Thrombosis Risk in Heart Failure Often Overlooked

BY BRUCE JANCIN
Denver Bureau

CHICAGO — Deep vein thrombosis prophylaxis for hospitalized patients with heart failure is recommended in evidence-based guidelines but often omitted in practice.

"High medical acuity, an increased prevalence of venous thromboembolism [VTE] risk factors, and a low rate of VTE prophylaxis present a triple threat to heart failure patients," Dr. Gregory Piazza said at the annual meeting of the American College of Cardiology.

He studied 5,451 consecutive patients with ultrasound-confirmed deep vein thrombosis (DVT) in a prospective registry that included 685 patients with a history of heart failure. The heart failure patients were significantly more likely to have VTE risk factors, including acute infection, chronic obstructive pulmonary disease, and immobilization, and more comorbid conditions (see chart). Moreover, 48% of the heart failure patients had recently been hospitalized before their VTE, yet only 46% had received any VTE prophylaxis.

There is a low rate of VTE prophylaxis in hospitalized heart failure patients, despite recommendations of the American College of Chest Physicians and other groups.

"Heart failure patients [are] in a catch-22, where all of the comorbid conditions that give them such high medical acuity and put them at such high risk for VTE also put them at high risk for bleeding. So there's a tendency to shy away from pharmacologic prophylaxis with anticoagulants in these patients," said Dr. Piazza, a cardiovascular medicine fellow at Beth Israel Deaconess Medical Center, Boston. "And since heart failure patients have so many comorbid conditions, VTE prophylaxis might fall lower on the priority list of things physicians have to take care of [in] these patients."

Bringing about improvement in the situation will entail making providers more aware of the ACCP guidelines recommending VTE prophylaxis in hospitalized heart patients. In addition, cardiologists who consult on heart failure patients need to identify VTE prophylaxis on their list of recommendations, he continued.

In an interview, Dr. Piazza said future studies will establish whether it's safe and effective for hospitalized heart failure patients to continue on VTE prophylaxis for a while after being discharged, as is now routine for 4-6 weeks in orthopedic surgery patients.

The issue of VTE prophylaxis in heart failure patients is not going to go away, he noted. "Some studies show VTE risk increases as left ventricular ejection fraction declines, perhaps suggesting that our very advanced heart failure patients are at even higher risk. And as treatments for coronary disease and heart failure continue to improve, we're going to have many more patients in the lower ejection fraction ranges."

The study was sponsored by Sanofi Aventis. Dr. Piazza disclosed he has no financial ties with the company. ■

Prevalence of Key Factors in Patients With Venous Thromboembolism

	With heart failure (n = 685)	Without heart failure (n = 4,766)
Hypertension	72.0%	56.9%
Immobilization within 30 days	52.6%	42.4%
Diabetes	35.9%	22.1%
Acute infection	33.3%	27.0%
Stroke or other neurologic disease	32.7%	26.0%
Pneumonia or other acute lung disease	30.8%	14.8%
COPD	28.8%	12.1%
Acute coronary syndrome	11.1%	3.5%
Chronic kidney disease	8.2%	5.5%
Chronic venous disease	7.5%	3.8%

Note: All differences are statistically significant.
Source: Dr. Piazza

ELSEVIER GLOBAL MEDICAL NEWS

Device Uses Infrared Light for Identifying Vulnerable Plaques

BY KERRI WACHTER
Senior Writer

A new imaging system recently cleared for marketing by the Food and Drug Administration offers cardiologists help in assessing coronary artery plaque content to determine if the deposit is vulnerable to rupture.

Plaques containing large lipid cores have been associated with plaque rupture and thrombosis in patients with coronary artery disease. The ability to assess the makeup of coronary artery plaques and identify those patients at greatest risk of plaque rupture and subsequent heart attack has become something of a holy grail for cardiology.

The LipiScan near-infrared catheter imaging system (InfraReDx Inc.) "is the first device that can help assess the chemical makeup of coronary artery plaques and help physicians identify those plaques with lipid cores," Dr. Daniel Schultz, director of the FDA's Center for Devices and Radiological Health, said in a press release.

