Acute stroke unit care improved quality of life at 5 years


Question
Does stroke unit care improve long-term quality of life in patients with stroke?

Design
Randomized controlled trial with 5-year follow-up.

Setting
A university hospital in Norway.

Patients
220 patients (mean age 73 y, 51% men) hospitalized with acute stroke. Exclusion criteria were subarachnoid hemorrhage, deep coma at admission, or residence in a nursing home before onset of symptoms.

Intervention
110 patients were allocated to care in a 6-bed stroke unit; a standardized program with up to 42 days (mean 16 d) of team-based care that included diagnostic evaluation, acute treatment, mobilization, rehabilitation, and family and patient education*. 110 patients were allocated to medical care, with rehabilitation therapy on a general ward. Family physicians provided follow-up care for all patients after 6 weeks. All 77 patients who were alive at 5 years (45 in the stroke unit group and 32 in the general ward group) were assessed, but only 80% were able to complete all questionnaires.

Main outcome measures
Quality of life measured by the Frenchay Activities Index (FAI), Nottingham Health Profile (NHP) (81% of patients), and a visual analog scale (86% of patients). Functional status was measured using the Barthel Index.

Main results
More patients in the stroke unit group had an FAI score ≥ 30 than did patients in the general ward group (Table) (P = 0.04). Patients in the stroke unit group also had better quality-of-life scores for the global NHP (77.7 vs 63.1) (P < 0.01) and for its subscales of energy (P = 0.03), emotional reactions (P = 0.03), social isolation (P = 0.009), physical mobility (P = 0.04), and sleep (P = 0.04) but not for pain (P = 0.3). The FAI and visual analog scale scores favored stroke unit patients (34.2 vs 27.2, P = 0.01 for FAI and 72.8 vs 50.7 mm, P = 0.002 for the visual analog scale). Patients in both groups who had better functional status measured by the Barthel Index also had higher quality-of-life scores.

Conclusion
Acute care in a stroke unit improved quality of life for patients at 5 years. Sources of funding: Norwegian Council on Cardiovascular Diseases; The Fund of Cardiovascular Research; University Hospital of Trondheim.

For correspondence: Dr. B. Indredavik, The Stroke Unit, Department of Medicine, University Hospital of Trondheim, N-7006 Trondheim, Norway. FAX 47-73-99-7546.


Quality-of-life scores for stroke unit care vs general ward care

<table>
<thead>
<tr>
<th>Outcome at 5 y</th>
<th>Stroke unit</th>
<th>General ward</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frenchay Activity Index ≥ 30 points</td>
<td>64.4%</td>
<td>40.6%</td>
<td>58.6% (2.3 to 163)</td>
<td>5 (2 to 80)</td>
</tr>
</tbody>
</table>

†Abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

Commentary
Systematic reviews have shown substantial advantages of organized stroke unit care over general ward care in reducing mortality, dependence, and institutionalization after stroke (1), but it could be argued that subjective quality of life is a more important outcome. This study is one of the few that has attempted to measure quality of life; it used a relatively objective assessment (FAI), which all patients completed, and 2 subjective measures (NHP and a visual analog scale), which only some patients completed. Nevertheless, the results strongly implied a benefit for stroke unit care over general ward care for all 3 measures (despite the potential bias that might have arisen from differential survival in the 2 groups).

Although the study was well done and used blinded outcome assessment, the results should be interpreted cautiously. The measures used probably overemphasize physical activities and may not fully reflect other aspects of quality of life. Thus, much of the apparent advantage for stroke unit care might simply have resulted from differences in physical recovery between the 2 groups, which were greater in this study than in many other stroke unit trials.

The lack of agreement on the meaning of quality of life or how to measure it makes formal meta-analysis difficult. Nevertheless, this study, together with other stroke unit trials that have tried to measure psychological aspects of stroke recovery (2), suggests that the benefits of well-organized, interdisciplinary, team-based stroke unit care may extend well beyond the confirmed improvements in survival and physical recovery.

David Barer, MSc, DM
Queen Elizabeth Hospital
Sheriff Hill, Gateshead, England

UK

References