Drug Monitor

A Risk-Evaluating Tool for Anticoagulation Treatment

$CHADS_2$ is a simple measure for predicting the risk of stroke in patients with atrial fibrillation (AF) who are not being treated with anticoagulants (the higher the score, the greater the risk). Its utility for patients on anticoagulants wasn't known. But researchers from the Randomized Evaluation of Long-term Anticoagulation Therapy (RE-LY) trial, who conducted a subgroup analysis of data from 18,112 patients, say $CHADS_2$ scores could help with those patients, too.

The $CHADS_2$ score assigns 1 point each for congestive heart failure, hypertension, age 75 or older, and diabetes, and 2 points for a history of stroke or transient ischemic attack. International guidelines recommend warfarin for patients with a $CHADS_2$ score of 2 or higher; U.S. guidelines suggest either warfarin or aspirin for patients with a score of 1 because of concerns about bleeding risks outweighing benefits of treatment. In this analysis, patients across all $CHADS_2$ scores were eligible: 5,775 patients had scores of 0 to 1, 6,455 had scores of 2, and 5,882 had scores of 3 or higher. The study compared 2 blinded doses of dabigatran (150 mg and 110 mg bid) with open-label warfarin. The primary outcome was stroke or systemic embolism; other outcomes were major bleeding, intracranial hemorrhage, vascular death, and death.

In the overall cohort, the rate of stroke or systemic embolism increased for each 1-point increase in the $CHADS_2$ score. A score of 6 carried 5 times the risk of a score of 0 (5.40% per year vs 0.53%). By comparison, in the original study of patients with AF who were not receiving oral anticoagulants, the increase was 1.5-fold per point.

The researchers found "an almost linear increase" in the annual rate of major bleeding for each 1-point increase in the $CHADS_2$ score: from 1.60% per year in the lowest-score group to 5.40% in the highest-score group. Higher $CHADS_2$ scores were also associated with higher risks of major bleeding, intracranial bleeding, and death. In all treatment groups, the researchers found a strong relationship between $CHADS_2$ risk groups and vascular and total mortality.

Increasing $CHADS_2$ scores were associated with increased events rates in all 3 study treatment groups. However, dabigatran 150 mg bid showed a consistent reduction in stroke or systemic embolism, compared with warfarin. And both doses of dabigatran lowered rates of intracranial bleeding compared with warfarin.

Source: *Ann Intern Med.* 2011;155(10):660-667.

When Is the Right Time to Give Antiplatelet Drugs?

Whether antiplatelet agents (AAs) are given to older patients before or after hospitalization for acute stroke can make a difference in survival, say researchers from the University of Ferrara, Ferrara, Italy. In their retrospective study, researchers found AAs conferred no advantages against short-term mortality in patients taking such drugs before hospitalization. In fact, the researchers found a trend toward higher stroke severity and higher mortality. But when the drugs were given after hospitalization for stroke, they clearly reduced the mortality rate.

The researchers looked at data on 439 patients aged > 65 years with severe acute ischemic stroke (AIS). Of those, 115 patients were taking AAs before being admitted to the hospital; 195 patients were treated with AAs after leaving the hospital.

Nearly one-third (28%) of the study sample died within 30 days. Prior use of AAs was not associated with reduction in mortality. On the other hand, in-hospital treatment with AAs was generally associated with a reduction in short-term mortality. After adjusting for multiple factors, such as age, gender, blood glucose levels, congestive heart failure, and previous stroke, the researchers found the reduced risk of short-term mortality remained but was significant only in patients not previously treated with AAs.

Source: *Arch Gerontol Geriatr.* 2012;54(1):214-217. doi:10.1016/j.archger.2011.02.004.

From Hospital to Nursing Home—A Ripe Time for Medication Errors

Transferring patients from their home or hospital to a nursing home can increase medication errors, according to University of North Carolina researchers.

When researchers analyzed medication error incidents reported by North Carolina nursing homes to the Medication Error Quality Initiative, they found that 2,919 (11%) of 27,759 incidents involved a transfer to a nursing home.

More than half the errors began during the documentation phase of medication use. Nearly 2 in 5 of all medication errors were in dosing. Notably, 57% were repeat errors, compared with errors not involved in a transfer (35%). Warfarin and insulin topped the list of drugs involved

in both transfer- and non–transfer-related errors. Those 2 drugs, along with lorazepam, hydrocodone, oxycodone, and furosemide, accounted for almost one-quarter of errors not occurring in a transfer and 19% of those occurring in a transfer.

The researchers note that patients are particularly vulnerable to medication errors during transfers when care is poorly coordinated across settings. "Inadequate information exchange" between both facilities involved in the transfer, for instance, may pose a higher risk for patients taking warfarin and insulin, which require frequent dose adjustments. Other miscommunications involved name confusion; on their "most commonly involved drug" list, the researchers observed drugs with similar names, such as alprazolam and lorazepam, and hydrocodone and oxycodone.

Moreover, the transfer-related errors were found to have higher odds of patient harm compared with errors in nontransfers (odds ratio [OR]) = 1.85). Repeat errors had higher odds of patient harm compared with no-repeat errors (OR = 2.35).

Tools for more efficient and effective communication are needed, the researchers urge. They cite, for example, a study in which, before patients were discharged, clinical pharmacists reviewed and gave feedback to the physician on the discharge summary using a structured checklist. The intervention group had 45% fewer medication errors compared with a control group. The authors of the current study also recommend medication reconciliation, which they say in one study reduced medication discrepancies from 15% to 2% of transfers. Finally, they suggest having medications on hand in nursing homes to ensure continuity of care; this would also entail having a system in which patient information is transferred to the nursing home before the patient actually arrives.

Source: *Am J Geriatr Pharmacother.* 2011;9(6):413-422. doi:10.1016/j.amjopharm.2011.10.005.

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