Prevalence of Depression and Use of Antidepressant Medication at 5-Years Poststroke in the North East Melbourne Stroke Incidence Study

Seana L. Paul, BSc (Hons); Helen M. Dewey, PhD; Jonathan W. Sturm, PhD; Richard A.L. Macdonell, MD; Amanda G. Thrift, PhD

Background and Purpose—There are few data on the prevalence or treatment of depression from unselected populations long-term poststroke. We assessed the prevalence of depression and antidepressant use at 5-years poststroke in an unselected stroke population.

Methods—Five-year survivors from a prospective community-based stroke incidence study were assessed for depression with the Irritability, Depression and Anxiety Scale. Medications indicated primarily for treatment of depression were recorded.

Results—At 5-years poststroke, 441 (45%) of 978 incident cases were alive (mean age=74±15 years, 49% female). Seventeen percent of those assessed were depressed. Twenty-two percent with depression were taking an antidepressant medication. Of those taking an antidepressant, 72% were not depressed.

Conclusions—Although nearly one-fifth of survivors were depressed, few were taking antidepressants. Further exploration of this low level of treatment is warranted. (Stroke. 2006;37:2854-2855.)

Key Words: depression ■ epidemiology ■ psych and behavior ■ treatment

Identification and treatment of poststroke depression are important because of its association with reduced quality of life and mortality.2 Oxfordshire Community Stroke Project investigators found 14% of 3- to 5-year survivors were depressed.3 These findings need confirmation in other unselected cohorts.

Depression is a treatable condition in the general population, yet available data indicate that only a minority of depressed patients with stroke take antidepressants during the first year poststroke.4 There are no longer-term treatment data about poststroke depression.

We aimed to assess the prevalence of depression and antidepressant medication use at 5-years poststroke in a community-based population.

Methods

This study was part of the North East Melbourne Stroke Incidence Study. The methods are described in detail elsewhere.5 Briefly, the study adopted the “ideal” stroke incidence study criteria,6 including use of multiple overlapping referral sources and standard definitions. From May 1, 1997, to April 30, 1999, all possible cases of first-ever stroke were ascertained from a population of 306,631 in Melbourne, Australia. Five-year survivors, excluding subarachnoid hemorrhage, were interviewed in their place of residence.

Depression was assessed using the 5 depression items from the Irritability, Depression and Anxiety Scale.7 Because depression cannot reliably be assessed by proxy, those with cognitive or communication problems were not assessed. Depression was classified in those with scores ≥7. The IDA depression subscale has external validity against the Montgomery-Åsberg Depression Rating Scale (Spearman rank correlation, r=0.71) and low false-positive (2%) and false-negative (4%) diagnoses.8 The IDA is advantageous for assessing poststroke mood disorder because it does not include somatic symptoms that might be mimicked by stroke.

All currently prescribed medications were recorded. We assumed that medications were used for their primary indication as listed on the Australian MIMS online medication database.9

Data Analysis

Differences between those assessed and not assessed were determined using Student’s t-test and Fisher exact test. Significance was set at P≤0.05 (2-sided).

Ethics

The North East Melbourne Stroke Incidence Study was approved by ethics committees at each participating institution. Informed consent was obtained.

Results

At 5-years poststroke, 441 (45%) were alive (mean age=74±15 years, 51% male). Sixty-four were excluded because they required a proxy. In total, 289 (77%) 5-year survivors were assessed with the

Continuing medical education (CME) credit is available for this article. Go to http://cme.ahajournals.org to take the CME quiz for this article. Received June 14, 2006; accepted July 7, 2006.

From the National Stroke Research Institute (S.L.P., H.M.D., J.W.S., A.G.T.), Austin Health, Heidelberg Heights, Victoria, Australia; the Department of Medicine (S.L.P., H.M.D., R.A.L.M., A.G.T.), University of Melbourne, Melbourne, Australia; the Neurology Department (H.M.D., R.A.L.M., A.G.T.), Austin Health, Heidelberg, Australia; Gosford Hospital and the University of Newcastle (J.W.S.), Newcastle, Australia; and the Department of Epidemiology and Preventative Medicine (A.G.T.), Monash University, Monash, Australia.

