CORONARY ARTERY DISEASE (CAD)

Coronary artery disease is the most common type of heart disease. It is the leading cause of death in the US. This occurs when the heart does not get enough oxygen rich blood flow. The blood vessels that supply the heart become stiff and narrow. Cholesterol and other materials called plaque, clog blood vessels. When the heart does not get enough blood, it can lead to chest pain or a heart attack.

Causes

Risk factors for coronary artery disease are:

- Family history of heart disease in family especially if <55 years old in your father or brother and <65 years old in your mother or sister
- Age – risk of heart disease goes up as you get older especially in men aged 45 and older and women aged 55 and older
- Smoking
- Diabetes
- High blood pressure
- High cholesterol
- Uncontrolled stress

Symptoms

- Chest pain at rest or with activity
- Pain can spread to shoulder, arm, back, neck, or jaw
- Difficulty breathing
- Fatigue
- Heartburn, nausea
- Lightheadedness or sudden dizziness

Diagnosis

Doctors use different tests to help determine risks for heart disease including blood tests called hgba1c (average blood sugar over the last 3 months) and cholesterol panel. Seeking medical attention if you have symptoms is vital to the diagnosis of coronary artery disease.

A variety of tests are used to diagnose CAD including:

- Blood tests called cardiac enzymes i.e. troponin, CK-MB are used to see if heart muscle is being injured
- EKG, electrocardiogram, is a tracing of the heart's electrical activity that can show signs portion of the heart not getting adequate blood flow
- Cardiac catheterization – A thin tube is inserted into a blood vessel in your arm, groin, or neck that is threaded to the heart. A special dye is put in the tube to show the blood flow in the vessels around the heart. This procedure can also be used as a part of treatment.
- Cardiac CT scan – Special x-ray pictures of the heart that can look for calcium or blockage in heart blood vessels.
- Cardiac MRI – An imaging test that can take detailed pictures of the heart
- Echocardiography – An ultrasound, test using sound waves to create pictures of the heart

- Stress testing – A test that looks at how well the heart works under physical stress either by exercise or medicine to work the heart

Treatment

Certain procedures are used to treat coronary artery disease including:

- Angioplasty – During cardiac catheterization, the tube in the heart blood vessel can be used to place a balloon or stent inside the blockage to open and increase blood flow
- Coronary Artery Bypass Surgery – Healthy blood vessel is taken from leg, chest or wrist and the surgeon attaches it to the coronary artery to get around the blockage and create better blood flow wot the heart.

Common medications used to treat coronary artery disease include:

- **Anticoagulants** (e.g. apixaban, dabigatran, rivaroxaban, warfarin) – blood thinners to decrease clotting in blood vessels
- **Antiplatelet agents and dual antiplatelet therapy (DAPT)** (e.g. aspirin, clopidogrel, prasugrel, ticagrelor) – keep blood clots from forming
- **Angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs)** (e.g. lisinopril, enalapril, benazepril, losartan, olmesartan) – lowers blood pressure and decrease workload of the heart
- **Beta blockers** (e.g. metoprolol, bisoprolol, propranolol, carvedilol) – slows heart rate and decreases workload of the heart
- **Calcium channel blockers** (e.g. amlodipine, nifedipine, diltiazem) – relaxes blood vessels and can decrease blood pressure and chest pain due to coronary artery disease
- **Cholesterol lower medications** (e.g. atorvastatin, rosuvastatin, pravastatin, evolocumab) – lower bad cholesterol also known as LDL
- **Vasodilators** (e.g. isosorbide dinitrate, isosorbide mononitrate, hydralazine, nitroglycerin) – widen blood vessels to allow blood to flow more easily in the heart and decrease blood pressure

Managing coronary artery disease involves a comprehensive approach that includes a healthy diet, regular exercise as advised by your doctor, appropriate medical procedures, and taking prescribed medications. It's important to have regular follow-ups with your doctor, who can order tests to check for blockages in your heart's blood vessels. Maintaining blood pressure below 130/80, keeping LDL cholesterol levels under 70, and managing blood sugar within a healthy range are essential for controlling coronary artery disease.

Support Groups

American Heart Association Support Network Home https://supportnetwork.heart.org/s/

For additional information, check out:

Coronary heart disease: MedlinePlus Medical Encyclopedia https://medlineplus.gov/ency/article/007115.htm; What You Need to Know If You Have Coronary Artery Disease https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.111.019836

The American Heart Association Diet and Lifestyle Recommendations | American Heart Association https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/aha-diet-and-lifestyle-recommendations

Quit smoking Home | Smokefree https://smokefree.gov/