known contrast agents. So far, no cases have been reported with patients taking gadoteridol (ProHance) or gadobenate dimeglumine (MultiHance). Kanal does not know if absence of reported NSF cases linked to gadoteridol or gadobenate dimeglumine is merely chance or related to a particular property of these agents; he noted that these 2 agents have strong chelate bonds with gadolinium, suggesting a possible connection between NSF and agents with weak chelate bonds. However, he added, gadopentetate dimeglumine is also known to have a relatively strong bond with its chelate.

The medical community is also getting the word out. Early this year, the American College of Radiology will publish its updated “MR Safe Practice Guidelines.” The document will include a section dedicated exclusively to educating radiologists about NSF and its association with gadolinium-based contrast agents.

Before these new findings and warnings emerged, MRI had been considered safer than computed tomography for patients with renal insufficiency. Computed tomography uses a contrast agent containing iodine, known to induce kidney damage. Now, as researchers try to identify the factors that cause NSF and develop treatments, risks and benefits of an MRI test should be weighed when dealing with patients with renal insufficiency, said Joseph A. Vassalotti, MD, chief medical officer of the National Kidney Foundation and a professor of medicine at the Mount Sinai School of Medicine in New York City.

“An important concept is to talk with the radiologist to see if the contrast is needed,” said Vassalotti.

Kanal says radiologists at his institution try to avoid using MRI contrast agents when imaging patients with renal insufficiency, or they use the lowest practical dose and arrange for such patients to immediately undergo hemodialysis after an MRI to improve the contrast clearance rate. The FDA recommends that MRI contrast agents, especially at high doses, “should be used only if clearly necessary in patients with advanced kidney failure (those currently requiring dialysis or with a glomerular filtration rate = 15 cc/min or less).”

In the meantime, researchers continue to gain more understanding of NSF. Cowper, who has been the leading referral pathologist for diagnosing NSF, has noticed a slowing in the reporting of cases to his database. “I don’t know if the disease is disappearing or the concern in the community is less, or physicians are more comfortable with local pathologists making a diagnosis,” said Cowper, who hopes cases continue to be sent to the database for research purposes.

An animal model is needed to further NSF research, said Cowper. “Now we’re dealing with epidemiological observations, which are hard to control and make gathering prospective data difficult,” he said. “An animal model would allow us to determine onset and risk factors and could lead to treatments.”

**Brain Scan May Predict Schizophrenia**

**Bridget M. Kuehn**

Changes in the brains of individuals at high risk for developing schizophrenia may help scientists predict those who will go on to develop the disease.

Researchers from the University of Edinburgh in Scotland hypothesized that a reduction of the brain’s gray matter precedes the onset of schizophrenia. To test this theory, the scientists used structural magnetic resonance imaging to scan the brains of 65 individuals with a family history of the disorder (Job DE et al. **BMC Med.** 2006;4:29).

The participants were scanned twice over an average span of 1.5 years to determine if changes in gray matter density were associated with development of schizophrenia. Eight of the 65 patients went on to develop schizophrenia on average 2.3 years after their first scan. Sixty percent of the individuals who experienced a reduction of gray matter in the inferior temporal gyrus over a certain threshold went on to develop the disorder, while 92% of the individuals who did not experience these changes did not. The threshold yielded 3 true positives, 2 false-positives, 3 false-negatives, and 55 true negatives.

“This is the first time that brain imaging has been used as an early predictor for schizophrenia,” said Dominic E. Job, PhD, lead investigator and brain imaging researcher at the University of Edinburgh. Existing clinical predictive methods for schizophrenia are better at forecasting who will not develop the disorder, Job explained. If replicated in another set of individuals, the brain scan method could provide an early indication of who among high-risk individuals is likely to develop the disorder, and may one day allow physicians to determine who would benefit from interventions to help delay or prevent the disease.”