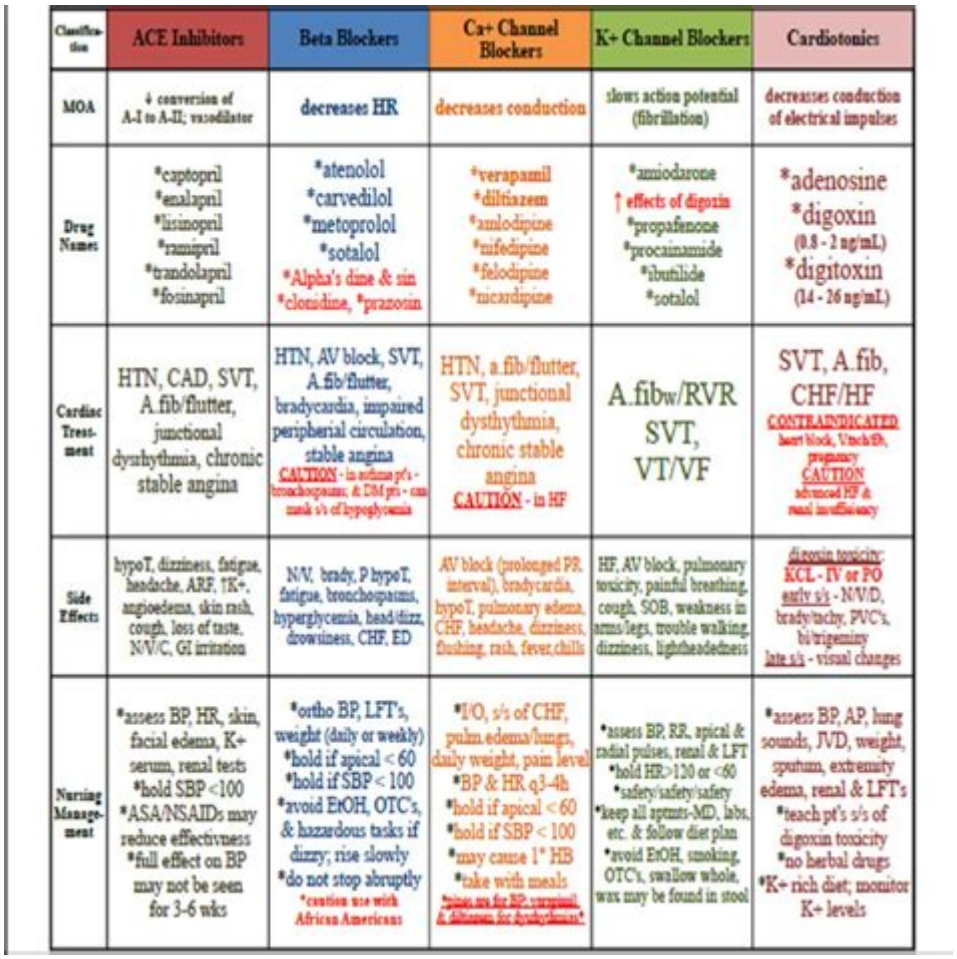
Study Guide For Pharmacology Classifications Nursing



