RSNA®
Radiological Society of North America

820 Jorie Blvd
Oak Brook, IL 60523
TEL 1-630-571-2670
FAX 1-630-571-7837
RSNA.org

NEWS

RSNA Press Release

New Ultrafast MRI Benefits Stroke Patients

Released: December 1, 2003

Media Contacts:

Heather Babiar or Maureen Morley **(630) 590-7762**

Heather Babiar
(630) 590-7738
hbabiar@rsna.org

Maureen Morley
(630) 590-7754
mmorley@rsna.org

At A Glance

- MRI is a more accurate diagnostic tool for stroke than CT.
- Multi-channel, phased-array brain coils have minimized MRI time for stroke patients.
- The three-minute protocol is as good as, if not better than, conventional 20-minute MRI procedures.

CHICAGO - A new magnetic resonance imaging (MRI) technology reduces brain-imaging time from 20 minutes to three minutes while maintaining accuracy and decreasing patient discomfort, according to early research results presented at the 89th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA).

"The three-minute head scan is as good as the 20-minute version, and in some instances better because stroke patients may be distressed and move around," said study co-author, Jonathan H. Gillard, M.D. "Pictures taken in a shorter period of time are less susceptible to degradation from the patient moving during the scan." Dr. Gillard is a lecturer and honorary consultant neuroradiologist at Addenbrooke's Hospital, University of Cambridge in England, where the study is ongoing.

To be successful, treatment with intravenous thrombolytic (clot-busting) drugs must typically begin within three hours after stroke onset. Interventional radiology has increased the critical treatment window through the use of catheters that deliver the drugs directly to the clot in the brain, but every minute counts. Therefore, it is essential that stroke patients be diagnosed quickly, so that treatment can begin. Computed tomography (CT) is the usual method for diagnosing stroke, because it only takes a few minutes, compared to 20 minutes with conventional MRI. However, unlike MRI, CT does not identify the parts of the brain that are at risk of damage.

The researchers studied 24 patients with clinical diagnosis of probable acute middle cerebral artery stroke to compare images obtained with conventional MRI and with the three-minute protocol using new multi-channel, phased-array brain coils, which can produce the same number of images in a fraction of the time. Overall, the two protocols were comparable in image quality and diagnostic results. However, two of the three-minute protocol images were of better quality than the conventional images, because the faster imaging eliminated complications from patient movement. The three-minute protocol also correctly identified

Copyright © 2015 Radiological Society of North America (RSNA)

blockage for treatment with clot-busting drugs.

"The conventional 20-minute MRI may be distressing for patients who are already agitated by stroke symptoms, such as a weak arm or leg or a speech deficit," Dr. Gillard said. "Despite the machine noise and possible claustrophobia, agitated patients are more likely to remain still during a quick procedure than a lengthy one."

Stroke is the third leading cause of death in the United States, killing nearly 160,000 Americans annually, according to the National Center for Health Statistics. The National Institute of Neurologic Disorders and Stroke reports that more than 700,000 Americans have a new or recurrent stroke each year.

"The three-minute protocol is a tremendous technological advance that positively impacts patients," Dr. Gillard said. "These multi-channel, phased-array brain coils were all but inconceivable a few years ago."

Co-authors of the paper being presented by Dr. Gillard are Jean M. U-King-Im, M.R.C.S., Rikin A. Trivedi, M.R.C.P., M.R.C.S., Martin J. Graves, M.Sc., Kirsty Harkness, M.R.C.P., and Hayley Eales.

RSNA is an association of more than 35,000 radiologists, radiation oncologists and related scientists committed to promoting excellence in radiology through education and by fostering research, with the ultimate goal of improving patient care. The Society is based in Oak Brook, Ill.

View related abstract:

Ultrafast Imaging in Acute Stroke: Utility of an Integrated Three-minute Neuro MR Protocol

# # #

Copyright © 2015 Radiological Society of North America (RSNA)