

An Introduction to Coronary Artery Disease

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■ What is Coronary Artery Heart Disease

- Coronary artery heart disease occurs when the coronary arteries supplying blood to the heart are partially or completely blocked.
- The main cause is atherosclerosis, which thickens the blood vessel walls, reduces blood flow, and decreases the supply of oxygen and nutrients to the myocardium, leading to discomfort in the heart.

■ Distribution of Coronary Arteries

- Left coronary artery: Left anterior descending branch, left circumflex branch.
- Right coronary artery.

■ Risk Factors

■ Uncontrollable Risk Factors:

- ◆ Family history
- ◆ Age: 40 years and above
- ◆ Gender: Males have four times the risk of females
- ◆ Race: White males

■ Controllable Individual Risk Factors:

- ◆ Smoking: Nicotine causes vasoconstriction and increased oxygen consumption.
- ◆ Hypertension: Uncontrolled high blood pressure.
- ◆ Hyperlipidemia: Elevated cholesterol and triglyceride levels lead to narrowed or blocked blood vessels.
- ◆ Diabetes: Weak blood vessel cells increase the likelihood of coronary artery heart disease.

■ Contributing Factors

- ◆ Obesity: Increases the heart's workload; weight exceeding ideal body weight by 10% should be monitored.

The formula for ideal weight :

$$(\text{Height in meters})^2 \times 22 + 10\%$$

- ◆ Lack of exercise: Regular exercise reduces weight, relaxes blood vessels, lowers blood pressure, and reduces stress, lowering the incidence of coronary artery heart disease.
- ◆ Stress: Increases adrenaline secretion, raises blood pressure, accelerates heartbeat, and damages arterial vessel walls.

Controlling personal risk factors and contributing factors effectively helps prevent heart disease.

■ Clinical Manifestations

■ Angina Pectoris

- ◆ Occurs when the coronary arteries supplying blood to the heart are partially blocked, causing temporary oxygen deficiency in the myocardium.
- ◆ Results in transient, episodic pain in the lower sternum or precordial area, which may radiate to the left shoulder and inner side of the left arm. Rest or

medication usually relieves the pain.

- ◆ Exertion, emotional excitement, and exposure to cold environments can trigger angina pectoris.

■ Myocardial Infarction

Sudden blockage of coronary arteries interrupts blood flow and oxygen supply to heart muscles, leading to local or widespread necrosis. Symptoms may include:

- ◆ Chest pain lasting more than 30 minutes, or a feeling of chest oppression that is not relieved by rest.
- ◆ Chest pain may radiate to the left shoulder, neck, jaw, or back.
- ◆ Sublingual nitroglycerin does not relieve the pain.
- ◆ Dizziness, cold sweats, extreme fatigue, weakness, difficulty breathing, and even circulatory shock.

■ Treatment

■ Medications

Anticoagulants, antiplatelet agents, coronary artery dilators, antihypertensive drugs, nitroglycerin tablets.

- Percutaneous Transluminal Coronary Angioplasty (PTCA): A procedure performed in the coronary arteries using a catheter with an inflatable balloon at one end.



The balloon is inflated in the narrowed area of the artery to widen the passage, facilitating blood flow.



If necessary, a stent may be placed.



■ Coronary Artery Bypass Grafting (CABG)

Surgically using a vein from the chest or leg to bypass a blocked section of the coronary artery, restoring blood flow.

■ Daily Life Guidelines

- Diet: Consult a nutritionist.
- No smoking or excessive alcohol consumption.
- Maintain a regular lifestyle, with 6-8 hours of sleep daily, avoiding late nights, and scheduling rest times in the morning and afternoon.
- Relaxed mood, avoiding anger, tension, excitement.
- Use the principle of saving energy, such as using a cart instead of carrying items, avoiding strenuous activities like lifting heavy objects, and taking breaks during physical exertion.
- Avoid hot baths or prolonged standing to prevent dizziness due to blood vessel dilation.
- Maintain ideal body weight to reduce heart load.
- Carry nitroglycerin tablets at all times.

■ Exercise Guidelines

- Under stable conditions, start activity 24-48 hours after a heart attack to enhance exercise tolerance.
- Check pulse rate before activities (ideally 50-100 beats per minute). If exceeds 120 beats per minute or increases by 20 beats or decreases by 10 beats from baseline, it indicates intolerance to the activity.
- Start with less strenuous exercises, gradually increasing intensity. Warm-up and cool-down 5-10 minutes before and after each activity.
- Best time for exercise is two hours after meals.
- Avoid activities that hold breath (e.g. weightlifting).
- Carry nitroglycerin tablets when exercising outdoors; use them immediately if chest pain occurs.
- Discuss with physician when to resume sexual activity; foreplay prepares heart for increased activity.
- Stop activity and seek medical attention if heart rate increases more than 20 beats per minute, difficulty breathing, chest pain, pale complexion, excessive sweating, or extreme fatigue.

■ Nitroglycerin Tablet Usage Guidelines

- Keep the medication with you; it can be life-saving.
- Place it under the tongue when experiencing chest discomfort. If not improved after 3-5 minutes, take a second tablet. If there is no relief after 5 minutes, take a third tablet, and seek medical attention if chest pain persists.
- If you experience temporary dizziness after taking the medication, breathe deeply or place your head between your knees.
- Avoid alcohol consumption or sudden standing.
- If blurred vision, dry mouth, skin rash, or persistent or severe headache occurs, consult a doctor.
- Store the medication away from direct sunlight, note the date of bottle opening, and ideally replace after 3 months. The tablet should cause a tingling sensation when placed under the tongue; otherwise, it may be ineffective.

The information provided is for reference only. Please discuss your clinical status with your physician.

If you have any questions, please contact

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