The InfraReDx system relies on near-infrared spectroscopy (NIRS), which uses the near-infrared region of the electromagnetic spectrum (about 800-2,500 nm) to determine the chemical makeup of a plaque. NIR radiation can typically penetrate much further into a sample than even mid-infrared waves, making the technique useful in probing bulk material with little or no sample preparation.

The technique involves targeting a material with electromagnetic radiation over the NIR range. The amount of energy absorbed by material at different wavelengths results in a spectrum that serves as a unique fingerprint for a specific compound. Human tissues contain a variety of substances whose absorption spectra at NIR wavelengths are well defined.

The device is cleared for use by physicians who are evaluating patients with symptoms of coronary heart disease during coronary angiography.

"It's an excellent technology to identify lipid-rich plaques and vulnerable plaques in the coronary arterial wall," said Dr. George Beller, professor of internal medicine and interim chief of the division of cardiovascular medicine at the University of Virginia, Charlottesville.

The technology has the potential to alter patient management. "The next question is whether it will prove to be a clinically useful tool," said Dr. Beller.

The Spectroscopic Assessment of Coronary Lipid (SPECTACL) study, aimed at showing that spectra obtained in the coronaries of 125 patients with stable and unstable coronary artery disease are similar to postmortem specimens, is still ongoing. The trial's secondary end point is to determine the presence of lipid-rich plaques in the coronary arteries of these patients.

Although NIRS shows promise, research continues on the use of other imaging modalities to identify vulnerable plaques.

"The [NIRS] technique may have advantages over intravascular ultrasound [IVUS] or virtual histology IVUS, but that remains to be seen because that technique is also being evaluated to distinguish between predominantly fibrous plaques and those which have predominantly necrotic cores that are lipid laden," Dr. Beller.

And the search continues for noninvasive means of evaluating plaque vulnerability. "This technology doesn't preclude the major goal of identifying plaques noninvasively, with nuclear or MR or CT techniques. That is still a very high priority," said Dr. Beller. ■

Invasive NSTEMI Treatment May Harm Low-Risk Women

BY MARY ANN MOON
Contributing Writer

Compared with conservative management, invasive treatment of unstable angina with non–ST-segment elevation myocardial infarction does not benefit women who show no elevation of biomarkers of necrosis, according to a meta-analysis of eight clinical trials.

Moreover, invasive therapy potentially increases the risk of death or subsequent MI in this group of low-risk women with NSTEMI, reported Dr. Michelle O'Donoghue of Brigham and Women's Hospital, Boston, and her associates.

In contrast, invasive therapy does benefit women who have unstable angina with NSTEMI who show elevated biomarkers of necrosis, and their benefit is comparable with that of men with NSTEMI, the meta-analysis shows.

These findings support the recently updated guidelines from the American College of Cardiology and the American Heart Association "that now recommend a conservative strategy be used in low-risk women with NSTE ACS [non–ST-elevation acute coronary syndromes]," wrote the authors.

The researchers undertook a meta-analysis of the issue because "individual trials have not been large enough to explore outcomes reliably within subgroups," and previous analyses have yielded disparate results. The meta-analysis included 10,412 patients randomly assigned to receive conservative or invasive treatment for non–ST-elevation ACS.

"Among women with an elevated cardiac biomarker, an invasive strategy significantly decreased the odds of death, MI, or rehospitalization with ACS by 33%, which was comparable with the benefit observed overall in men," the authors said (JAMA 2008;300:71-80).

"In contrast, women without biomarker elevation did not appear to have a significant benefit from an invasive strategy and had a nonsignificant higher odds of death or MI compared with those treated conservatively," they noted.

For both men and women, those randomly assigned to an invasive strategy had a higher rate of death or MI before hospital discharge than did those randomly assigned to conservative management, but after discharge, showed a significant reduction in death or MI rates.

"Women are significantly less likely than men to have obstructive CAD [coronary artery disease] at the time of angiography, despite a clinical presentation consistent with NSTE ACS. Overall, 24% of women randomized to an invasive strategy had no evidence of significant epicardial CAD at angiography, vs. only 8% of men," the authors wrote.

The results "emphasize the need for larger prospective trials to specifically examine the benefit of an invasive strategy in women, both overall and within high-risk subgroups," the investigators noted. ■