



OHVI

QUARTERLY

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Oregon Heart
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FEATURE STORY

Antiplatelet Therapy Key to Prevention of Stent Thrombosis

The word *thrombosis* has been linked with the word *stent* often during the last year in both the popular and scientific literature. This association has caused concern for both patients and cardiologists.

Stent thrombosis (ST) is an uncommon, yet serious, complication of coronary artery stent placement. Coronary artery stents are used in most patients who undergo percutaneous coronary intervention, and some 70% to 80% of those stents are drug-eluting stents, the source of all the recent controversy.

“There has always been the risk of thrombosis with stent placement, and that risk has increased somewhat with the use of drug-coated stents,” says Richard Padgett, MD, cardiologist, and executive medical director of OHVI. “But the perception is that there has been a surge in ST. We really aren’t seeing more cases; it’s just that we are recognizing it now. In the past we have attributed problems more to restenosis than to thrombosis.”

ST can occur acutely, subacutely, or as late as one year or more after coronary stent placement. Within the first year of placement, ST seems to appear more frequently in patients with drug-eluting stents (DES), usually sirolimus-eluting, than in patients with bare-metal stents (BMS). Studies have shown that whereas sirolimus-eluting stents are identified with a lower risk of restenosis than BMS are, DES may increase the risk of late thrombosis because of delayed or incomplete neointimal coverage.

For that reason, and others, Dr. Padgett advocates dual antiplatelet therapy — aspirin and clopidogrel bisulfate (Plavix) — for a

minimum of one year after DES placement.

“Patients should be urged to take their aspirin and Plavix regularly, never missing a day,” he recommends. “Aspirin and Plavix should not be discounted without a consultation with the cardiologist. Antiplatelet therapy is the foundation of stent thrombosis prevention.”

Continuation of dual antiplatelet therapy is especially important if the patient is to undergo any noncardiac or invasive procedure early after stent placement. Surgery increases the risk of stent thrombosis. All too often antiplatelet therapy is discounted in the perioperative period because of bleeding issues. But surgeons are becoming more comfortable working in a platelet field, Dr. Padgett says.

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PEOPLE IN PROFILE



Matthew Trojan, MD

New Medical Director at Heart Failure Center

Matthew Trojan, MD, has been appointed medical director of the Heart Failure Center at OHVI. He replaces Jerold Hawn, MD, who has served as medical director for the center since its opening in April 2005. Dr. Trojan's specialty is care of the patient with advanced heart failure.

Dr. Trojan arrives from the University of Virginia, in Charlottesville, where, after a cardiology fellowship, he pursued advanced training and experience in congestive heart failure, transplant medicine, and electrical device therapy. He also served as a clinical instructor.

He graduated from Emory University School of Medicine, in

Atlanta, in 1999, and completed his internal medicine residency at the University of Minnesota Medical Center, in Minneapolis. He was board certified by the American Board of Internal Medicine in 2002 and again in 2006 in cardiovascular diseases.

Dr. Trojan has served as an investigator on a number of clinical trials, including studies on cardiac resynchronization therapy with CRT-D devices and the efficacy of 3,5-diiodothyro-propionic acid (DIPTA) for patients with congestive heart failure.

An All-American swimmer in 1994, Dr. Trojan still enjoys recreational cycling.

To contact Dr. Trojan, call (541) 484-4332, or e-mail mtrojan@oregoncardiology.com.

PeaceHealth Has New Quality Officer

Steve Gordon, MD, has joined PeaceHealth Oregon Region as chief quality officer. He will be responsible for overseeing all of the region's quality improvement efforts.

His work since 1999 has focused on quality and patient safety at Providence St. Vincent Medical Center in Portland, where he held the position of medical director of quality. He also served on the faculty of that hospital's internal medicine residency program and the faculty of Oregon Health & Science University.

