Clinical trial shows broader benefits of acute-stroke therapy
iSchemaView RAPID software plays central role in success

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‘Clinical success’

DEFUSE 3, a 38-center clinical trial sponsored by the National Institutes of Health and led by Stanford researchers, has shown that far more people than previously thought can benefit from existing emergency treatments for acute ischemic stroke.

The improved outcomes were achieved through the use of an automated software package called RAPID developed by iSchemaView and used under the study’s IRB approval to identify patients most likely to benefit from a surgical clot-removal procedure called thrombectomy even if they arrived at treatment centers well after the previously assumed window of therapeutic efficacy.

“Half of all patients treated between six and 16 hours after the onset of their symptoms had a complete, or nearly complete, recovery from their stroke,” said the trial’s principal investigator, Gregory Albers, MD, who is the Coyote Foundation Endowed Professor of Neurology and Neurological Science and director of the Stanford Stroke Center. “The software provided by iSchemaView was a critical element to the success of the DEFUSE 3 study. Previous studies indicated that treatment benefit was lost after 6 or 7 hours, but the RAPID
software was able to identify a large group of patients who had substantial benefits even if treated more than 12 hours after the onset of stroke symptoms.”

‘Astounding results’

“These astounding results will have an immediate impact in the clinic and will help us save many lives,” Walter Koroshetz, MD, director of the National Institute of Neurological Disorders and Stroke, said in an NIH news release. “I really cannot overstate the size of this effect. The study shows that one out of three patients are saved from the devastation of a stroke, and can walk out of the hospital, completely recovered.”

Results of the trial will be published online Jan. 24 in *The New England Journal of Medicine* to coincide with Albers’ presentation of the results in Los Angeles at the American Heart Association’s International Stroke Conference.

The AHA is expected to immediately issue new acute-stroke treatment guidelines that reflect what the study found: A substantial increase in thrombectomy’s therapeutic window of time.

**About iSchemaViewRAPID**

iSchemaViewRAPID ([www.i-rapid.com](http://www.i-rapid.com)) is a fully automated image processing platform. RAPID was developed to provide accurate and reliable perfusion and diffusion imaging processing that could be performed on any CT or MRI scanner. RAPID was initially validated in the NIH-sponsored DEFUSE 2 study, published in 2012. Stanford University sold the rights to RAPID to iSchemaView in 2012. FDA clearance of RAPID was granted in 2013. Under the studies’ IRB approvals, RAPID was shown to identify patients who benefit from endovascular stroke therapy in the SWIFT-PRIME and EXTEND-IA trials in 2015. Patients treated in these trials had the highest rates of favorable clinical outcomes following endovascular therapy ever achieved.