Clinical

MR angiography spots major carotid artery stenoses

Last Updated: 2008-08-22 17:49:42 -0400 (Reuters Health)

NEW YORK (Reuters Health) - Magnetic resonance angiography (MRA) using either time-of-flight or contrast-enhanced approaches is an effective means of diagnosing substantial stenotic and occlusive internal carotid artery disease, according to the results of a meta-analysis.

"We found that the current change to the use of MRA to detect high-grade internal carotid artery stenoses and occlusions appears justified," senior investigator Dr. Alison E. Baird told Reuters Health. Contrast-enhanced MRA, she added, has the edge over time-of-flight MRA.

Dr. Baird of SUNY Downstate Medical Center, Brooklyn, New York and colleagues examined data from 58 studies, 5 of which compared time-of-flight and contrast-enhanced in the same patients.

The team determined that the overall sensitivity of time-of-flight MRA was 91.2% and the specificity was 88.3%. Corresponding values of contrast-enhanced MRA were 94.6% and 91.9%, researchers report in the August issue of Stroke.

For the detection of internal carotid artery occlusions, time-of-flight had a sensitivity of 94.5% and a specificity of 99.3%. For contrast-enhanced, these values were 99.4% and 99.6%.

However, for moderately severe stenoses ranging from 50% to 69%, time-of-flight had a sensitivity of only 37.9% and a specificity of 92.1%. With contrast-enhanced, sensitivity was 65.9% and specificity was 93.5%.

"The accuracy of MRA has yet to be proven for the detection of moderate-grade stenoses," continued Dr. Baird. "It is recommended that a second noninvasive study be obtained to confirm the grade of internal carotid artery disease at this time before treatment decisions are made."

"A complimentary diagnostic tool such as ultrasound or computed tomography angiography or digital subtraction angiography," she stressed, "is necessary in these cases for decision-making regarding potential carotid endarterectomy or stenting."

Stroke 2008;39:2237-2248.