Cardiovascular Pharmacology: Essential Medications for Nursing

Welcome to this comprehensive guide on cardiovascular medications. This presentation covers ten critical drug classifications that every nursing student must master, including their mechanisms of action, nursing considerations, patient teaching points, and important drug interactions.

Each card includes helpful mnemonics to aid your memory and practical nursing applications to enhance your clinical practice. Let's explore these life-saving medications that form the cornerstone of cardiovascular care.

by Miranda Ekenjock

ACE Inhibitors: The Pressure Reducers

Classification & Examples

ACE Inhibitors like Lisinopril are indicated for hypertension, heart failure, and post-MI care. Remember: **"ACE Lowers BP"** (Angiotensin-Converting Enzyme)

Mode of Action

Blocks angiotensin I to angiotensin II conversion, leading to vasodilation and decreased blood pressure.

Nursing Considerations

Monitor BP, renal function, and potassium levels. Watch for persistent cough. Teach patients to avoid potassium supplements and report persistent cough or swelling.

Key interaction warning: Hyperkalemia risk increases when combined with potassium-sparing diuretics and NSAIDs. Always check medication lists thoroughly.

Beta-Blockers: Controlling the Beat

Classification

Beta-Blockers like Metoprolol - **"Beta Blocks the Beat"**

Mode of Action

Blocks beta receptors, decreasing heart rate and contractility

Indications

Hypertension, heart failure, angina, arrhythmias

Nursing Care

Monitor HR, BP, and assess for bradycardia

Patient teaching is crucial: emphasize that beta-blockers should never be stopped abruptly as this can trigger rebound hypertension or tachycardia. Instruct patients to report dizziness or shortness of breath immediately.

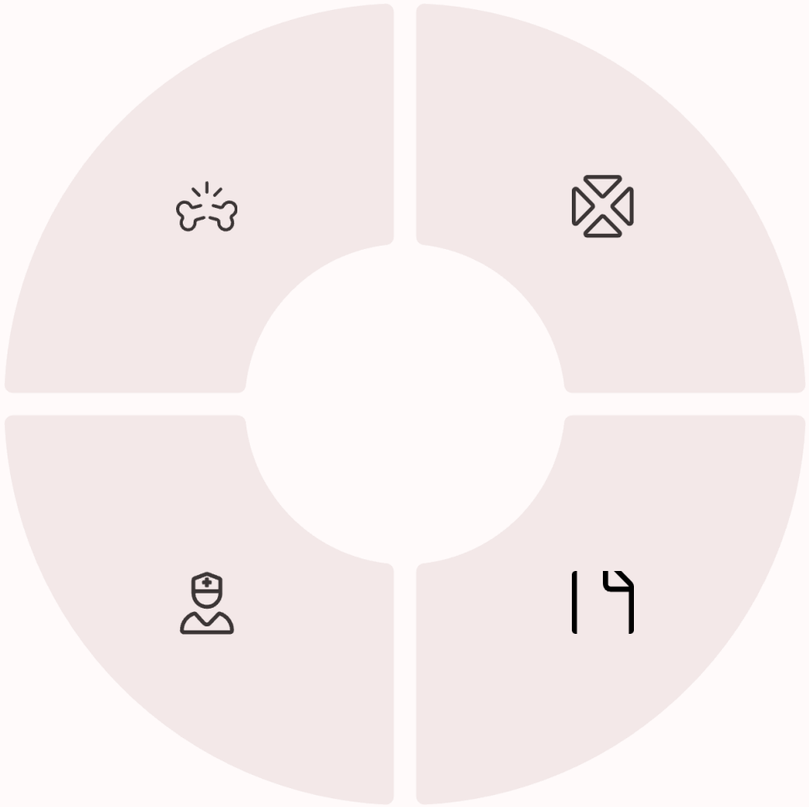
Important interaction: May interact with calcium channel blockers, potentially causing dangerous bradycardia.

Calcium Channel Blockers: Calming the Vessels

Classification

Calcium Channel Blockers like Amlodipine

"Calm Muscles, Calm Heart"



Indications

Hypertension, angina, arrhythmias

Nursing Care

Monitor BP and pulse, assess for peripheral edema

Mode of Action

Inhibits calcium influx into smooth muscle, relaxing blood vessels

Patient teaching should emphasize avoiding grapefruit juice which can increase drug concentration. Patients should report any swelling or palpitations promptly. These medications enhance the effects of beta-blockers, potentially causing dangerous bradycardia.

