Professional Certificate in Vascular Care

Pharmacology in Vascular Care

A

Acetylcholine: A neurotransmitter that plays a crucial role in the transmission of nerve impulses in the parasympathetic nervous system. It acts on both muscarinic and nicotinic receptors, leading to various physiological effects in the body.

Angiotensin-Converting Enzyme (ACE) Inhibitors: Medications that inhibit the activity of angiotensin-converting enzyme, which converts angiotensin I to angiotensin II. By blocking this enzyme, ACE inhibitors help dilate blood vessels, reduce blood pressure, and improve cardiac function.

Arterial Stenosis: Narrowing of an artery due to the buildup of plaque or other obstructions, leading to reduced blood flow to tissues supplied by the affected artery. Arterial stenosis can result in symptoms such as pain, numbness, or weakness in the affected limb.

Arterial Thrombosis: Formation of a blood clot within an artery, obstructing blood flow to tissues downstream. Arterial thrombosis can lead to ischemia, tissue damage, and potentially life-threatening complications such as stroke or myocardial infarction.

B

Blood Pressure: The force exerted by circulating blood against the walls of blood vessels. Blood pressure is typically measured in millimeters of mercury (mmHg) and consists of two values: systolic pressure (during heart contraction) and diastolic pressure (during heart relaxation).

Bypass Graft: A surgical procedure in which a healthy blood vessel is used to create a detour around a blocked or narrowed artery, restoring blood flow to the affected area. Bypass grafts are commonly performed in patients with severe arterial disease.

C

Calcium Channel Blockers: Medications that inhibit the influx of calcium ions into smooth muscle cells, leading to vasodilation and reduced cardiac contractility. Calcium channel blockers are used to treat conditions such as hypertension, angina, and arrhythmias.

Carotid Artery Disease: A condition characterized by the buildup of plaque in the carotid arteries, which supply blood to the brain. Carotid artery disease increases the risk of stroke due to the potential for plaque rupture and embolization.

Cholesterol: A type of lipid that plays a vital role in cell membrane structure and hormone synthesis. High levels of cholesterol in the blood can lead to the formation of plaque in arteries, increasing the risk of atherosclerosis and cardiovascular disease.

Coronary Artery Disease (CAD): A condition in which the coronary arteries that supply blood to the heart muscle become narrowed or blocked due to the buildup of plaque. CAD can lead to angina, myocardial infarction, and other serious cardiac complications.

D

Deep Vein Thrombosis (DVT): Formation of a blood clot in a deep vein, typically in the lower extremities. DVT can cause pain, swelling, and redness in the affected limb and may lead to serious complications such as pulmonary embolism if the clot dislodges and travels to the lungs.

E

Endovascular Therapy: Minimally invasive procedures performed inside blood vessels using catheters, balloons, stents, or other devices to treat vascular conditions. Endovascular therapy offers advantages such as faster recovery, reduced complications, and shorter hospital stays compared to traditional surgery.

Endothelium: The inner lining of blood vessels composed of endothelial cells that regulate vascular tone, permeability, and inflammation. The endothelium plays a crucial role in maintaining vascular health and homeostasis.

Essential Hypertension: High blood pressure with no identifiable cause, often attributed to genetic, environmental, or lifestyle factors. Essential hypertension is a common condition that can increase the risk of cardiovascular disease if left untreated.

F

Femoral Artery: A major artery in the thigh that supplies blood to the lower extremities. The femoral artery is a common access site for endovascular procedures such as angiography, angioplasty, and stent placement.

G

Graded Compression Stockings: Elastic garments worn on the legs to apply graduated pressure from the ankle to the thigh, promoting venous return and reducing edema. Graded compression stockings are used to prevent deep vein thrombosis, relieve symptoms of chronic venous insufficiency, and support healing after vascular procedures.

H

Heart Failure: A condition in which the heart is unable to pump an adequate amount of blood to meet the body's needs. Heart failure can result from various causes, including coronary artery disease, hypertension, and valvular heart disease.

Heparin: An anticoagulant medication that inhibits the activity of clotting factors in the blood, preventing the formation of blood clots. Heparin is commonly used to prevent and treat conditions such as deep vein thrombosis, pulmonary embolism, and thrombosis during vascular procedures.

Hypertension: Persistent elevation of blood pressure above normal levels, typically defined as systolic pressure ≥140 mmHg and diastolic pressure ≥90 mmHg. Hypertension is a major risk factor for cardiovascular disease, stroke, and kidney disease.

I

Ischemia: Inadequate blood supply to tissues, leading to oxygen and nutrient deprivation. Ischemia can result from arterial stenosis, arterial thrombosis, or other vascular conditions and may cause tissue damage or organ dysfunction if not promptly treated.