"With the opening in 2008 of the new, state-of-the-art Sacred Heart Medical Center at RiverBend and improvements in the works for the current hospital campus in Eugene, PeaceHealth Oregon Region is clearly making a statement that quality is a top priority," Dr. Gordon says.

"I look forward to working with a team that is so committed to continually providing quality care to every patient who comes through our doors."

Dr. Gordon is a graduate of Harvard Medical School and Harvard's John F. Kennedy School of Government, where he earned a master's degree in public policy.

Dr. Gordon completed his residency at Massachusetts General Hospital. He is a board-certified internist and a fellow of the American College of Physicians.

He can be reached at (541) 686-7499 or at steve.gordon@peacehealth.org.



Steve Gordon, MD

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Cardiologist and surgeons at OHVI have adopted a prevention plan for perioperative stent thrombosis based, in part, on a state-of-the-art review paper (Brilakis, ES., Banerjee, S, Berger, PB. Perioperative management of patients with coronary stents. JACC. 2007;49(22):2145-2150).

The prevention plan is based on six recommendations:

1. Avoid preoperative revascularization when possible.
2. If revascularization is indicated, do not use stents.
3. Choose the appropriate type of stent:
 - BMS if surgery is needed 6 weeks to 12 months after stent placement; if the patient is predisposed to bleeding problems; or if the patient is unwilling or unable to tolerate clopidogrel
 - DES if the surgery is needed 12 months after stent placement
4. Delay surgery for 6 weeks after BMS placement, 12 months after DES placement, particularly if antiplatelet therapy must be discontinued for the surgery.
5. Continue dual antiplatelet therapy throughout the perioperative period or discontinue it only briefly.
6. Educate all physicians and other health care professionals, as well as patients, involved in the care of patients with stent implantations.

Factors Associated with the Probability of Stent Thrombosis

- Resistance to antiplatelet therapy
- Platelet polymorphism
- Complex baseline angiographic morphology
- Smaller maximal balloon diameter
- Stent underexpansion (<80%)
- Stent malapposition
- Inflow or outflow disease
- Persistent dissection
- Total stent length
- Final lumen diameter

(Source: Cardiosource, American College of Cardiology. Used with permission.)

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Fish Oil and Heart Disease

Research continues to show that fish oil is a potential treatment option for patients with cardiovascular disease (CVD). Fish oil as a preventive measure also shows promise.

Treatment Option

In an article titled "Fish Oil: Getting to the Heart of It" (Zatsick, N, and Mayket, P. Journal for Nurse Practitioners. 2007;3(2):104-109), the authors, both RNs, discussed the evidence in favor of fish oil.

Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) — omega-3 polyunsaturated fatty acids found in fish and fish oil — exhibit antiarrhythmic, antithrombotic, antiatherosclerotic, and anti-inflammatory characteristics. Additionally, potential cardioprotective effects of EPA and DHA include improved endothelial function and lower blood pressure and serum triglyceride levels.

Based on their review of the literature, the authors suggested that physicians consider fish oil, through diet or supplement, as a treatment

choice for patients with documented CVD. They also suggested advising patients without documented CVD to consume a variety of fish — but not deep-fried or fast-food fish — at least twice a week.

Prevention Adjunct

Results of the Japan EPA Lipid Intervention Study (JELIS), published earlier this year (Yokoyama M et al. Effects of eicosapentaenoic acid on major coronary events in hypercholesterolaemic patients (JELIS): A randomised open-label, blinded endpoint analysis. Lancet 2007;369(9567):1090-1098), indicated some potential preventive benefits of fish oil.

The investigators concluded that adding EPA to low-dose statin therapy may prevent major coronary events, especially nonfatal coronary events, in hypercholesterolaemic patients.

In addition, a subgroup analysis of the study, which involved a large group of primary-prevention patients, showed that statin-treated secondary-



prevention patients gained the most benefit from fish-oil supplements.

For more on the JELIS study, log on to www.thelancet.com.