Classification	ACE Inhibitors	Beta Blockers	Ca+ Channel Blockers	K+ Channel Blockers	Cardiotonics
MOA	↓ conversion of A-I to A-II; vasodilator	decreases HR	decreases conduction	slows action potential (fibrillation)	decreases conduction of electrical impulses
Drug Names	*captopril *enalapril *lisinopril *ramipril *trandolapril *fosinapril	*atenolol *carvedilol *metoprolol *sotalol *Alpha's dine & sin *clonidine, *prazosin	*verapamil *diltiazem *amlodipine *nifedipine *felodipine *nicardipine	*amiodarone ↑ effects of digoxin *propafenone *procainamide *ibutilide *sotalol	*adenosine *digoxin (0.8 - 2 ng/mL) *digitoxin (14 - 26 ng/mL)
Cardiac Treatment	HTN, CAD, SVT, A.fib/flutter, junctional dysrhythmia, chronic stable angina	HTN, AV block, SVT, A.fib/flutter, bradycardia, impaired peripherial circulation, stable angina CAUTION - in asthma pt's - bronchospasms; & DM pts - can mask s/s of hypoglycemia	HTN, a.fib/flutter, SVT, junctional dysthythmia, chronic stable angina CAUTION - in HF	A.fibw/RVR SVT, VT/VF	SVT, A.fib, CHF/HF CONTRAINDICATED heart block, V tach/fib, pregnancy CAUTION advanced HF & renal insufficiency
Side Effects	hypoT, dizziness, fatigue, headache, ARF, ↑K+, angioedema, skin rash, cough, loss of taste, N/V/C, GI irritation	N/V, bradyc, P hypoT, fatigue, bronchospasms, hyperglycemia, head/dizz, drowsiness, CHF, ED	AV block (prolonged PR interval), bradycardia, hypoT, pulmonary edema, CHF, headache, dizziness, flushing, rash, fever,chills	HF, AV block, pulmonary toxicity, painful breathing, cough, SOB, weakness in arms/legs, trouble walking, dizziness, lightheadedness	digoxin toxicity: KCL - IV or PO early s/s - N/V/D, brady/tachy, PVC's, bi/trigeminy late s/s - visual changes
Nursing Management	*assess BP, HR, skin, facial edema, K+ serum, renal tests *hold SBP <100 *ASA/NSAIDs may reduce effectivness *full effect on BP may not be seen for 3-6 wks	*ortho BP, LFT's, weight (daily or weekly) *hold if apical < 60 *hold if SBP < 100 *avoid EtOH, OTC's, & hazardous tasks if dizzy; rise slowly *do not stop abruptly *caution use with African Americans	*I/O, s/s of CHF, pulm.edema/lungs, daily weight, pain level *BP & HR q3-4h *hold if apical < 60 *hold if SBP < 100 *may cause 1° HB *take with meals *same as for BP: verapamil & diltiazem for dysrhythmias*	*assess BP, RR, apical & radial pulses, renal & LFT *hold HR>120 or <60 *safety/safety/safety *keep all apptmts-MD, labs, etc. & follow diet plan *avoid EtOH, smoking, OTC's, swallow whole, wax may be found in stool	*assess BP, AP, lung sounds, JVD, weight, sputum, extremity edema, renal & LFT's *teach pt's s/s of digoxin toxicity *no herbal drugs *K+ rich diet; monitor K+ levels

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Pharmacology is a critical aspect of nursing education, providing essential knowledge for safe and effective medication administration. Understanding pharmacological classifications is vital for nurses, as it forms the foundation for clinical decision-making and patient care. This study guide aims to outline the key pharmacological classifications relevant to nursing, providing an overview of drug categories, their mechanisms of action, indications, side effects, and nursing considerations.

Understanding Pharmacological Classifications

Pharmacological classifications refer to the systematic categorization of drugs based on their chemical structure, mechanism of action, therapeutic use, or pharmacological effects. Familiarity with these classifications allows nurses to predict how drugs will behave in the body, recognize potential interactions, and educate patients effectively.

Major Drug Classifications

The following are some of the major drug classifications commonly encountered in nursing practice:

1. Analgesics: Medications used to relieve pain.
- Types:
- Non-opioid analgesics (e.g., acetaminophen, NSAIDs)
- Opioid analgesics (e.g., morphine, oxycodone)
- Nursing Considerations: Monitor pain levels, assess for side effects like respiratory depression in opioids, and educate patients on safe use.

2. Antibiotics: Drugs used to treat bacterial infections.
- Types:
- Penicillins (e.g., amoxicillin)
- Cephalosporins (e.g., cefalexin)
- Macrolides (e.g., azithromycin)
- Nursing Considerations: Assess for allergies, monitor for effectiveness, and educate on the importance of completing the prescribed course.

3. Antidepressants: Medications used to treat various mood disorders.
- Types:
- SSRIs (e.g., sertraline, fluoxetine)
- SNRIs (e.g., venlafaxine)
- Tricyclics (e.g., amitriptyline)
- Nursing Considerations: Monitor for side effects such as weight gain or sexual dysfunction, and assess for suicidal thoughts, especially during the initial treatment phase.

4. Antihypertensives: Drugs that manage high blood pressure.
- Types:
- Diuretics (e.g., furosemide)
- ACE inhibitors (e.g., lisinopril)
- Beta-blockers (e.g., metoprolol)
- Nursing Considerations: Monitor blood pressure, educate patients on lifestyle modifications, and assess for orthostatic hypotension.

5. Antidiabetics: Medications used to manage diabetes mellitus.
- Types:
- Insulin (e.g., glargine, regular insulin)
- Oral hypoglycemics (e.g., metformin, sulfonylureas)
- Nursing Considerations: Monitor blood glucose levels, educate on administration techniques, and recognize signs of hypo- or hyperglycemia.

Pharmacokinetics and Pharmacodynamics

Understanding how drugs work within the body is essential for nursing practice. This involves two key concepts: pharmacokinetics and pharmacodynamics.