Loop Diuretics: The Fluid Managers

1

Classification & Example

Loop Diuretics like Furosemide - **"Loops Lose Liquid"**

2

Mode of Action

Inhibits sodium reabsorption in the Loop of Henle, promoting diuresis

3

Nursing Care

Monitor potassium levels, blood pressure, and urine output

4

Patient Teaching

Increase potassium-rich foods; report dehydration or muscle cramps

Critical interaction warning: Loop diuretics can cause hypokalemia when combined with digoxin or corticosteroids, potentially leading to dangerous cardiac arrhythmias. Regular electrolyte monitoring is essential.

ARBs: The Angiotensin Blockers

Classification & Example

Angiotensin II Receptor Blockers like Losartan. Remember: "ARBs Avoid Angiotensin"

Mode of Action

Blocks angiotensin II receptors, reducing vasoconstriction and lowering blood pressure

Nursing Care

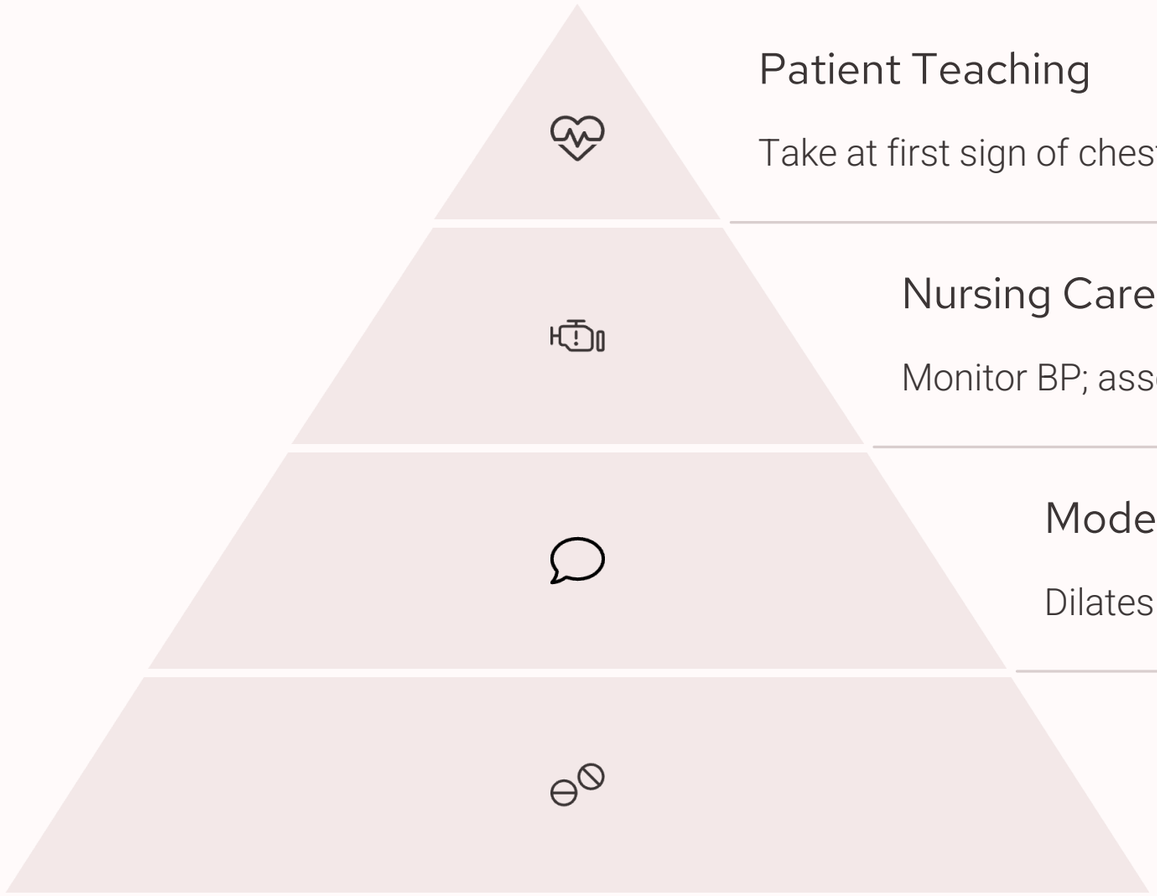
Monitor blood pressure and kidney function regularly; assess for signs of hyperkalemia

Patient Teaching

Avoid potassium-rich foods and supplements; report dizziness or unusual swelling

Important interaction: ARBs carry a significant risk of hyperkalemia when combined with potassium supplements or potassium-sparing diuretics. Careful monitoring is essential.

