Insular Lesions and Hyperglycemia in Acute Stroke Revisited

To the Editor:
I have read with interest the article by Allport et al 1 reporting that insular cortical ischemia was associated with poststroke hyperglycemia. Previous studies have associated insular lesions with ECG abnormalities and have suggested a relation to cerebrogenic sudden death, possibly through the generation of fatal cardiac arrhythmias. 2 It has further been hypothesized that this might come about either in an indirect manner by activation of the sympathicoadrenal system 3 or by direct effects. 4 Laterality of insular effects in humans has further been demonstrated. 5 As increasing sympathicoadrenal tone causes hyperglycemia, the finding of higher blood glucose in patients with insular lesions may support this mechanism.

We investigated s-cortisol levels in the light of insular lesions in 172 patients with acute stroke within 6 hours of admission, 42 of whom had unilateral insular lesions. 6 In univariate analysis, we found that cortisol levels related significantly to insular damage, especially right insular damage. However, in multivariate analysis also including stroke severity on admission and early infarction signs on initial CT scan, this was no longer the case.

On reading the article of Allport et al, I further tried to reproduce their findings concerning blood glucose and insular lesions in our 179 patients in whom blood glucose was measured on admission within 6 hours of stroke onset. Mean blood glucose in patients with insular lesions was 6.6 mmol/L in comparison to 6.4 mmol/L in patients with no insular lesions (P = 0.317). In patients with right insular lesions, mean blood glucose was 7.0 mmol/L in comparison to 6.4 mmol/L in patients with left or no insular lesions (P = 0.564).

These findings support the idea of insular damage causing its effects in a direct manner rather than in an indirect manner by sympathicoadrenal activation.

Hanne Christensen, MD, PhD
Bispebjerg Hospital
Copenhagen, Denmark

Insular Lesions and Hyperglycemia in Acute Stroke Revisited
Hanne Christensen

Stroke. published online December 29, 2004;
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2004 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/early/2004/12/29/01.STR.0000152959.64134.cf.citation

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/