Electronic Alerts Curb VTE in High-Risk Patients

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NEW ORLEANS — An automated electronic alert program aimed at physicians responsible for high-risk patients not receiving prophylaxis against venous thromboembolism resulted in a substantial reduction in thromboembolic events in a large randomized trial, Nils Kucher, M.D., said at the annual scientific sessions of the American Heart Association.

"Our results suggest that hospitals with adequate information system resources should consider implementation of electronic alerts to increase the awareness of venous thromboembolism [VTE] risk, improve utilization of prophylaxis, and reduce rates of leg deep vein thrombosis and pulmonary embolism," said Dr. Kucher of Brigham and Women's Hospital, Boston.

Studies have shown that mechanical as well as pharmacologic prophylaxis against VTE is underutilized in at-risk patients.

In an effort to rectify this situation, Dr. Kucher and coworkers developed a computer program to electronically search the medical records of in-hospital patients and identify those at increased risk for VTE who weren't receiving prophylaxis.

The program sent an e-mail alert to the physician in charge of the patient's care that mentioned the full range of prophylactic options, such as compression stockings, low-molecular-weight heparin, unfractionated heparin, and warfarin. The physician had to acknowledge the alert but could then choose to order or withhold prophylaxis.

The randomized trial involved 2,506 consecutive hospitalized patients at high risk for VTE who were not on prophylaxis. Physicians responsible for those in the intervention arm were issued an electronic alert. The alert was withheld from physicians caring for control patients.

Use of the computerized electronic alert program resulted in more than a doubling of orders for prophylaxis, from 14.5% in the control group to 33.5% in the intervention group.

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The primary end point in the study was the overall VTE rate at 90 days, which was 4.9% in the intervention arm and 8.2% among the controls.

This translated into a highly significant 41% relative risk reduction. Pulmonary embolism was reduced by 60% in the intervention group, while proximal leg deep venous thromboembolism was decreased by 53%.

These benefits were achieved without an increase in major hemorrhage, which occurred in 1.5% of patients in both the intervention and control arms; 90-day mortality was 22% in each group as well.

The computer program identified patients as being at increased risk for VTE by using a scoring system that assigned 3 points each for prior VTE, cancer, or hypercoagulability; 2 points each for major surgery or a bed-rest order; and 1 point each for acute trauma, obesity, hormone therapy, or use of an OC. Patients with 4 or more points were defined as high-risk.

The reduction in VTE events seen with use of the electronic alert system was equally robust in patients with or without cancer, in both young and elderly patients, in men and women, and in those with or without a history of VTE.

Venous thromboembolism is said to be the No. 1 cause of unexpected in-hospital death. The annual incidence of VTE is 200,000-600,000 cases, resulting in up to 200,000 deaths. ■

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'I'm … worried that they are going to get "Pete's" isotretinoin, and it is not even going to have isotretinoin in it.'

Dr. Hilary Baldwin, on the FDA's new restrictions on prescribing of isotretinoin, p. 22