

Faith Community Nursing – February 2018

Great strides have been made in the last several years for the care of those with cardiovascular disease (CVD). Immediate action to enter emergency medical care continues to be the number one goal to save lives. Even 15 minutes can be the difference between death and disability, and returning to a fulfilling life. The second goal is primary and secondary prevention of the causes surrounding CVD and reducing these risk factors.

Goal #1: Immediate Action

Two of the most common reasons of cardiovascular emergencies are heart attack and stroke. The cause for a heart attack or stroke is similar. Blood supply is interrupted, causing tissue death. Most often this is caused by a blood clot or *thrombus*. When a blood clot (thrombus) moves from one part of the body to another, it is called an *embolus*. When a clot blocks an artery to the heart, it is called a heart attack. When the clot blocks an artery to the brain, it is called a stroke. Symptoms of heart attack and stroke are different, as well as how they are treated. Symptoms must be recognized to activate emergency care.

A **heart attack** or *myocardial infarction* is a loss of blood to the heart muscle causing the heart tissue to start to die. The symptoms for a heart attack are:

- **Chest discomfort** in the center of the chest that lasts for more than a few minutes or that goes away and comes back (uncomfortable pressure, squeezing, fullness, or pain)
- **Discomfort in other areas of the upper body** (one or both arms, back, neck, jaw, or stomach)
- **Shortness of breath** (with or without chest discomfort)
- Other signs: **breaking out in a cold sweat, nausea, or lightheadedness**
- Chest pain is the most common symptom; however, women are more likely to experience other common symptoms.

The first 90 minutes after symptoms begin is critical. Persons suffering a heart attack are more likely to survive if blood flow is restored within the first 90 minutes. Every 10 minutes is associated with an increase in long term survival rates. Blood is most often restored through use of a technique called a cardiac catheterization where an interventional cardiologist enters the heart through an artery in the groin or wrist, with a small wire. Both are direct routes to the heart's arteries. The wire has a tool to remove the clot and deploy a wire stent to keep the cardiac blood vessel open. Blood is restored and the heart muscle stops dying.

A **Stroke** is a brain attack, also called a *Cerebral Vascular Accident (CVA)*, and is the sudden loss of brain tissue. The symptoms of a stroke are simplified by the acronym F.A.S.T.:

- **F – Face** – sudden facial droop or numbness
- **A – Arms** – sudden weakness or tingling/numbness (*paresthesia*) of one side of the body
- **S – Speech** – Sudden slurring or garbled speech or the inability to speak or understand speech
- **T – Time** – time to call 9-1-1

- Other common symptoms are sudden **confusion, trouble seeing** in one or both eyes, **trouble walking or dizziness, loss of balance or coordination**, and a **severe headache** with no known cause.

The first 3 hours after a stroke are critical. A drug called tissue plasminogen activator (tPA) that can break up the blood clot can be given during this time. The Federal Drug Association allows this drug to be given up to 4.5 hours. It is twice as effective in the first 90 minutes of a stroke versus given at 3 hours. Every 15 minutes sooner that tPA is given is associated with better outcomes and decreased disability.

Goal #2: Reducing Risk Factors

Risk factors are the same for heart attack and stroke. Risk factors that cannot be controlled are:

- Age – every decade of life increases the chances of stroke and heart attack especially > 40
- Gender – men are more likely than women to die of a heart attack; however, women are more likely to have a stroke and die of a stroke
- Family History (of CVD) – genetics can increase the risk of heart attack and stroke
- Race – African descendants are most likely to have cardiovascular disease followed by Hispanics, Whites, and Asians
- Previous stroke or heart attack.

Most people are aware that a healthy diet and proper exercise can lower risk factors. Some risk factors that can be controlled, even by medication if needed, are:

- High Blood Pressure (BP) – a BP of less than 120 over less than 80 is shown to have less negative cardiovascular effects including *stenosis* (narrowing of the arteries) and *atherosclerosis* (hardening of the arteries)
- Smoking – quitting smoking significantly decreases your risk of CVD. Smoking narrows and hardens the arteries much like high BP and allows fatty deposits to cling to the arteries. Medications and behavioral change programs can help with smoking cessation
- High Cholesterol – high cholesterol in the blood forms fatty deposits that narrow the arteries and make it easier for clots to form on the artery walls. Medications can reduce cholesterol in the blood
- Lack of regular physical activity – exercising 30-45 minutes a day has been shown to decrease blood pressure and cholesterol, and strengthen the heart muscle
- Obesity - the heart has to push through an extra mile of blood vessels for every pound of being overweight. Simply put, the less weight, the less the heart has to work.
- Diabetes – diabetes affects every vessel of the body especially the small vessels of the heart and the brain causing narrowing and hardening of the arteries.

This article was written by Joel Black, PT, MPT, CSRS. Joel is a Senior Therapist, Clinician III, providing physical therapy services to the Augusta Health inpatient population. He also serves on our Stroke Team, providing education and health screenings in our community. If you have

any questions related to this article, please contact Dana Breeding, RN Health Educator in Community Outreach of Augusta Health at 332-4988 or 932-4988.