subcutaneously (SC), or intradermally (ID). Parenteral administration is often used for drugs that need to be delivered quickly or accurately, or for drugs that are not absorbed well from the gastrointestinal tract.

Rectal administration involves inserting the drug into the rectum. This route is often used for drugs that are intended to have a local effect, such as suppositories or enemas.

Drug absorption is the process by which a drug enters the bloodstream. The rate and extent of drug absorption depends on a number of factors, including the drug's properties, the route of administration, and the patient's condition.

Drugs that are absorbed quickly have a rapid onset of action. Drugs that are absorbed slowly have a slower onset of action. The route of administration also affects

the rate and extent of drug absorption. Drugs that are administered orally are absorbed more slowly than drugs that are administered parenterally. The patient's condition can also affect drug absorption. For example, patients with gastrointestinal disorders may have difficulty absorbing drugs that are taken orally.

Chapter 1: Foundations of Pharmacology

Drug Distribution and Metabolism

Drug distribution is the process by which a drug moves from the site of administration to its site of action. This process is influenced by several factors, including the drug's physical and chemical properties, the route of administration, and the patient's physiological factors.

Once a drug is administered, it enters the bloodstream and is distributed throughout the body. The drug's distribution is determined by its solubility, ionization, and protein binding. Soluble drugs are more easily distributed to tissues than insoluble drugs. Ionized drugs are less easily distributed to tissues than non-ionized drugs. Protein-bound drugs are less easily distributed to tissues than unbound drugs.

The route of administration also affects the drug's distribution. Drugs that are administered orally are

absorbed into the bloodstream through the gastrointestinal tract. Drugs that are administered intravenously are directly injected into the bloodstream. Drugs that are administered topically are applied to the skin or mucous membranes. The route of administration determines how quickly the drug reaches its site of action.

The patient's physiological factors also affect the drug's distribution. These factors include age, weight, gender, and organ function. Age can affect the drug's distribution because the body composition of older adults is different from that of younger adults. Weight can affect the drug's distribution because the drug's volume of distribution is proportional to the patient's weight. Gender can affect the drug's distribution because of differences in body composition between men and women. Organ function can affect the drug's distribution because the drug may be metabolized or excreted by the organs.

Drug metabolism is the process by which a drug is chemically changed in the body. This process is carried out by enzymes in the liver and other organs. Drug metabolism converts drugs into more water-soluble forms, which are more easily excreted from the body.

The rate of drug metabolism is influenced by several factors, including the drug's chemical structure, the patient's age, weight, and gender, and the presence of other drugs. The drug's chemical structure determines how easily it is metabolized by the enzymes in the liver. The patient's age, weight, and gender can affect the rate of drug metabolism because these factors affect the activity of the enzymes in the liver. The presence of other drugs can also affect the rate of drug metabolism because drugs can compete with each other for the same enzymes in the liver.

Drug distribution and metabolism are important processes that affect the concentration of a drug in the body. These processes are influenced by several

factors, including the drug's physical and chemical properties, the route of administration, the patient's physiological factors, and the presence of other drugs.

This extract presents the opening three sections of the first chapter.

Discover the complete 10 chapters and 50 sections by purchasing the book, now available in various formats.

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