

VTE Rates Curtailed

Protocol from page 1

were reduced from 137 cases and 158 cases in the first 2 years to 93 cases in the third.

In all cases, the differences in comparisons of the first 2 years of data and the third year of data were statistically significant based on chi-square analysis (*P* less than .05). VTEs were documented with digital imaging. Analysis of administrative data and chart review showed no increase in heparin-induced thrombocytopenia or bleeding events.

There was no difference in the number of community-acquired VTE cases during the course of the study.

The study, which was also presented as a poster at the meeting, was led by Dr. Greg Maynard, chief of the division of hospital medicine at UCSD. The VTE protocol developed by Dr. Maynard and his team, which included Dr. Morris, won the Society of Hospital Medicine's first

Team Approaches in Quality Improvement Award. Their VTE protocol has now been implemented at more than 25 sites, according to the society.

During the first 2 years of their study, the investigators built agreement and support for the VTE risk assessment protocol at their institution. Physicians were asked to evaluate their patients for a series of VTE risk factors that were used to classify patients as having a low, medium, or high risk for VTE. For each level of risk, optimal prophylaxis options were suggested. Physicians were then asked to document contraindications to prophylaxis and whether they prescribed prophylaxis.

The risk-assessment model was integrated into a protocol and computerized provider order entry model in the third year of the study. Each level of risk was linked to optimal options for prophylaxis. The order set was actively monitored, and physicians who did not adhere to the protocol were identified and asked to complete the evaluation.

The protocol was tested by five observers for interobserver agreement in 150 patients. The order set also was adjusted based on active monitoring. Throughout the study, random sample audits were performed among inpatients who were at the medical center for more than 48 hours.

The percentage of patients who were on adequate VTE prevention regimens was tracked and rose from 67% at the start of the study to 98% in the most recent 6 months of the study.

"The study was about diligence in evaluating patients," and not about the selection of treatments or agents, Dr. Morris said. There is a range of acceptable pharmacologic choices, with no single agent remarkably superior to another. The important point is to make a conscious decision about prophylaxis, based on an evaluation of risk factors.

Dr. Morris had no disclosures; Dr. Maynard has received speaker honoraria from Sanofi-Aventis. ■

VTE Prophylaxis Underused In Heart Failure Patients

BY BRUCE JANCIN
Denver Bureau

CHICAGO — Deep vein thrombosis prophylaxis for hospitalized patients with heart failure is recommended in evidence-based guidelines but frequently 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 they had more comorbid medical conditions. (See box.) Moreover, 48% of the heart failure patients had been hospitalized recently prior to their VTE. Yet only 46% of heart failure patients had received any VTE prophylaxis.

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

In heart failure patients, "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. "Also, I think that because 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."

Bringing about improvement in the situation will entail making clinicians 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 home, as is now routine for 4-6 weeks in orthopedic surgery patients.

This issue of VTE prophylaxis in heart failure patients is not going to go away, the physician stressed.

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

Sleep-Disordered Breathing More Likely in Obese Inpatients

BY LEANNE SULLIVAN
Associate Editor

Sleep-disordered breathing in hospitalized patients is more common in those who are obese and those who have heart failure.

"There may be more [sleep-disordered breathing] in hospitalized patients than has been recognized," concluded Dr. Kim Goring and Dr. Nancy Collop, of Johns Hopkins University Hospital and Bayview Medical Center, both in Baltimore.

"There is a need for a higher clinical suspicion, especially in patients with underlying cardiopulmonary disease," the researchers said.

4%, or an arousal from sleep). An apnea-hypopnea index (AHI) greater than 10 was classified as sleep-disordered breathing (*J. Clin. Sleep Med.* 2008; 4:105-10).

Of the 94 patients, 77% had sleep-disordered breathing, and of those with the condition, 95% had obstructive sleep apnea.

"This high prevalence of [sleep-disordered breathing] is most likely due to the overwhelming influence of obesity," Dr. Goring and Dr. Collop wrote. They found "a statistically significant increase in the [odds ratio] of sleep apnea with every unit increase in BMI" after adjusting for all other variables, with the vast majority of the study patients with a BMI over 40 positive for sleep apnea.

Researchers found 'a statistically significant increase in the [odds ratio] of sleep apnea with every unit increase in BMI' after adjusting for other variables.

In a chart review of 94 inpatients referred for polysomnography at two tertiary care facilities, a body mass index (BMI) of 40 kg/m² or greater was associated with a statistically significant increase in the risk of sleep apnea (odds ratio, 9.81), compared with a normal BMI of 18-24, they reported.

The patients (51 women, 43 men) were admitted to Johns Hopkins or Bayview between January 2003 and September 2004 for acute illnesses, mostly chronic obstructive pulmonary disease or heart failure; the next most common diagnoses were interstitial lung disease, acute pulmonary embolism, and pulmonary hypertension.

The mean age of the participants was 54 years (range, 20-82 years), and their mean BMI was 40 (range, 18-70). Of the total sample, 86% were obese (BMI greater than 30), the researchers reported.

The patients underwent overnight polysomnography to detect sleep apnea (defined as complete or almost complete cessation of airflow—less than 25% of baseline—lasting 10 seconds or longer) and hypopnea (defined as a fall in oxygen saturation of at least

Weight has been shown to strongly predict sleep-disordered breathing. In this study, "there was a probable bias on the part of the referring physicians in targeting obese patients for inpatient polysomnography, given that 86% of those referred were obese."

Although 60% of normal-weight patients with interstitial lung disease, neuromuscular disease, or acute pulmonary embolism had sleep-disordered breathing, it was difficult to draw statistically significant conclusions because of the small numbers of subjects, they wrote.

The association between sleep apnea and heart failure was significant, but the investigators cited difficulty in assessing the effect of obesity on the likelihood of sleep-disordered breathing in patients with heart failure.

No link was found between sleep apnea and any of the other acute illnesses in these patients.

The study was supported by grants from the National Institutes of Health. Neither researcher had a financial conflict of interest. ■

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