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after excluding methotrexate users or restricting the analysis to patients treated with oral retinoids. It didn't have any significant impact upon the results. Neither did exclusion of psoriatic arthritis patients.

Elsewhere at the conference, Daniel B. Shin, Dr. Azfar's coinvestigator, presented an analysis of the rates of cardiovascular, cerebrovascular, and peripheral vascular disease in the same study population. The rationale for this additional analysis was that MI and stroke are acute thrombotic events, and it would be

informative to see if psoriasis is also associated with increased rates of chronic atherosclerotic diseases as reflected in the appropriate diagnostic codes, as well as procedure codes for coronary revascularization, carotid endarterectomy, and peripheral vascular intervention.

This indeed proved to be the case. As for stroke, the associated risks generally were greater with severe than with mild psoriasis, noted Mr. Shin, a medical student at the university. (See chart, page 14.)

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## 'Bridging' With Enoxaparin Or Heparin Appears Risky

BY MARY ANN MOON

Contributing Writer

For patients with cardioembolic stroke, "bridging" therapy with either enoxaparin or heparin until long-term warfarin treatment takes effect raised the risk of serious bleeding, compared with immediately commencing warfarin, a study shows.

In contrast, initiating warfarin shortly af-

ter cardioembolic stroke was found to be safe in this single-center retrospective review of 204 patients, according to Dr. Hen Halleivi of the University of Texas at Houston and associates (Arch. Neurol. 2008 July 14 [doi:10.1001/archneur.65.9.noc70105]).

Because this study was retrospective and nonrandomized, the results await validation; they should be viewed as "hypothesis-generating," and should be interpreted with caution, they noted.

Currently no consensus exists on when and how to institute long-term anticoagulation for secondary stroke prevention in these patients. "Bridging" with enoxaparin or heparin is common practice even though it is not endorsed in published guidelines, the investigators said.

Many clinicians also defer initiating warfarin for fear of precipitating a hypercoagulable state, which "may occur when warfarin is initiated without heparin and may lead to abnormal clotting and skin necrosis," they said. However, this is an uncommon occurrence in clinical practice, and is usually associated with protein C deficiency, they added.

In this study, all cases of cardioembolic stroke between April 2004 and July 2006 were reviewed. The decisions of whether to use bridging and, if so, whether to use enoxaparin or heparin were "based on clinical judgment and personal preference of the treating physician."

Thirty-five patients were given warfarin immediately, without any bridging. Forty-four received heparin bridging, and 29 received enoxaparin bridging. Another 8 patients received no anticoagulation therapy, and 88 received aspirin only.

The patients who received no anticoagulation or only aspirin fared poorly and were 12 times more likely to experience stroke progression than those in the other treatment groups.

Heparin bridging was significantly more likely to cause systemic bleeding, and enoxaparin bridging was significantly more likely to cause grade 2 parenchymal hematoma, compared with immediate warfarin.

There were no episodes of skin necrosis in the warfarin group, supporting the observation that this complication is very uncommon in clinical practice and that bridging specifically to prevent skin necrosis is unwarranted, Dr. Halleivi and his associates said.

Moreover, there was a clustering of cases of late, symptomatic hemorrhagic transformation "composing an alarming 10%" of the enoxaparin group, with no cases in the warfarin and heparin groups. This suggests a pathophysiologic link between enoxaparin and hemorrhagic transformation, they added.

"Warfarin treatment appears to be safe and can be started at any point during the hospital stay, along with deep vein thrombosis prophylaxis. [In contrast], bridging with a full dose of enoxaparin or heparin may carry a high risk of intracranial and systemic bleeding," the researchers said. ■

### Hospital interventions to help reduce CV risk

#### ASSESS BG levels to help improve outcomes

Data supporting the impact of elevated BG on CV outcomes are compelling. In a review of 409 cardiac surgery patients, Gandhi et al found that a rise of only 20 mg/dL in mean postoperative BG level correlated with a 30% increase in adverse events, including death, up to 30 days postsurgery.<sup>11</sup>

Krinsley found a relationship between levels of inpatient hyperglycemia considered acceptable and mortality.<sup>2</sup> In fact, at a BG level of 160 mg/dL, he observed an ~3-fold increase in mortality compared with 80 mg/dL.<sup>2</sup> In another study by Zerr et al, uncontrolled hyperglycemia was associated with an increased rate of postoperative deep sternal wound infections in 1585 cardiac surgery patients.<sup>12</sup>

These data underscore the need to assess BG levels to help identify inpatient hyperglycemia.