Symposium Topics

- Making good use of the "golden hour": Emergency management of the infarcting patient
- Update on new insulin and diabetes therapy
- CT angiography/coronary calcium use in clinical decision making
- Update on abdominal aortic aneurysm endograft
- Percutaneous therapy for obstructive peripheral artery disease
- Advances in surgical approaches and prosthesis for aortic stenosis
- Safety issues around drug-eluting stents and late thrombosis
- Cardiac resynchronization therapy: Mechanical treatment of heart failure
- The work-up for middle-aged women with atypical chest pain

CME OPPORTUNITIES

Cardiovascular Symposium 2007: Breakthroughs in Diagnosis and Treatment

Saturday, September 22, 2007

Valley River Inn, Eugene, Oregon

Lunch speaker, **Alberto Salazar**: "Preparing Runners for the 2008 Olympics"

Friday, September 21, 7 - 9 p.m.

Reception and behind-the-scenes tour of the new OHVI facility at RiverBend opening August 10, 2008.

For more details, to download a brochure, or to register, log on to www.ohvi.org/cvsymposium2007.

For questions, contact Diane Mattoon at (541) 686-6857 or dmattoon@peacehealth.org

Focus on Women's Heart Health

The Women's Heart Program, a relatively new intervention at OHVI, focuses on heart health in women. Led by Phoebe Ashley, MD — cardiologist with Oregon Cardiology in Springfield, Oregon, and medical director for the Cardiovascular Wellness Program at OHVI — the program is part of a larger prevention effort at OHVI.

"The program takes a holistic, integrated wellness approach," explains Dr. Ashley. "It incorporates assessment, education, stress management, exercise, nutrition, and weight loss to help patients achieve the goal of risk-factor modification."

Basic screening, along with special tests for women, is central to the program.

Screening for coronary heart disease in women has taken on added importance in recent years. Studies, and anecdotal evidence, report that women present symptoms of coronary disease differently than men do. And, although women and men share many of the risks for coronary heart disease, women have some discrete factors.

Screening can be done also in the primary care physician's office, Dr. Ashley points out.

"A decline in functional status and exercise capacity, either observed by

the examining physician or reported by the patient, is a sign that further tests are necessary," she says. "Sometimes women misjudge their functional status. They recognize that they can't do as much as they could but often attribute it to something other than coronary disease."

Nurse educators, nutritionists, psychologists, cardiologists, and other specialists contribute to OHVI's Cardiovascular Wellness Program. Other medical professional are always welcome, Dr. Ashley says.

"I encourage primary care physicians to contact the OHVI with their questions and ideas on cardiovascular wellness and prevention," she adds.

For information on the OHVI Cardiovascular Wellness Program, call (541) 686-6376. To contact Dr. Ashley, call (541) 484-4332.

OHVI QUARTERLY

OHVI Quarterly is a publication from the Oregon Heart & Vascular Institute in affiliation with Sacred Heart Medical Center. Its purpose is to share information about the institute with physicians and allied health professionals. If you would like to receive OHVI Quarterly electronically or be added to or removed from this mailing list, please contact us in writing or via e-mail to ohviquarterly@ohvi.org.

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RESEARCH UPDATES

Rosiglitazone and Cardiovascular Effects

Results of a meta-analysis by Steven Nissen, MD, and Kathy Wolski, MPH, of the Cleveland Clinic, showed that rosiglitazone (Avandia), a thiazolidinedione used to treat type 2 diabetes, was associated with an increase in the risk of myocardial infarction and in death from cardiovascular causes. The researchers reported that even though their data were limited, they recommend "patients and providers consider the potential for serious adverse cardiovascular effects of treatment with rosiglitazone for type 2 diabetes."

The FDA issued a safety alert on Avandia on May 21, 2007, and will continue to update users. Avandia, manufactured by GlaxoSmithKline, is administered to more than 1 million diabetes patients in the United States.

For further information, go to NEJM online, <http://search.nejm.org/search?w=Avandia>.

