

# CARDIOVASCULAR UPDATE

SUMMER  
2004

## Diagnosis and Management of Coronary Artery Disease in Women



By *Uma Krishnan, MD*  
*Medical Director, Women's Heart Center*

Coronary Artery Disease (CAD) in women has received much attention nationally because of its recent recognition as the primary cause of death for women in the US. In addition, 63% of women who die suddenly from CAD had no prior warning symptoms and 42% of women versus 24% of men will die within one year after myocardial infarction.

Women with CAD also often experience delays in treatment and referral for cardiac catheterization, revascu-

larization and cardiac rehabilitation. Thus, it is important to understand the differences in the presentation, manifestation and diagnosis of CAD in women.

Gender differences exist in the evaluation of CAD in women for several reasons. Because CAD has traditionally been viewed as a male disease there is an underestimation of cardiac risk in women. Gender differences in cardiac ischemic symptoms also result in lower referral rates for non-invasive and invasive diagnostic testing in women with CAD.

Women with coronary artery disease may be older, be more likely to have diabetes and be a (*continued on page 3*)

## Preventing Heart Disease and Stroke in Women

### *New Guidelines from the AHA*

The American Heart Association recently released new guidelines for preventing heart disease and stroke in women, reflecting a shift from viewing cardiovascular disease (CVD) as a have-or-have not condition to one that develops over time. Given that perspective, every woman's risk falls somewhere on a continuum.

The AHA's new recommendations link the aggressiveness of treatment to a woman's risk level, which is ranked using a standardized scoring method developed by the Framingham Heart Study. This method rates a

woman's risk of having a heart attack in the next 10 years as low (less than a 10% chance), intermediate (10–20% chance) or high (greater than 20%).

These guidelines are the result of a major collaborative effort by the American Heart Association and 11 other professional and governmental co-sponsoring organizations. Another 22 organizations have endorsed the guidelines. For a copy of the full guidelines go to the [www.americanheart.org](http://www.americanheart.org) web site.

#### **New AHA Guidelines At-A-Glance:**

- Prevention should be tailored to a woman's individual level of risk for cardiovascular events, determined by her caregiver.
- Smoking cessation, regular physical activity, a heart-healthy diet and weight control are given a strong priority in all women.
- ACE inhibitors and beta-blockers are recommended for all high-risk women.
- High-risk women should be prescribed statin therapy even if their LDL cholesterol levels are below 100 mg/dl.
- Niacin and fibrate therapies are given a strong recommendation for high-risk women with specific cholesterol abnormalities.
- Aspirin is recommended for prevention in all high-risk women and is not recommended for low-risk women. For intermediate-risk women, aspirin can be considered as long as blood pressure is controlled and the benefit is likely to outweigh the risk of side effects such as GI bleeding or hemorrhagic stroke.
- Blood pressure lowering drugs are recommended when blood pressure is greater than or equal to 140/90. Diuretics should be part of the drug regimen for more patients unless contraindicated. The blood pressure should be maintained at less than 130/80.
- Women with atrial fibrillation and intermediate or high risk for embolic stroke should take warfarin. If they cannot take warfarin, or if they are at low risk, they should be given aspirin.
- Women with diabetes must have their blood sugar carefully controlled, as defined by achieving near-normal glycosylated hemoglobin levels (less than 0.7 percent).
- Women with cardiovascular disease should be evaluated for depression and treated or referred for treatment when indicated.
- In addition to a heart-healthy diet, supplementation with omega-3 fatty acids and folic acid may be considered in some high-risk women.
- Hormone therapy and antioxidant vitamin supplements are not recommended for CVD prevention for women at any level of risk.



## MultiCare Regional Heart & Vascular Center Now Open

The MultiCare Regional Heart & Vascular Center opened on June 6, replacing the former surgical and cardiovascular facilities with the region's most advanced technology and equipment.