#### IDENTIFY high-risk patients using an A1C test

Despite improvements in disease management, 56% of patients with diabetes on prior antidiabetic therapy had uncontrolled A1C levels, according to NHANES data.<sup>13</sup> This demonstrates the prevalence of poor glycemic control and the need to order A1C tests in hospitalized CV patients.<sup>10</sup>

In patients with acute myocardial infarction (AMI) and no prior diagnosis of diabetes, impaired glucose tolerance (IGT) and new-onset diabetes are common. The first pie graph shows that newly diagnosed diabetes or IGT was found in 2 out of 3 AMI patients.<sup>14</sup>

The second pie graph illustrates that 65% of these patients still met diagnostic criteria for diabetes or IGT 3 months postdischarge, when acute stress, left ventricular dysfunction, and inflammation should have subsided.<sup>14</sup>

### SECOND IN A 3-PART SERIES ON DIABETES AND CARDIOVASCULAR CARE

#### Large epidemiologic studies correlate A1C control with CV outcomes

Data suggest that A1C elevations have a predictive relationship with negative CV outcomes. In a prospective 3-year study of 10,232 patients, each 1% increase in A1C was associated with a 20% to 30% increase in coronary and CV complications.<sup>15</sup>

Conversely, relative risk analysis in UKPDS showed that each 1% decrease in A1C significantly reduced CV disease events by up to 16%.<sup>16</sup> A third epidemiologic, 6-year study of 2820 subjects confirmed that A1C testing was predictive of diabetes, whether used alone or together with fasting plasma glucose (FPG) results.<sup>17</sup> Taken together, these studies highlight the value of A1C testing to help identify high-risk CV inpatients.<sup>16,17</sup>

#### A1C—a practical approach

To diagnose outpatients with diabetes, the ADA and AACE urge consecutive testing of FPG over 2 days, with an oral glucose tolerance test to confirm results. Since this method requires second-day evaluation of patients who can drink fluids, it may be unrealistic for CV inpatients.<sup>8,9</sup>

For these reasons, A1C testing offers a more practical way for CV care providers to identify previously undetected or uncontrolled diabetes in their inpatients.<sup>8,9,18</sup>

A1C results also provide a snapshot of the patient's BG control over the past 2 to 3 months. This long-term view may be especially valuable in determining the patient's preadmission BG control.<sup>8,19</sup>

As with any lab test, A1C results should be evaluated in the context of a patient's overall medical history and status. Refer patients with special considerations to the diabetes team.<sup>8</sup>

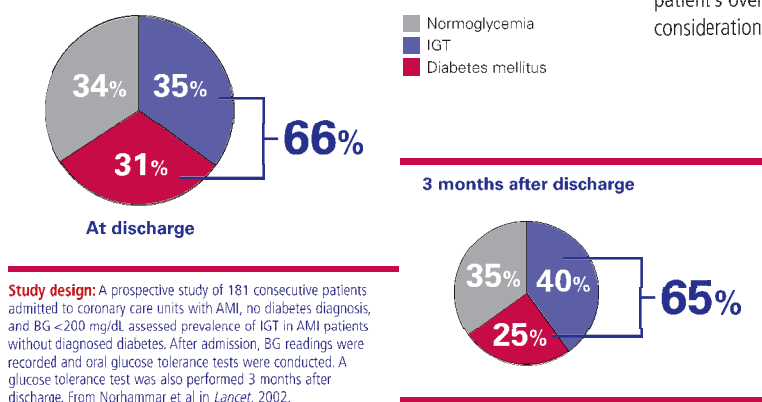
#### REFER high-risk patients to hospital diabetes team

For CV inpatients with newly diagnosed or poorly controlled diabetes, referral to a diabetes team for discharge planning may help improve patients' BG control at home.<sup>20</sup>

#### On the horizon

Ongoing trials may further clarify the association between uncontrolled or undetected diabetes and CV risk. Results of some of these studies are expected in the next 2 years.<sup>21</sup> Stay tuned.

#### PREVALENCE OF IGT AND NEWLY DETECTED DIABETES IN AMI PATIENTS<sup>14</sup>



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