Pharmacokinetics

Pharmacokinetics refers to the process by which the body absorbs, distributes, metabolizes, and excretes drugs. The four main phases are:

1. Absorption: The process of drug entering the bloodstream. Factors affecting absorption include the route of administration (oral, intravenous, etc.), drug formulation, and patient's gastrointestinal status.

2. Distribution: The dispersion of drugs throughout the body's fluids and tissues. Factors such as blood flow, protein binding, and tissue permeability can influence drug distribution.

3. Metabolism: The chemical alteration of drugs in the body, primarily occurring in the liver. This process can affect the drug's efficacy and safety.

4. Excretion: The elimination of drugs from the body, primarily through the kidneys. Renal function is a crucial consideration in determining drug dosing.

Pharmacodynamics

Pharmacodynamics involves the study of the effects of drugs on the body and the mechanisms of their action. Key concepts include:

- Mechanism of Action: How a drug produces its effects, often by interacting with specific receptors or enzymes.
- Therapeutic Effects: The desired effects of a drug.
- Adverse Effects: Undesired or harmful effects that may occur with drug administration.

Nursing Responsibilities in Pharmacology

Nurses play a crucial role in medication management and patient safety. Key responsibilities include:

1. Medication Administration: Ensuring the correct administration of medications, adhering to the "Five Rights" (right patient, right drug, right dose, right route, right time).

2. Patient Education: Teaching patients about their medications, including potential side effects, proper usage, and the importance of adherence to therapy.

3. Monitoring: Assessing patients for therapeutic effects and adverse reactions. This includes regularly checking vital signs, laboratory values, and overall patient response.

4. Documentation: Accurately documenting medication administration and any patient responses or changes in condition.

5. Collaboration: Working with the healthcare team to evaluate medication regimens and make

necessary adjustments based on patient needs.

Common Drug Interactions

Understanding drug interactions is essential for preventing adverse effects and ensuring effective therapy. Interactions can occur due to:

1. Pharmacokinetic Interactions: One drug affects the absorption, distribution, metabolism, or excretion of another drug. For example:
- Antacids can reduce the absorption of certain antibiotics.

2. Pharmacodynamic Interactions: Two drugs have additive or antagonistic effects. For example:
- Combining two central nervous system depressants can increase sedation.

3. Food and Drug Interactions: Certain foods can affect drug metabolism. For example:
- Grapefruit juice can inhibit the metabolism of various medications, leading to increased effects or toxicity.

Conclusion

A solid understanding of pharmacology classifications is indispensable for nursing practice. This study guide has provided an overview of major drug classes, pharmacokinetics, pharmacodynamics, nursing responsibilities, and drug interactions. By integrating this knowledge into everyday practice, nurses can enhance patient care, ensuring safe and effective medication management. Continuous education and staying updated with the latest pharmacological advancements will further empower nurses to excel in their roles and positively impact patient outcomes.

Frequently Asked Questions

What are the key pharmacology classifications nurses should be familiar with?

Nurses should be familiar with classifications such as analgesics, antibiotics, antihypertensives, anticoagulants, antidiabetics, and antidepressants, among others.

How can a study guide help nursing students understand pharmacology classifications?

A study guide can simplify complex information, provide mnemonic devices, summarize drug categories, and offer practice questions to reinforce learning.

What role do pharmacokinetics and pharmacodynamics play in pharmacology classifications?

Pharmacokinetics deals with how the body processes drugs, while pharmacodynamics focuses on how drugs affect the body, both of which are crucial for understanding drug classifications.

What is the importance of knowing side effects in pharmacology classifications for nurses?

Understanding side effects is vital for patient safety, monitoring for adverse reactions, and educating patients about potential risks associated with their medications.

How can flashcards be used effectively in studying pharmacology classifications?

Flashcards can help reinforce memory by allowing students to test their recall of drug classifications, uses, and side effects in a quick and engaging format.

What are some effective strategies for memorizing drug classifications?

Effective strategies include grouping drugs by classification, using mnemonic devices, creating visual aids, and regularly reviewing material through practice quizzes.

Why is it important for nurses to stay updated on changes in pharmacology classifications?

Staying updated is crucial due to the ongoing development of new medications, changes in clinical guidelines, and emerging drug interactions that can affect patient care.

How does understanding pharmacology classifications enhance patient education?

A solid understanding allows nurses to provide accurate information about medications, explain therapeutic effects, potential side effects, and address patient concerns effectively.

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□□□□ Ao Wang□Quanming Liu □□□□□□□□□□□□□ ...

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