

Health Matters – February 2010

Coronary Artery Disease

- A 59-year-old man with borderline diabetes awakes in the night with severe chest heaviness, sweating and lightheadedness. His wife calls 911 and in the ambulance an EKG shows an acute heart attack. He is brought directly to the cardiac catheterization laboratory at United Hospital and within 35 minutes a stent is placed in one of his coronary arteries that is totally blocked. Two days later he goes home on aspirin, beta-blocker, cholesterol medications and a blood thinner. He starts an exercise program, quits smoking and loses weight. Subsequent testing shows no permanent heart damage, and he never has another episode.
- A 75-year-old woman develops mild shortness of breath and chest aching after walking on her treadmill for 25 minutes. She undergoes a nuclear stress test at Lakeview Heart Center and experiences the same symptoms 10 minutes into the test. The stress test is mildly abnormal. She is treated with beta-blocker medication, aspirin and cholesterol medicine. Her symptoms resolve, and yearly stress testing is unchanged for the next 5 years.
- A healthy 59-year-old female triathlete has heart disease in her family. She is not on any medications, has no heart symptoms and has a normal cholesterol level. She hears an ad on the radio and gets a coronary calcium CT scan. The scan shows a moderate degree of calcium in her coronary arteries. She undergoes a stress test, which is completely normal. She meets with her doctor and is treated with cholesterol medicine and aspirin.

These are examples of coronary artery disease, or “CAD”. CAD is a chronic condition characterized by plaque in the walls of the coronary arteries, which supply the heart muscle with blood. Plaque can obstruct blood flow in the coronary arteries. Coronary plaque can become unstable acutely or can remain stable for many years. As illustrated in the first example, CAD can lead to an acute heart attack or myocardial infarction (MI) with consequent closure of a coronary blood vessel. This can trigger dangerous heart rhythms that need immediate treatment.

Rapid treatment of MI (with balloon angioplasty and stenting) protects heart muscle, minimizes heart damage and prolongs life. For these reasons it is very important that people with symptoms of a possible heart attack call for paramedics as soon as possible.

Another frequently seen example of CAD is characterized by symptoms such as chest heaviness or unexplained shortness of breath, or worsening of such symptoms that had

been previously stable. Because such worsening of symptoms may be a signal of unstable plaques, people in this situation should also seek medical attention as soon as possible.

The second example illustrates plaque that is significant enough to produce symptoms but remains stable for a long period of time without worsening. Although the person in the third case has no symptoms or any evidence for impaired blood flow to the heart, she is assumed to have the early beginnings of CAD and treatment is focused on trying to prevent its progression.

The overall goals of treatment of CAD are the same as with any other disease: relieve symptoms, prevent progression of the disease, avoid complications and prolong life. To these we also add the prevention of CAD.

Risk factors that increase the possibility of developing CAD include family history, diabetes, hypertension, high cholesterol and cigarette smoking. The risk of CAD can be reduced with management of all these risk factors (except for family history). Some other factors also associated with a higher chance of developing CAD include physical inactivity, obesity, and depression.

Although CAD is still by far the leading cause of death in the US, the mortality rate of CAD has been dropping thanks to advances in medical care. These advances include the development of coronary care units, treatment of hypertension and hyperlipidemia, widespread use of aspirin, and the development of emergency systems to treat heart attacks rapidly with angioplasty and stenting.

So what are some guidelines on lowering the risk of developing CAD or minimizing the risk of already present progressive CAD?

- 1) Do not smoke. Ever.
- 2) Establish a relationship with a primary care MD and have your blood pressure, glucose levels, and lipid levels checked and treated if indicated.
- 3) Strive to maintain “ideal” body weight through exercise and diet. This is difficult for many people; however, it is definitely “doable”.
- 4) “Know your body” well and if you develop symptoms that may represent CAD, get help.

A good online resource for more information on prevention is the American Heart Association (www.americanheart.org).



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