To the Editor:

We read with interest the review article on stroke and encephalopathy after cardiac surgery1 and the related editorial.2 We agree that assessing these complications provides a unique clinical opportunity for evaluating preventive strategies because patients at higher risk can be identified before surgery. We would like to add to the list of potential cerebroprotective agents proposed (gangliosides, glutamate receptor antagonists, antioxidants) the angiotensin AT1 receptor blockers (AT1RB).

Both angiotensin receptor blockers and angiotensin-converting enzyme inhibitors are widely used in cardiac patients before surgery and are usually resumed after transient discontinuation. Although their cardiac protective effects have been proven globally comparable (VALIANT)3 their cerebroprotective effect (regarding both stroke and cognitive dysfunction) may be quite different. Indeed, the relative risk of stroke with angiotensin-converting enzyme inhibitors therapy compared with dihydropyridines may stimulate renin secretion only by activating the AT1RBs.11 This may be explained by AT1RB-induced stimulation of angiotensin II12 because in rats intoxicated by scopalamine and having lost their capacity to quickly find an immerged platform after training (Morris Water Maze), the injection of angiotensin IV into their brain restored their spatial cognitive capacities.13

This superiority of the AT1RB over the dihydropyridine calcium antagonists in stroke prevention may be explained by the fact that AT1RBs, by blocking the angiotensin II–mediated suppression of renin secretion, are more powerful stimulators of renin secretion and therefore of angiotensin II formation than are calcium-antagonists. This has been confirmed in a crossover study in hypertensive patients.7 Long-acting dihydropyridines and short-acting nondihydropyridines may stimulate renin secretion only by activating the sympathetic nervous system with variable intensity.8,9

Furthermore, valsartan and losartan have been shown to improve cognitive function when compared with enalapril10 and β-blockers.11 This may be explained by AT1RB-induced stimulation of angiotensin IV12 because in rats intoxicated by scopalamine and having lost their capacity to quickly find an immerged platform after training (Morris Water Maze), the injection of angiotensin IV into their brain restored their spatial cognitive capacities.13

The above data would indicate that AT1RBs as a class have greater stroke and cognition protective affects than the ACE inhibitors. Clearly these provocative findings should be tested in a prospective randomized trial comparing the 2 drug classes head to head.

Disclosures

None.

AT1 Receptor Blockers for Cognition Decline After Cardiac Surgery?

Roxana Oprisiu-Fournier, MD
Jean-Marie Serot, MD
Geriatrics Department
University Hospital
Amiens, France

Jean-Michel Achard, MD, PhD
Physiology Department
University Hospital
Limoges, France

Franz H. Messerli, MD
Cardiology Department
St-Luke Roosevelt Hospital Center
New York, New York

Sandra E. Black, MD
Neurology Division Sunnybrook Women’s College Health Science Center
University of Toronto, Canada

Albert Fournier, MD
Internal Medicine Nephrology Department
University Hospital
Amiens, France

AT1 Receptor Blockers for Cognition Decline After Cardiac Surgery?
Roxana Oprisiu-Fournier, Jean-Marie Serot, Jean-Michel Achard, Franz H. Messerli, Sandra E. Black and Albert Fournier

Stroke. 2006;37:2666; originally published online September 14, 2006;
doi: 10.1161/01.STR.0000244550.27843.41

Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2006 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/37/11/2666

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/