Desmoteplase Extends Stroke Treatment Window

BY KERRI WACHTER
Senior Writer

BALTIMORE — The investigational drug desmoteplase combined with imaging to identify appropriate patients could push the treatment opening beyond 3 hours for some patients with acute ischemic stroke, according to Dr. Anthony Furlan, section head of stroke and neurologic intensive care at Cleveland Clinic.

“Even though intravenous tissue plasminogen activator has been an enormous breakthrough in stroke therapy, 95% of patients don’t get treated with it,” Dr. Furlan said at the annual neurocritical care and stroke conference sponsored by Cleveland Clinic. “We’re not going to be treating patients with a 3-hour drug. An estimated 80% of stroke patients don’t get to the hospital within the first 3 hours after onset.”

Animal trials have shown that desmoteplase—a plasminogen activator derived from viperine by saliva—may be a better treatment option for acute stroke than is tissue plasminogen activator (TPA) for several reasons. Desmoteplase is not neurotoxic, and it does not activate β-amyloid, unlike TPA. In addition, desmoteplase has a long half-life, which allows for bolus injection. “That’s useful in the first 3 hours after symptom onset,” said Dr. Furlan. In animal models, desmoteplase also has been associated with fewer hemorrhages than has TPA.

Desmoteplase was evaluated in two acute stroke thrombolysis trials to select patients for treatment after 3 hours based on perfusion imaging, Dr. Furlan said. For desmoteplase, the principal investigator for the DEDAS trial.

Dr. Furlan noted that desmoteplase has a long half-life, which allows for bolus injection. “That’s useful in the first 3 hours after symptom onset,” said Dr. Furlan. In animal models, desmoteplase also has been associated with fewer hemorrhages than has TPA.

For patients with target mismatches—malignant mismatch—that was associated with severe intracranial hemorrhage and poor outcome after reperfusion. Malignant mismatch was defined as a defusion lesion greater than 100 cc in volume and/or a perfusion lesion defined as a perfusion-diffusion mismatch. Right middle cerebral artery occlusion is on baseline angiogram (top); the defect resolved 28 hours after IV desmoteplase (bottom).