Mercy Heart Institute
CARDIAC MONITOR
For healthcare professionals
Fall/Winter 2006

Peripheral artery disease: diagnosing and treating leg pain

From state-of-the-art testing to the latest technology, Mercy is at the forefront of treating peripheral artery disease (PAD), a disease that blocks the blood flow to arms and legs and often results in pain. Left untreated, it could increase the risk for heart attack or stroke. Historically, patients have had to endure major surgery to restore regular blood flow to their legs. But today, minimally invasive treatments are now the normal course of action.

Recognize the warning signs

Many patients who experience recurrent pain, tightness or cramping in their legs during activity chalk it up to aging, especially because the pain often stops when they rest. It's not old age, but rather a common symptom of PAD called intermittent claudication. The pain is caused by plaque deposits that have built up in the arteries, depriving working muscles of oxygen and causing pain. But pain is one of many symptoms. Patients can also experience numbness or tingling in the legs, feet or toes; changes in skin color; persistent cool skin on the legs, feet, arms or hands; infections or sores that don't heal or are slow to heal; and impotence. Many patients are asymptomatic.

Diagnose the problem

The most common PAD screening is a quick and simple ankle-brachial index (ABI). The simple blood pressure measurements of an ABI can help you screen your patients for PAD and help define the level of severity.

Normal — A normal resting ankle-brachial index is 1 or 1.1. This means that your blood pressure at your ankle is the same or greater than the pressure at your arm, and there is no significant narrowing or blockage of blood flow.

Abnormal — A resting ankle-brachial index of less than 1 is abnormal. If the ABI is:

- Less than 0.9, significant narrowing of one or more blood vessels in the legs is indicated
- Less than 0.8, pain in the foot, leg or buttock may occur during exercise (intermittent claudication)
- Less than 0.4, symptoms may occur when at rest
- 0.25 or below, severe limb-threatening PAD is probably present

If you suspect PAD, further diagnostic testing can pinpoint blocked arteries, their level of severity and what treatment will be required. At Mercy General Hospital, a Cardiovascular Profiling System is now available. This is a non-invasive screening device that simultaneously measures ABI and Pulse Wave Velocity to evaluate the stiffness of the artery wall. You may refer patients for this screening test by calling 1.877.9HEART9.

continued on page 2

Patients with symptomatic PAD have:

- An 80-90% chance of atherosclerosis in the femoral and popliteal arteries*
- A 40–50% chance of atherosclerosis in the tibial and peroneal arteries*
- A 30% chance of atherosclerosis in the aorta and iliac arteries*

**Creager MA, Dzau VJ. Vascular diseases of the extremities. In: Braunwald E, Isselbacher KJ, Petersdorf RG, Wilson JD, Martin JB, Fauci AS, eds. Harrisons Principles of Internal Medicine. 13th ed. McGraw-Hill Book Company, 1994:1135-1137*

Vision Statement

In conjunction with the Sisters of Mercy, our cardiovascular care team is dedicated to providing patients with compassionate, quality, cost-effective care through state-of-the art advancements in research, diagnostic screening, surgical and interventional procedures, clinical education and preventive/wellness programs for the improvement of cardiovascular health.

***Cardiac Monitor* — a resource for you**

Distribution of *Cardiac Monitor* is intended for cardiologists and primary care physicians. The information included in this newsletter is provided as an educational service. Mercy Heart Institute respects your privacy. If you prefer not to receive any further communications from us, please send a brief note to Candice Brooks, Mercy Heart Institute, 3939 J Street, Suite 220, Sacramento, CA 95819, and include the mailing label from this newsletter if possible. It may take up to 30 days to process your request.

Mercy
a member of CHW

CARDIOLOGY AND PRIMARY CARE

Catch PAD early for best treatment outcomes

Peripheral Artery Disease (PAD) affects an estimated 8–12 million American men and women. * While millions of aging Baby Boomers have one or more risk factors for developing this serious circulatory disease, many have never heard of it. That means they don't know that uncontrolled PAD can result in limb loss and increases their risk of having a heart attack or stroke.

As the population continues to age, many physicians like yourself will be faced with patients complaining of symptoms that may indicate arm or leg artery disease. A simple test can diagnose PAD and, with early detection, it can be treated and managed before it causes more serious trouble.

Who is at risk?