Highlights of the new facility include:

- 12 new, state-of-the-art Operating Suites
- 4 Dedicated Cardiovascular Suites, each with 700 square feet of space
- 4 Cardiac Catheterization Labs and a Electrophysiology Lab. A dedicated pediatric room offers specialized equipment and a child-friendly environment
- Cardiovascular Short Stay Unit, Consultation Room and spacious Patient Waiting area
- A two-level sky bridge, connecting L Wing surgical areas to the K Wing
- Two Post Anesthesia Care Units
- Picture Archive and Communication System in all Operating Suites
- Video conferencing for nursing education and CME purposes
- Future plans call for a conversion to complete Electronic Medical Record use and electronic medical integration imaging linking off-campus sites and physician offices

The new MultiCare Regional Heart & Vascular Center is led by a team of highly skilled cardiologists, cardiovascular surgeons and skilled nursing staff. For more information contact the **Cardiovascular Services** office at **253-403-1109**.

## Heart Services for Women

*New center offers screenings and treatment*

Most women are unaware that heart disease is their most serious health concern, claiming more women's lives than seven of the other leading causes of death combined.

Among women aged 35–70, 81% are at risk of heart disease, yet only 25% have been diagnosed or recognize their risk.

The MultiCare Women's Heart Center was created to help raise awareness and promote prevention. The Center opened at Tacoma General Hospital in February, offering complete services for the prevention and treatment of heart disease in an environment of comfort and pampering.

The Center's services include risk factor identification, analysis, diagnostic testing, and Women's Heart Advantage screenings. These screenings evaluate a woman's personal risk for heart disease, beginning with a risk assessment and basic lab tests. Screenings start at \$35.

Based on a patient's needs, Women's Heart Advantage screenings may include:

- One-on-one consultation with a cardiac nurse practitioner
- Personal and Lifestyle Profiles



Women's Heart Advantage

- Lipid Panel with direct LDL cholesterol measurements
- Glucose, blood pressure and Body Mass Index measurements
- Assessment for Metabolic Syndrome
- Women's Health Profile, menopause and birth control history
- C-reactive Protein screening — a promising new test to predict future heart disease (*available at additional cost and only recommended for high risk women*)

The MultiCare Women's Heart Center is designed for a woman's comfort — complete with fluffy robes, Victorian décor, soft music and the scent of lavender. To schedule a Women's Heart Advantage screening, call **253-403-2898**.

## New Short Stay Unit Offers Complete Care

The Cardiovascular Short Stay Unit opened at Tacoma General Hospital in June, as part of the new MultiCare Regional Heart & Vascular Center. This eight-bed unit is designed to provide complete care to diagnostic cardiac and vascular patients.

The new unit is located next to the four Cardiac Cath Labs at the south end of the L Wing, allowing easy access for patients. Two physician consultation/workrooms have been included to provide space for physician conferences and private discussions with families. Preadmission workups can also be conducted here, enabling patients to become familiar with the area prior to their procedure.

## Echocardiogram Program Expands

*Now serving Auburn and Kent patients*

Echocardiograms are now being offered at the Auburn Health Center. This service will be available on Mondays and will support the echocardiogram services already offered at the Covington MultiCare Clinic.

To schedule an appointment, call the **Covington Heart Center** at **253-372-7010** or use the Heart Center Scheduling pool in the Epic system. The tests will be offered at the Auburn Health Center, at 202 Cross St. SE.



## New Cardiothoracic Surgeons Join MultiCare

**Allen H. Graeve, MD**, received his MD from Creighton University, Omaha, NE, and completed a general surgical internship and residency at the University of New Mexico Hospitals in Albuquerque. He completed his cardiothoracic residency at the University of Tennessee at Memphis and a fellowship at the Medical College of Virginia.

Dr. Graeve is board-certified in both general and thoracic surgery. He comes to MultiCare from private practice in Omaha, Nebraska.

To contact Dr. Graeve or Dr. Harrell, call the MultiCare Cardiothoracic Surgical Associates at 253-403-7257.