Nitrates: Quick Relief for Angina



Patient Teaching

Take at first sign of chest pain; avoid ED medications

Nursing Care

Monitor BP; assess for headache and hypotension

Mode of Action

Dilates blood vessels, decreasing heart workload

Classification

Nitrates like Nitroglycerin - "Nitro Nixes Chest Pain"

Nitrates are primarily indicated for angina and heart failure. The most critical interaction to remember is the potentially fatal hypotension that can occur when nitrates are combined with erectile dysfunction medications like sildenafil (Viagra).

Anticoagulants: The Clot Preventers

Classification

Anticoagulants like Warfarin - **"War on Clots"**

Mode of Action

Inhibits vitamin K-dependent clotting factors

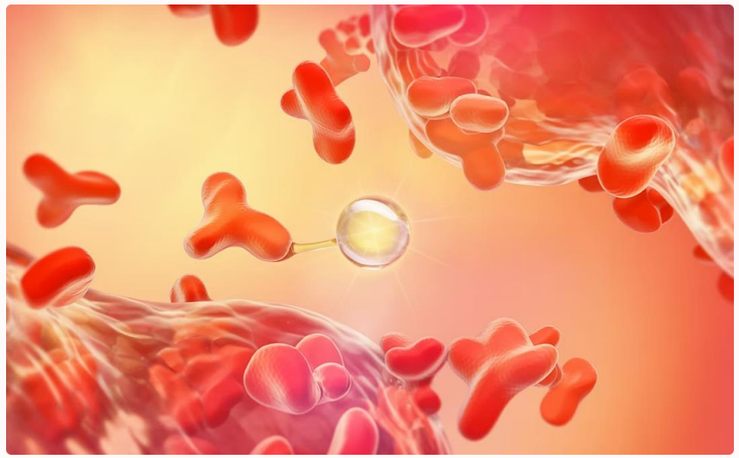
Nursing Care

Monitor INR and assess for bleeding

Patient teaching for anticoagulants is critical: emphasize consistent intake of vitamin K-containing foods (not avoidance) to maintain stable INR levels. Patients must report any signs of bleeding immediately, including dark stools, unusual bruising, or prolonged bleeding from cuts.

Dangerous interactions occur with NSAIDs and other anticoagulants, significantly increasing bleeding risk. Careful medication reconciliation is essential.

Antiplatelets: Preventing Platelet Aggregation

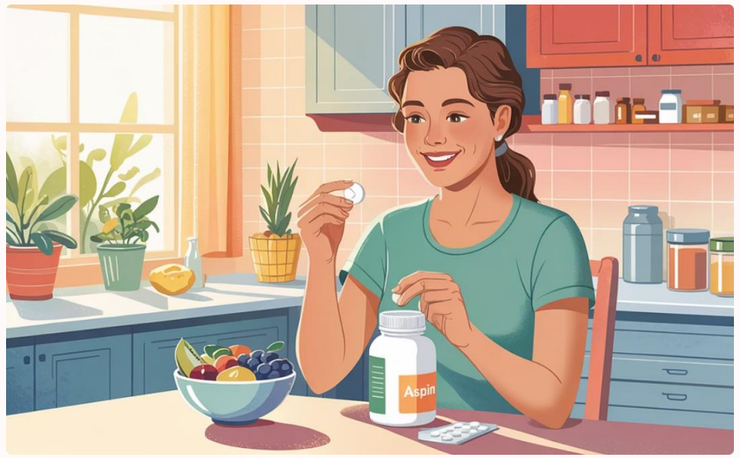


Mode of Action

Antiplatelets like Aspirin inhibit platelet aggregation, reducing clot formation risk. "Aspirin Assists Platelet Prevention"

Nursing Care

Monitor for GI bleeding and toxicity signs like tinnitus. Assess for bruising and prolonged bleeding from minor cuts.



Patient Teaching

Take with food to reduce GI irritation. Avoid alcohol to minimize gastrointestinal issues and bleeding risk.

Antiplatelets are primarily indicated for stroke and myocardial infarction prevention. Critical interaction warning: Increased bleeding risk when combined with NSAIDs and anticoagulants.

Statins & Thrombolytics: Cholesterol Control & Clot Busters

Statins

"Statins Save Cholesterol"

Examples: Atorvastatin for hyperlipidemia

Mode of Action: Inhibits cholesterol synthesis in the liver

Nursing Care: Monitor liver enzymes and cholesterol levels

Patient Teaching: Report muscle pain and avoid grapefruit juice

Interactions: Increased myopathy risk with fibrates and niacin

Thrombolytics

"Thrombolytics Target Thrombi"

Examples: Alteplase for acute MI and stroke

Mode of Action: Converts plasminogen to plasmin, dissolving clots

Nursing Care: Monitor for bleeding and ensure administration within the time window

Patient Teaching: Report any bleeding (e.g., dark stools)

Interactions: Increased bleeding risk with anticoagulants