When patients complain of dull throbbing or cramping sensations in their legs, it can often be a sign of peripheral artery disease. Awareness of PAD as a treatable condition is increasing and, with millions of Americans affected by PAD, a number of your patients are likely at risk, too, particularly those who are over the age of 65. Asking the following questions can help you determine a patient's level of risk for PAD:

- Do you have cardiovascular problems such as high blood pressure or high cholesterol (hyperlipidemia)?
- Have you had a heart attack or stroke?
- Do you have diabetes, a family history of diabetes or both?
- Do you have a family history of cardiovascular problems or PAD?
- Do you smoke or have you ever smoked?
- Are you more than 25 pounds overweight?
- Do you lead an inactive lifestyle?
- Do you have aching or pain in your legs during activity that goes away when you rest?
- Do you have pain in your toes or feet at night?

The more "yes" answers to the above questions, the higher their risk of PAD. If you suspect your patient is at risk, early diagnosis is key along with supportive information on risk factors and treatment options to prevent serious complications down the road.

If you have questions about peripheral artery disease, or would like to receive a package of brochures about PAD to share with patients, please call 1.877.9HEART9.

**American Heart Association. Heart Disease and Stroke Statistics – 2005 Update. Dallas, Texas: American Heart Association – 2004.*

Peripheral artery disease: diagnosing and treating leg pain

continued from page 1

Treat early for the best outcome

When caught early, PAD is treatable and manageable. In mild cases, patients may only need to make positive lifestyle changes such as exercising on a regular basis or quitting smoking to see improvement and reduce their symptoms.

In addition, those with PAD should pay special attention to managing risk factors such as hypertension, high cholesterol and diabetes. In cases of advanced PAD, medical intervention may be necessary to treat blockages, such as inserting a small catheter directly into the artery — requiring only a small nick in the skin the size of a pencil tip.

With your help, your patients can reduce PAD's impact on their everyday life. And, as you help them manage their PAD, you'll help increase their overall health and well-being and help decrease their risk of losing a limb or having a heart attack or stroke. Talk to your patients about PAD before it causes more serious problems.

Call Mercy Heart Institute at 1.877.9HEART9 for additional ABI testing and referral to a specialist for PAD evaluation.

PHARMACY CORNER

Peripheral artery disease: medication may be the solution

By Eric Arnold, Pharmacy Student, University of the Pacific

Peripheral artery disease (PAD) is characterized by atherosclerosis and decreased blood flow primarily to the lower extremities. The National Health and Examination Survey recently reported that the condition affects 4.3% of people older than 40. Studies demonstrate that PAD increases the incidence of cardiovascular events even without a prior history of MI or stroke. Risk factor modification should be considered along with pharmacotherapy. A complication of PAD is intermittent claudication (IC) that is painful and threatens the limb. IC in patients may warrant intervention to correct blood flow.

Modification of risk factors should be the first step in preventing the sequelae of PAD. In the 2005 guidelines, the American College of Cardiology and American Heart Association (ACC/AHA) addresses these risk factors. Recommendations include smoking cessation and control of diabetes and hypertension, with LDL-C < 100mg/dL for those with PAD. Finally, exercise may also significantly increase exercise tolerance in these patients.

Treatment of PAD takes on two goals: prevention of cardiovascular events and treatment of symptoms. One meta-analysis trial reported both low-dose ASA (75–160mg) and medium-dose ASA (160–325mg) daily resulted in a decrease of "serious vascular events" in higher risk patients including those with PAD. Aspirin plus dipyridamole as an extended release product has also been considered an option because it may offer additional protection over aspirin alone. Clopidogrel, an ADP antagonist, may not be as effective as aspirin but can be considered in people who are intolerant of aspirin therapy. Clopidogrel is now available as generic, which may reduce the cost of PAD therapy.

Pentoxifylline (Trental) is commonly prescribed to decrease the "stickiness" (viscosity) of the blood and therefore improve the circulation and oxygen delivery to vital tissues. Some studies have shown that Pentoxifylline's efficacy is not well established. Cilostazol (Pletal) is a drug for the treatment of intermittent claudication and works to lessen symptoms and improve walking distance. Cilostazol should never be used (is contraindicated) in patients with heart failure.