**Robert Harrell, MD**, received his MD from Duke University School of Medicine and completed a surgery residency at Mt. Sinai Hospital in Chicago. He completed his cardiothoracic surgery residency at UCLA and received fellowship training at the National Institutes of Health and Emory Clinic in Atlanta.

Dr. Harrell is board-certified in both general and thoracic surgery. He specializes in minimally invasive cardiac procedures, off-pump surgery, aortic valve replacement and repair and video-assisted thoracoscopic procedures. He comes to MultiCare from private practice in Rapid City, South Dakota.



**MultiCare Cardiothoracic Surgical Associates Team:**  
Front row, left to right: Marcia Harris; Sharon Armeni, ARNP; Kris Pulliam, RN  
Back row, left to right: Robert Harrell, MD; Allen Graeve, MD

### Women with CAD (continued from page 1)

smoker. These risk factors contribute to a difference in the classic pain signals for women and men. Women's symptoms more often include abdominal, shoulder, arm, neck or back discomfort as well as shortness of breath. Women may not recognize these conditions as possible cardiac symptoms.

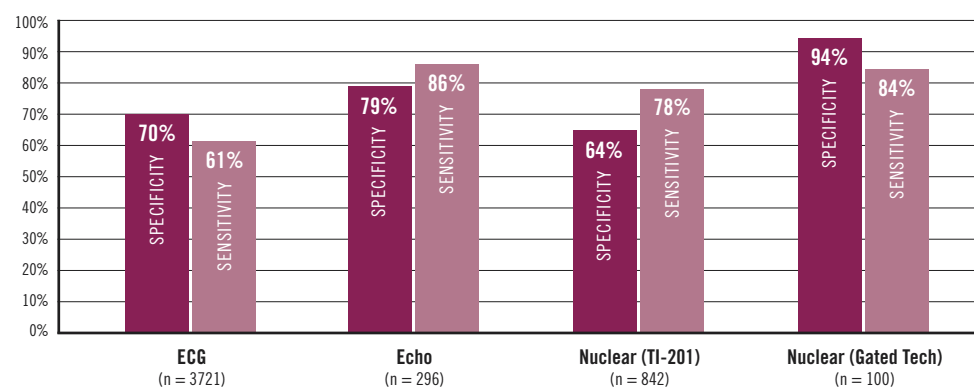
At times, women may only experience a sensation of uneasiness or of feeling "sick" that is difficult to describe. Women also have a significantly higher number of silent episodes of angina and silent heart attacks than men.

The Coronary Artery Surgery Study (CASS) Registry demonstrated that chest pain in women correlates poorly to CAD. In this study 50% of women with chest pain showed little or no coronary artery disease on angiography studies, while only 17% of men tested had little or no coronary artery disease. This study showed that while chest pain is a major indicator of CAD in men, a history of chest pain alone is a poor predictor of CAD in women.

Despite advances in technology, the exercise ECG remains an important tool in the diagnosis and prognosis of the patient suspected of CAD. The exercise ECG has an overall sensitivity of 68% and

### COMPARATIVE TEST STATISTICS ON DIAGNOSTIC ACCURACY IN WOMEN

(Kwok Y, et al. Am J Cardiology. 1999)



a specificity of 77% for the detection of CAD in men. The sensitivity and specificity of the exercise ECG in women is 61% and 70% respectively. There is also a decreased sensitivity in women greater than age 65 and a decreased specificity in women on hormone replacement therapy. Increased false-positive results are due to autonomic/hormonal influences and a digoxin-like effect of estrogen.

Because of the high false-positive or non-diagnostic results with routine stress testing, maximal or pharmacological stress testing with imaging (either echocardiography or nuclear perfusion imaging) is necessary to improve diagnostic results. Even when confidence in standard test results

is high, women are still referred less often than men for invasive studies and aggressive treatment. Women also experience more cardiac events and a higher cardiac mortality.