Correspondence to Seana L. Paul, BSc (Hons), National Stroke Research Institute, Level 1, Neurosciences Building, Repatriation Hospital Heidelberg, Austin Health, 300 Waterdale Rd., Heidelberg Heights, Victoria, Australia, 3081. E-mail seana.paul@utas.edu.au

© 2006 American Heart Association, Inc.

Stroke is available at http://www.strokeaha.org

DOI: 10.1161/01.STR.0000244806.05099.52

2854
Limitations to this study include lack of data on medication doses, duration, and indication. We assumed medications were taken for their primary indication, perhaps overestimating the treatment of depression and its effectiveness. Second, because those requiring a proxy were unable to complete the IDA, the prevalence of depression may be under- or overestimated. Documenting antidepressant use among those requiring a proxy provided some indication of the presence of mood disorders in this group. Furthermore, the IDA is a screening tool for mood disorder. It was impractical to confirm depression with a comprehensive psychiatric interview. Finally, because overseas-born patients were assessed less often, findings may be limited to those whose first language is English.

Conclusions
Depression was present in nearly 20% of all survivors. Use of antidepressants was low. Inadequate detection and treatment of poststroke depression may underlie these findings. Increased awareness of poststroke depression may lead to more effective treatment.

Acknowledgments
The contribution of research nurses is acknowledged: Steve Cross, Jean McLean, Sue Mosley, Mary Staious, and Cathy Taranto. Li Chun Quang assisted with data management.

Sources of Funding
This work was supported by grants from the National Health and Medical Research Council, the Victorian Health Promotion Foundation, the Foundation for High Blood Pressure Research, and the National Stroke Foundation. S.L.P. was supported by a VicHealth Public Health Post-Graduate Scholarship.

Disclosures
None.

References

Prevalence of Depression and Antidepressant Medication Use at 5-Years Poststroke

<table>
<thead>
<tr>
<th>Prevalence of Depression*</th>
<th>No</th>
<th>Yes</th>
<th>Total†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not depressed (score 0 – 6)</td>
<td>241 (83)</td>
<td>234</td>
<td>26</td>
</tr>
<tr>
<td>Depressed (score 7 – 15)</td>
<td>48 (17)</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>Survivors unable to complete IDA</td>
<td>64</td>
<td>17</td>
<td>47</td>
</tr>
</tbody>
</table>

*Denominator = 289 because 88 had missing IDA data and 64 required a proxy respondent.
†Two hundred eighty had complete IDA and medication data (9 with completed IDA scales did not have medication data).

Discussion
Among 5-year survivors of first-ever stroke, 17% were depressed. This is similar to the 14% prevalence among 3- to 5-year survivors in the Oxfordshire Community Stroke Project. Larger estimates were reported in hospital-based samples, which may comprise more severe and symptomatic individuals.

Only 22% of 5-year survivors were taking an antidepressant compared with 49% in a recent Swedish study. This low figure could indicate reluctance to prescribe antidepressants to patients with stroke because of uncertain efficacy and potential side effects, undiagnosed depression, prescription of nonpharmacologic treatments, or treatment cessation because of poor efficacy or side effects. Future studies would be strengthened by assessment of both pharmacological and nonpharmacological treatments.

Interestingly, 72% of those taking an antidepressant were not depressed, providing indirect evidence of antidepressants efficacy in many patients. Another possibility is that many were prescribed antidepressants for other indications such as pain. Only 28% of depressed individuals were taking antidepressants similar to 3 months poststroke in Sweden. Potential explanations include ineffective treatment possibly attributable to recent treatment initiation, poor compliance, or insufficient dosage. However, this is speculative because treatment duration and dosage were not noted.

Interestingly, those unable to complete the IDA because of dysphasia or cognitive impairment were more often taking antidepressants than those able to respond. The reasons for this finding are uncertain.
Prevalence of Depression and Use of Antidepressant Medication at 5-Years Poststroke in the North East Melbourne Stroke Incidence Study

Stroke. 2006;37:2854-2855; originally published online September 28, 2006;
doi: 10.1161/01.STR.0000244806.05099.52
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/37/11/2854

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/