Galichia Heart Hospital

UNDERSTANDING CORONARY ARTERY DISEASE

Having symptoms of coronary artery disease (CAD) or blockages in the blood vessels to the heart, causes fear in some people. Other people ignore the problem or deny that anything is wrong, sometimes waiting to seek treatment until it is too late. Although, these are all normal feelings, they can interfere with diagnosis, treatment and recovery. Learning about CAD, how it can be treated, and how to prevent future problems will help you to live with heart disease.

Atherosclerosis

Atherosclerosis, or "hardening of the arteries," is a buildup of fatty deposits along the inside walls of arteries. The arteries in the body supply oxygen and nutrient-rich blood to muscles. As the fatty deposits build up, the artery opening gradually narrows and blood flow is decreased. When blood flow is decreased in the arteries to the heart (coronary artery disease), angina, shortness of breath, or even a heart attack may occur. If arteries in the legs are affected (peripheral artery disease) leg pain (claudication) occurs. Finally, atherosclerosis of the arteries to the brain can cause strokes or transient ischemic attacks (TIA's), which are "mini strokes."

Coronary Risk Factors

Several factors have been found to increase the likelihood of getting atherosclerosis and coronary artery disease. These are called risk factors. Two main types of risk factors exist. Non-modifiable risk factors are those you have no control over. These include your family history, age, and gender. Males are at higher risk than females.

You can control or do something about modifiable risk factors. Smoking, cholesterol, diabetes, high blood pressure (hypertension), inactive lifestyle, stress and being overweight are all modifiable risk factors. Modifiable risk factors can be reduced or eliminated if you make the necessary life-style changes.
Even changing one risk factor can make a difference in your heart health. Studies have shown that reducing your risk factors can prevent coronary artery disease from getting worse, and may even cause it to improve.

RISK FACTORS

NON-MODIFIABLE
- Family history
- Gender
- Age

MODIFIABLE
- Smoking
- Cholesterol
- Diabetes
- High Blood Pressure
- Inactive Lifestyle
- Stress
- Weight

Collateral Circulation

A narrowed or blocked coronary artery may cause the body to develop or open new blood vessels near the area of heart muscle it normally supplies. The new blood supply is called **collateral circulation**. This usually takes several months or years to develop. If enough collateral blood flow forms, angina may decrease, a heart attack may be prevented, or healing after a heart attack may be improved.

Angina

Angina is a pain or discomfort in the chest, arms or jaw. It frequently occurs during exercise, stress or other activities when your heart rate and blood pressure increase. With these activities, the heart muscle needs more blood with oxygen. The pain is a signal that not enough blood is getting through the arteries. Angina is usually brief, lasting a few minutes and is commonly relieved by rest and / or nitroglycerin. Angina is **not** a heart attack. During angina the flow of blood to the heart muscle is only reduced **temporarily**. Angina does not cause permanent damage to the heart muscle.

Heart Attack

A heart attack results from a prolonged lack of blood to a part of the heart muscle. This occurs when a blood clot forms in the narrowed artery and the artery becomes blocked. A heart attack causes part of the heart muscle to be **permanently** damaged. The medical term for a heart attack is myocardial infarction, or MI.

Soon after a heart attack the healing process begins. In the first weeks after a heart attack, dead muscle cells are removed by the body's white blood cells. There may be a slight fever during this time. The heart becomes thin and may be at risk for more damage.

After the dead muscle cells are removed, a scar forms in the damaged area of the heart. This scar is formed within the first few weeks; however, it takes about 4-6 weeks for the scar to become firm and tough.

Recovery from a heart attack begins in the hospital, but continues after you go home. Most people are able to return to normal activities, including returning to work, within 6 to 12 weeks after a heart attack.

Daily periods of rest are important during the first 4-6 weeks after a heart attack to prevent complications and allow healing to take place. Your activities will be limited at first, but as the scar becomes firmer more activities are allowed. Your health care team will teach you about your activities at home before you are discharged. Healing times vary and complete healing from your heart attack usually takes 2-3 months.

Scarred tissue does not help the pumping action of the heart. Therefore, it is important that the undamaged part of your heart muscle works as well as possible. The rest of the muscles in your body need to become efficient as well.

Treatment of Coronary Artery Disease

There are three types of treatment for coronary artery disease:

- Medical therapy
- Percutaneous catheter interventions
- Coronary artery bypass surgery

The type of treatment depends on the severity of coronary artery disease. All these treatments improve blood flow to the heart muscle and decrease the risk of a heart attack. **No matter what type of treatment is done, it does not "cure" coronary artery disease. Treatments must be combined with modifying your coronary risk factors for long term success**.

Medical therapy

Treatment with medicine is done to decrease the heart's demand for oxygen and nutrients. Medicines can increase blood flow to the heart muscle by relaxing the coronary arteries, decreasing the heart rate and decreasing blood pressure. Medical therapy is often used first or sometimes as a temporary treatment until angioplasty or bypass surgery is done. If medical therapy fails, angioplasty or surgery is often the next step. Common types of medicines used are nitroglycerin, beta-blockers and calcium antagonists.

Percutaneous catheter interventions

These procedures are done to decrease the amount of blockage in one of the coronary arteries. All of the procedures are done by passing a small tube (catheter) into one of the arteries in the leg, up to the heart and into the coronary artery. Each type of procedure decreases blockages in a different way. "Balloon" **angioplasty** 'cracks' the blockage and pushes it to the side of the wall. Often a **stent**, which is a small metal tube, is placed at the site of the blockages to help prevent the blockage from returning. Other techniques, such as **laser** and **roto blader**, also are ways of decreasing the amount of blockage. None of these procedures results in a cure for coronary artery disease and there is a chance that the blockage could return.

Coronary Artery Bypass Surgery

Coronary artery bypass surgery is done to improve the blood flow to the heart muscle by bypassing the blockage. Surgery should decrease or completely stop your angina. Bypass surgery is not a cure for heart disease, but it should improve the quality of your life.

During bypass surgery, a blood vessel from your leg or chest wall is used to bypass the blockage in your coronary artery. Usually, one end of the blood vessel is sewn into the coronary artery below the blockage. The original blockage remains, but blood is directed around it. This operation gives the heart muscle a new supply of oxygen and nutrient-rich blood.