Signs and symptoms of IC consist of pain, numbness and peripheral ischemia. Guidelines differ in when to use endovascular procedures such as stenting and new minimally invasive techniques vs. medical management. The American College of Chest Physicians recommends the former as first-line therapy, while the ACC/AHA recommends that medical and pharmacologic therapy be tried first, then moving to minimally invasive procedures if the patient fails to respond to life-style changes and medications.

Newsworthy

Wound care clinic at Mercy General

Mercy General Hospital has developed a multidisciplinary wound care clinic to treat patients with chronic wounds that won't heal. Physicians with specialized knowledge and abilities work together to formulate and execute a full treatment plan encompassing podiatry, vascular surgery, general surgery and infectious diseases, as well as inpatient care by a hospitalist. The overall goal is to avoid amputations and decrease morbidity from diseases such as diabetes and PAD.

Primary care physicians can call the wound care clinic for an inpatient consultation, or to have a clinic specialist admit and manage the patient's hospitalization from beginning to end. For more information about the wound care clinic at Mercy General, call 916.454.3668.

HBO and wound care at Mercy San Juan

Mercy San Juan Medical Center has expertly trained staff and extended hours to treat more patients who might be experiencing the effects of vascular disease, diabetes or irradiation.

Mercy San Juan has 20-plus years of experience in HBO therapy and wound care, and is the only local hospital offering HBO therapy. Full services include:

- Consultative services by physicians specializing in oxygen therapy, wound care and infectious diseases
- Transcutaneous oxygen monitoring
- Wound care, including sharp debridement by specially trained RNs
- Advance dressing techniques, including VAC negative pressure dressings and compression bandaging
- HBO treatments, when indicated
- Patient education in wound care and lifestyle changes

For more information, call 916.537.5040.

RESEARCH NEWS

Latest studies under way at Mercy Heart Institute

Mercy Heart Institute's Research department is participating in many ongoing clinical trials. Some of our new studies include:

- **SYNTAX** — A randomized study comparing percutaneous intervention and stents to coronary bypass surgery in patients who have left-main coronary disease and/or 3-vessel disease.
- **MEND CABG** — A randomized, double-blind study in patients undergoing on-pump CABG to evaluate the cardioprotective effects of an investigational drug called MC-1. This drug is a naturally occurring metabolite of Vitamin B6 and in pre-clinical models of ischemia and ischemia-reperfusion injury, treatment with the drug has demonstrated significant cardio and neuroprotective effects. In the MEND-1 study, treatment with MC-1 was well tolerated and associated with a statistically significant reduction in infarct size as measured by CK-MB.
- **CHAMPION PCI** — This study will compare an investigational drug called cangrelor to clopidogrel (Plavix) in patients who require percutaneous coronary intervention. *Cangrelor is a potent, direct and reversible antagonist of the P2Y12 receptor.* The binding of cangrelor to the P2Y12 receptor inhibits platelet activation.
- This year Mercy Heart Institute will also be involved in a new Boston Scientific drug eluting stent study, which will be evaluating its newest stent platform.

Mercy Heart Institute
1-877-9HEART9
www.CHWhealth.org/MercyHeart

Mark Your Calendar

Arrhythmia 2007: Ideas and Innovations
Gearoid O'Neill, MD
April 29, 2007
Call (916) 733-6966 for information.

Nursing education

"Hands On" Temporary Pacemaker
Feb. 8, 2007
9 a.m. to 1 p.m.

Caring for the Cardiovascular Patient
Feb. 27, 2007
9 a.m. to 1 p.m.

Call (916) 733-6330 for information on all classes/programs.

Cardiology Symposium

From left, Mercy Heart Institute Medical Director Michael Chang, MD, and Program Chairman Scott Baron, MD, are shown with speakers William Elliott, MD; Raj Makkar, MD; Carter Newton, MD; and guest Hugh MacIsaac, MD, from Utica, New York at Mercy Heart Institute's 16th Annual Cardiology Symposium: Concepts & Controversies on Oct. 20–21 in Sacramento. More than 200 people attended the annual conference focusing on some of the latest medical developments in cardiac care. Cardiac surgeon Richard Kaplon, MD, was co-chairman of the symposium.

Mercy
a member of CHW

Mercy Heart Institute
3939 J Street
Suite 220
Sacramento, CA
95819-3633

NON-PROFIT
ORGANIZATION
US POSTAGE
PERMIT #1972
SACRAMENTO