The information provided by appropriate noninvasive cardiac diagnostic testing is helpful in determining which patients have negligible risk, which should be treated medically, and which should be directed to invasive evaluation and intervention. Clearly, this is especially important for women, whose presentation of cardiac symptoms and risks for CAD may be underappreciated.

## New Varicose Vein Treatment

An exciting new technology is available for treating the underlying cause of many symptoms associated with superficial venous reflux. The Venous Closure procedure offers many patients a minimally invasive alternative to traditional vein stripping.

This procedure allows the physician to make a single, small incision and seal the saphenous vein using radiofrequency (RF) energy. The patient is able to resume normal activity within a day. Once a defective saphenous vein is sealed shut or occluded, blood flow immediately diverts to healthy veins, allowing patients to improve more quickly, and cosmetic issues to be more easily addressed.

The Venous Closure procedure will be performed by **Cascade Vascular Associates**. For more information, call them at **253-383-3325**.

## Impedance Cardiography Now At MultiCare

MultiCare Cardiovascular Services now offers external hemodynamic monitoring at Tacoma General Hospital, Allenmore Hospital, and the Heart Center at Covington.

Impedance Cardiography (ICG) has been shown to reliably provide results comparable to those of a pulmonary artery catheter. ICG allows assessment of a patient's hemodynamic status and ventricular function by determining values for cardiac output, stroke volume, systemic vascular resistance and indices of contractility and fluid status.

The ICG test is covered by Medicare and private insurance and takes about ten minutes to perform. Inpatient or outpatient testing is offered. To receive more information or schedule a test, call the specific site as noted below:

**Tacoma General**.....253-403-4590  
**Allenmore** .....253-459-6634  
**Covington** ..... 253-372-7010

## CV Tech Program

MultiCare is partnering with a consortium of Pierce County healthcare and education organizations to meet the regional need for more cardiovascular technologists.

The group is developing a satellite program of Spokane Community College's Invasive Cardiovascular Technologist Program to be delivered here in Western Washington. Using distance-learning technology students will complete a two year-program, leading to an AAS Degree and Invasive Technologist credentialing.

In April, the Consortium was awarded a grant of nearly \$200,000 from the Federal Department of Labor for program development costs. Consortium Partners include: Clover Park Technical College, Good Samaritan Community Healthcare, Pierce College, Spokane Community College, Tacoma Community College, and the Tacoma-Pierce County Workforce Development Council.

**SAVE THE DATES**

## Mel Evans 10th Annual Seminar In Cardiovascular Nursing Education

**Wednesday, October 27, 2004**

Topics for this year's seminar include:

- AHA Evidenced-Based Guidelines for Cardiovascular Disease Prevention in Women
- Acute Coronary Syndrome
- Healing the Healer
- ICD's and Pacemakers
- Vascular Care: New Treatments and Innovations

For more information contact the **MultiCare Institute for Learning and Development** at **253-403-1280**.



## American Heart Association Heart Walk

**Saturday, October 9, 2004 at 9 am**

Support a MultiCare team!

You can help raise funds to fight heart disease by joining one of MultiCare's walking teams or by donating to support a team. For more information contact **Cardiovascular Services** at **253-403-1109** or log onto <http://heartwalk.kintera.org/piercecountywa>.

## MultiCare Heart Centers

### SERVICES

Regional Heart & Vascular Center  
 Cardiothoracic Surgery  
 Advanced Diagnostics  
 Electrophysiology  
 Heart Failure Clinic  
 Women's Heart Center  
 Cardiac Rehabilitation  
 Support & Education Programs  
 Diabetes Services

### LOCATIONS

**Tacoma General Hospital**  
 315 Martin Luther King Jr. Way  
 Tacoma, WA 98405  
 253-403-1109

**Allenmore Hospital**  
 1901 S. Union  
 Tacoma, WA 98405  
 253-459-6633

**Covington MultiCare Clinic**  
 17700 S.E. 272nd Street  
 Covington, WA 98042  
 253-372-7010

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