Dr. Lamy that such rates are probably a much better reflection of current risk. These studies do not specify the rates for the subgroup with relevant carotid lesions, however, making the problem of finding appropriate "historical controls" even more vexing.

Fortunately, it appears that definitive resolution will become available in the next few years, when several large European and North American controlled studies are completed. Since aspirin treatment, apparently the best available medical therapy, does not seem to help women and only partially reduces the excess S+D rate in men, I hope fervently that surgery will be proven to be of value and that we will have a clear definition of the circumstances in which it is applicable.

Saran Jonas, MD
Department of Neurology
New York University School of Medicine
New York, New York

References

Multicenter Trial of Hemodilution in Acute Ischemic Stroke

To the Editor:

Recently, the Scandinavian Stroke Study Group1 investigated the effects of hemodilution in a general stroke population. The study design, which had been previously reported,2 indicated that the major outcome measures were the proportion of institutionalized patients among the survivors at 3 months and the proportion of all patients entering the trial who were home at 3 months. A single-center trial3 was the source of background information, that is, the expected proportions in the control group.

There are major difficulties in interpreting the results of this study. First, analysis based on all patients enrolled in the trial is more appropriate than analysis based on survivors since the subgroup of survivors may be influenced by the treatment, leading to a selection bias. This is the case regardless of the fact that the treatment and control group mortality rates are similar and regardless of demonstrable similarity of the survivors in each group with respect to measured baseline characteristics. Second, sample size calculations for the second outcome measure were based on conservative estimates of the proportion of all patients entering the trial who would be at home at 3 months (see Figure 7 of Strand et al4). From the single-center trial,3 44% of the control group patients were at home at 3 months, with a 95% confidence interval of 30–58%. Using a more conservative estimate for the control group proportion, 45%, the power curve for a two-sided $p<0.05$ test of differences in proportions is given in Figure 1. It is clear from the power curve that differences of $\leq 15\%$ would be very difficult to detect with a total sample size of 373 patients and maximum power of 0.80. Further, the power to

![Figure 1. Power curve for two independent proportions.](http://stroke.ahajournals.org/doi/fig)
Multicenter trial of hemodilution in acute ischemic stroke.

M A Foulkes

Stroke. 1988;19:1181-1182
doi: 10.1161/01.STR.19.9.1181.a

Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1988 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/19/9/1181.1.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/