J

Jugular Vein: A major vein in the neck that drains blood from the head and neck and returns it to the heart. The jugular vein is commonly used for central venous access in critically ill patients and for monitoring central venous pressure.

K

Kidney Disease: Impaired kidney function that can result from various causes, including diabetes, hypertension, and vascular disease. Kidney disease affects the body's ability to filter waste products from the blood and maintain fluid and electrolyte balance.

L

Lipid-Lowering Medications: Drugs that help reduce cholesterol levels in the blood, lowering the risk of atherosclerosis and cardiovascular disease. Lipid-lowering medications include statins, fibrates, bile acid sequestrants, and PCSK9 inhibitors.

M

Myocardial Infarction: A sudden blockage of blood flow to the heart muscle, leading to tissue damage and cell death. Myocardial infarction, commonly known as a heart attack, can result from coronary artery disease, arterial thrombosis, or other cardiac conditions.

N

Nitroglycerin: A vasodilator medication that relaxes smooth muscle in blood vessels, leading to increased blood flow and reduced cardiac workload. Nitroglycerin is used to relieve angina symptoms, manage heart failure, and treat acute coronary syndromes.

O

Orthostatic Hypotension: A sudden drop in blood pressure upon standing up from a sitting or lying position, leading to symptoms such as dizziness, lightheadedness, or fainting. Orthostatic hypotension can result from dehydration, medications, or autonomic nervous system dysfunction.

P

Peripheral Artery Disease (PAD): A condition in which narrowed or blocked arteries reduce blood flow to the extremities, typically the legs. PAD can cause symptoms such as leg pain, numbness, and non-healing wounds and increases the risk of limb ischemia and amputation.

Pharmacology: The study of drugs and their effects on the body, including their mechanisms of action, pharmacokinetics, pharmacodynamics, and therapeutic uses. Pharmacology in vascular care focuses on medications used to manage vascular conditions such as hypertension, atherosclerosis, and thrombosis.

Platelet Aggregation Inhibitors: Medications that inhibit the aggregation of platelets, preventing the formation of blood clots. Platelet aggregation inhibitors, such as aspirin and clopidogrel, are used to reduce the risk of thrombosis in patients with cardiovascular disease.

Q

Quinidine: An antiarrhythmic medication that helps stabilize the heart's electrical activity and prevent abnormal heart rhythms. Quinidine is used to treat atrial fibrillation, ventricular tachycardia, and other cardiac arrhythmias.

R

Renal Artery Stenosis: Narrowing of the renal arteries that supply blood to the kidneys, leading to reduced kidney function and hypertension. Renal artery stenosis can result from atherosclerosis, fibromuscular dysplasia, or other vascular conditions.

S

Stent: A small metal or plastic tube inserted into a narrowed or blocked artery to keep it open and restore blood flow. Stents are commonly used in the treatment of coronary artery disease, peripheral artery disease, and venous stenosis.

Thrombolysis: The administration of medications known as thrombolytics to dissolve blood clots and restore blood flow in occluded vessels. Thrombolysis is used to treat conditions such as acute myocardial infarction, ischemic stroke, and pulmonary embolism.

U

Ulcer: A non-healing wound or sore on the skin or mucous membrane, typically caused by poor circulation, pressure, or infection. Ulcers are common complications of peripheral artery disease, venous insufficiency, and diabetic neuropathy.

V

Vasodilators: Medications that relax smooth muscle in blood vessels, leading to vasodilation and increased blood flow. Vasodilators are used to treat conditions such as hypertension, angina, heart failure, and peripheral artery disease.

Venous Thrombosis: Formation of a blood clot in a vein, typically in the deep veins of the legs. Venous

thrombosis can cause pain, swelling, and discoloration in the affected limb and may lead to serious complications such as pulmonary embolism.

W

Warfarin: An anticoagulant medication that inhibits the synthesis of clotting factors in the liver, preventing the formation of blood clots. Warfarin is commonly used to prevent stroke in patients with atrial fibrillation, treat venous thromboembolism, and manage thrombosis in patients with mechanical heart valves.

X

Xanthomas: Yellowish cholesterol deposits that accumulate under the skin, typically around the eyelids, joints, or tendons. Xanthomas are a sign of dyslipidemia and increased cardiovascular risk due to high cholesterol levels in the blood.

Y

Yohimbine: An alkaloid medication derived from the bark of the yohimbe tree, used to treat erectile dysfunction and orthostatic hypotension. Yohimbine acts as an alpha-2 adrenergic antagonist, leading to vasodilation and increased blood flow in certain tissues.

Z

Zinc: An essential mineral that plays a role in wound healing, immune function, and DNA synthesis. Zinc deficiency can impair vascular health and increase the risk of cardiovascular disease, diabetes, and other chronic conditions.