Recommendations on Prevention of Infective Endocarditis

The American Heart Association has updated its recommendations for the prevention of infective endocarditis. A committee comprised of members of the American Dental Association, the Infectious Diseases Society of America, the American Academy of Pediatrics, and the AHA generated the following changes to the original 1997 recommendations:

- Prophylaxis is recommended for dental patients with cardiac conditions, particularly congenital heart disease, who would be at the highest risk of harmful outcome from infective endocarditis.
- For dental patients with underlying cardiac conditions, prophylaxis is recommended for dental procedures that involve palpation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa.
- Prophylaxis is not recommended solely for decreasing the risk of contracting infective endocarditis over a lifetime.
- Antibiotic prophylaxis is not recommended for patients who undergo a genitourinary or gastrointestinal tract procedure.

For details, go to

<http://circ.ahajournals.org/cgi/content/abstract/CI-RCULATIONAHA.106.183095v1:papetoc>.

Remote Monitoring Advances Care



Patients with implanted cardiac devices require special management, which includes frequent monitoring of the device as well as the patient's clinical condition. Patients at OHVI receive that care through an Internet-based remote monitoring system known as the Medtronic CareLink Network. Since 2003, some 400 patients have benefitted from the CareLink system at OHVI.

"Monitoring, in general, gives patients peace of mind," says Ramakota Reddy, MD, electrophysiologist with Oregon Cardiology and member of OHVI. "Remote monitoring makes patient follow-up much simpler for patients and doctors because it involves

less travel and clinic time."

The CareLink system comprises:

- The cardiac device: implantable cardioverter defibrillator, cardiac resynchronization therapy defibrillator, or biventricular pacemaker
- A portable monitor that plugs into a standard phone line or a wireless service that uses a designated radio-frequency band

- A secure, password-protected Internet storage site
 - A computer to download the data
- "Even though it's not a continuous monitoring system, it gives us a great deal of information when we need it about the functioning of the cardiac device and details on how the patient is doing clinically," says Dr. Reddy.

For instance, at any time, Dr. Reddy notes, he can find out how many hours of activity per day the patient has had, how fast the heart rate has been over the course of a day, or whether fluid has built up in the lungs.

"As needed, we can easily share this information with primary care physicians or others involved in patients' care management," he adds.

For more information on the Medtronic CareLink Network at OHVI, contact Dr. Reddy at (541) 484-4332 or the OHVI Pacemaker Clinic at (541) 484-4332.

A.W.S.E.M. Pearls

The Evolving Role of Nesiritide (Natrecor)

Nesiritide is the recombinant form of human B-type (brain) natriuretic peptide (BNP). Its amino acid sequence is identical to that of endogenous human BNP. During 2006, two meta-analyses raised the question of safely with nesiritide therapy, specifically an increased risk of renal dysfunction and mortality. In light of this information, Medicare discontinued reimbursement for serial outpatient infusions.

Two recently published studies reviewed a portion of the data.

Nesiritide Administered Perianesthesia (NAPA) in Patients Undergoing Cardiac Surgery

In this study, nesiritide, compared with placebo, was associated with small rises in serum creatinine, decreases in glomerular filtration rate, and greater urine output. In addition, there were suggestions of shorter hospital stay and possibly better survival over 6 months related to active therapy.

Follow-Up Serial Infusions of Nesiritide (FUSION-2) in Advanced Heart Failure

This trial showed no decreased renal function and no benefit in mortality. In treating acute decompensated heart failure (ADHF) patients, researchers concluded:

- Natrecor was not proven to decrease renal function.
- No improvement was seen in mortality or morbidity.
- Natrecor therapy is ongoing for hospitalized ADHF patients as deemed appropriate by their physician.

It is hoped that future clinical trials will address the concerns raised and provide a better understanding of the role of nesiritide in management of ADHF. The Heart Failure Center can answer any questions you may have regarding Natrecor therapy. Call the Heart Failure Center at (541)335-2789.