MRA/DWI Mismatch
A Novel Concept or Something One Could Get Easier and Cheaper?

Peter D. Schellinger, MD, PhD; Martin Köhrmann, MD

See related article, pages 2491–2496.

“Too much is never good; too little is never enough.”
—French proverb

Lansberg et al present a further subanalysis (QUOTE) of the DEFUSE study.1 They assessed whether a more stringent “mismatch” concept than the usual perfusion imaging (PI)/diffusion-weighted imaging (DWI) mismatch would be a good tool to identify a target group, which might profit from early reperfusion enhanced by recombinant tissue plasminogen activator. In fact, they looked for patients with proximal middle cerebral artery occlusion or proximal steno-
sis with distal occlusion and a small DWI lesion (<25 mL respectively <15 mL). This of course is a smart thing to do, because the target group for treatment is further refined, albeit diminished in numbers. One could also increase the widely accepted mismatch ratio of 1.2 to 1.5, or 2.0, which would also optimize the target group at the cost of numbers of patients to be treated.

If the French proverb mentioned at the beginning of this Editorial were accurate, the MR angiography (MRA)/DWI mismatch idea would have some merit. Who exactly are these patients? In essence, they are patients with a therapeutic target (relevant vessel occlusion) and a very small tissue lesion at screening. One could also phrase it differently. These are patients with a very large perfusion deficit and a very small diffusion lesion. Of course, these patients are the optimum target group for recanalization/reperfusion approaches in a later time window and of course these patients have a benefit on reperfusion.

At what cost does this come if the MRA/DWI mismatch were applied to select patients? First of all, an MRI has to be performed anyway with all extra cost (money as well as time and personnel). Second, the ratio of patients treated-to-screened further diminishes, because all those patients with a smaller treatment target (eg, M3 branch occlusion and cortical mismatch) and therefore smaller but still likely present treatment effect are not going to be treated. In the rather small (but very “clean”) study of 74 patients, only 62 remained for analysis, 41 with a measurable occlusion on MRA, 27 of

© 2008 American Heart Association, Inc.
Stroke is available at http://stroke.ahajournals.org
DOI: 10.1161/STROKEAHA.108.516963

The opinions in this editorial are not necessarily those of the editors or of the American Heart Association.

From the Department of Neurology, University at Erlangen, Erlangen, Germany.

Correspondence to Peter D. Schellinger, MD, PhD, Department of Neurology, Schwabacheranlage 6, D-91054 Erlangen, Germany. E-mail Peter.Schellinger@uk-erlangen.de

References


Key Words: diffusion-weighted imaging MRI thrombolysis
MRA/DWI Mismatch: A Novel Concept or Something One Could Get Easier and Cheaper?

Peter D. Schellinger and Martin Köhrmann

*Stroke*. 2008;39:2423-2424; originally published online July 17, 2008; doi: 10.1161/STROKEAHA.108.516963

*Stroke* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2008 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/39/9/2423

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Stroke* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to *Stroke* is online at:
http://stroke.ahajournals.org/subscriptions/