Surgery for Intracerebral Hemorrhage: An Evidence-Poor Zone

Geoffrey A. Donnan, MD, FRACP; Stephen M. Davis, MD, FRACP

Why do we know so little about the acute treatment of intracerebral hemorrhage (ICH)? Although it is a less common cause of stroke, with a frequency of 10% to 15%, it is at least double in Asian countries. Further, its higher mortality rate than ischemic stroke should have attracted more attention from investigators than has been the case. Based on a simple MEDLINE search of the last decade of publications concerning hemorrhagic versus ischemic stroke, we found that the proportions were 3% and 97%, respectively. Why is this such a grossly under-researched area? Perhaps there is a lack of appeal to basic researchers because of the absence of a well-understood pathophysiological mechanism for ICH in contrast to the better-documented ischemic cascade and penumbra. In addition, clinical research in ICH may have been hampered by an even greater nihilistic attitude by investigators than for ischemic stroke. Even when nihilism is overcome and interventions such as hematoma evacuation are contemplated, we find it quite remarkable that there is so little evidence from clinical trials in 2003.

Both our discussants also agree that the number of patients in randomized trials of surgery of hematoma evacuation is very small. Hankey has emphasized that this lack of evidence has translated into enormous national and regional variations in the proportion of patients treated surgically and, indeed, has translated into enormous national and regional variations.

The STICH Trial1 in the proportion of patients treated surgically and, indeed, has translated into enormous national and regional variations very small. Hankey has emphasized that this lack of evidence in randomized trials of surgery of hematoma evacuation is there is so little evidence from clinical trials in 2003.

Further, its higher mortality rate than ischemic stroke should have attracted more attention from investigators than has been the case. Based on a simple MEDLINE search of the last decade of publications concerning hemorrhagic versus ischemic stroke, we found that the proportions were 3% and 97%, respectively. Why is this such a grossly under-researched area? Perhaps there is a lack of appeal to basic researchers because of the absence of a well-understood pathophysiological mechanism for ICH in contrast to the better-documented ischemic cascade and penumbra. In addition, clinical research in ICH may have been hampered by an even greater nihilistic attitude by investigators than for ischemic stroke. Even when nihilism is overcome and interventions such as hematoma evacuation are contemplated, we find it quite remarkable that there is so little evidence from clinical trials in 2003.

Both our discussants also agree that the number of patients in randomized trials of surgery of hematoma evacuation is very small. Hankey has emphasized that this lack of evidence has translated into enormous national and regional variations in the proportion of patients treated surgically and, indeed, the very nature of the surgical procedure. The STICH Trial (Surgical Trial in Intracerebral Hemorrhage) has randomized more than 1000 patients and is nearly completed. While this will yield further important information, it is likely to raise more questions about patient selection, timing, and technique.

For supratentorial hemorrhage, we share Hankey’s uncertainty about surgery. Interestingly, in Japan Minematsu confirms the view that hematoma evacuation is probably more commonly performed than in most other parts of the world. Perhaps this is because of the magnitude of the problem in Japan as well as their pioneering work concerning concept of early bleeding—hence, the logic of acute evacuation of the hematoma and establishment of hemostasis.2 We do agree that those with small bleeds and those with large devastating hemorrhages are not appropriate candidates. Like Minematsu, our own surgeons consider evacuations in younger patients with moderately sized lobar hematomas who are not comatose, but are clinically deteriorating. However, even in our own institutions, surgical practices vary enormously, thus reflecting the wider uncertainties. We certainly agree with both Minematsu and Hankey that the benefits of evacuation of selected patients with cerebellar hematomas are widely accepted and unlikely to be tested in a clinical trial setting. This, at least, is clear.

Clinical trials in ischemic stroke have been catalyzed by the concept of the ischemic penumbra. Unfortunately, this has been shown to be unlikely to exist in ICH.3,4 One important advance, however, has been the demonstration of early hematoma growth in more than one third of ICH patients.5 This has generated interest in strategies to attenuate this expansion, one example being a trial of a hemostatic compound, activated recombinant factor VII.6 In addition, there has been renewed interest in blood pressure–lowering in acute ICH as another management strategy.

To return to our original theme concerning the paucity of knowledge and research in the area: there are encouraging signs that may suggest that we are, at last, emerging from one of the most evidence-poor zones in clinical medicine.

References

1. STICH Website. www.mcl.ac.uk/stich.
Surgery for Intracerebral Hemorrhage: An Evidence-Poor Zone
Geoffrey A. Donnan and Stephen M. Davis

Stroke. published online May 15, 2003;
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2003 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/2003/05/15/01.STR.0000074548.93877.5A.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/