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MRI Can Help Save Lives By Determining Time of Stroke Onset

According to a new study published by Radiology journal, magnetic resonance imaging (MRI) of the brain could expand the number of stroke patients eligible for a potentially life-saving treatment.

Certain patients who suffer an acute ischemic stroke can be treated with a drug called tissue plasminogen activator, or tPA, that dissolves the blood clot and restores blood flow. However, the clot-busting drug can only be administered within four and a half hours of the onset of a stroke; when given beyond that window of time, the drug can cause bleeding in the brain. Unfortunately, as many as a quarter of all stroke patients cannot be given tPA because they wake up with stroke symptoms or are unable to tell their doctor when their stroke began.

The research, led by Catherine Oppenheim, professor of radiology at the Université Paris Descartes in France, showed that MRI could help identify patients who are highly likely to be within the three-hour time window when tPA is proven effective and approved for use. The radiologists reviewed data from consecutive patients with acute ischemic stroke treated at Sainte-Anne Hospital in Paris between May 2006 and October 2008. The time of stroke onset was well defined in all patients and each underwent MRI within 12 hours.

According to Dr. Oppenheim, using MRI to determine the duration of a stroke would change the way stroke is managed in the emergency setting as all stroke patients could be managed urgently, not just those patients with a known onset of symptoms. Clinical trials are the next step necessary to validate the use of MRI as a surrogate marker of stroke duration.

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