Review: Early supported discharge reduces death or dependence after stroke

Langhorne P, Taylor G, Murray G, et al. **Early supported discharge services for stroke patients: a meta-analysis of individual patients' data.** Lancet. 2005;365:501-6.

Clinical impact ratings: Hospitalists ★★★★★★☆ Geriatrics ★★★★★★☆ Neurology ★★★★★★☆ Phys Med & Rehab ★★★★★★☆

QUESTION

In patients hospitalized with stroke, does an early supported discharge (ESD) service with rehabilitation at home provide better outcomes than conventional in-hospital care?

METHODS

Data sources: The Cochrane Specialized Register of Controlled Trials (to August 2004) was searched, and trialists were asked to describe their intervention and control services and to provide individual patient data.

Study selection and assessment: Randomized controlled trials (RCTs) that compared an ESD intervention with conventional care in hospitalized patients with stroke. The aim of ESD was to accelerate discharge from hospital and provide rehabilitation and assistance in a community setting. A quality assessment of the individual trials was based on allocation concealment and blinding of outcome assessors.

Outcomes: A composite endpoint of death or dependence (Barthel index < 19/20 or Rankin score > 2). Secondary outcomes were death; death or need for long-term institutional care; change in activities of daily living (ADLs), subjective health status, or mood or depression; patient satisfaction; caregiver outcomes (subjective health status, mood score, and satisfaction); and resource outcomes (length of stay and hospital readmission).

MAIN RESULTS

11 RCTs (n = 1597, mean or median age range 68 to 78 y) met the selection criteria and were done in 6 countries. Median follow-up was 6 months (range 3 to 12 mo). 9 RCTs used a concealed randomization procedure, and 10 RCTs used blinded outcome assessment. The same ESD team coordinated hospital discharge and rehabilitation at home in 7 RCTs, the ESD team coordinated discharge and immediate postdischarge care but not rehabilitation care in 2 RCTs, and patients received multidisciplinary care in hospital but postdischarge care was provided by uncoordinated community services or health care volunteers in 2 RCTs. Patients who received ESD had a greater reduction in death or dependence than did patients who received conventional care (Table). Groups did not differ for death, but the composite endpoint of death or need for long-term institutional care was reduced with ESD (Table). Groups did not differ for ADL, subjective health status, or mood scores. Patients who received ESD were more likely to report satisfaction with outpatient services (odds ratio 1.6, 95% CI 1.1 to 2.4) (5 RCTs). Caregivers' outcomes did not differ between groups. The length of hospital stay was 7.7 days (CI 4.2 to 10.7) shorter in the ESD group (9 RCTs). Hospital readmission rates were similar between groups (27% vs 25%) (5 RCTs). Significant subgroup interaction existed with the presence or absence of coordinated, multidisciplinary ESD teams. ESD was more effective in patients with moderate than with severe stroke.

CONCLUSION

In patients hospitalized with stroke, an early supported discharge service with rehabilitation at home reduces death and disability more than conventional in-hospital care.

Sources of funding: Stroke Association and Chest Heart and Stroke Scotland.

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Early supported discharge (ESD) vs conventional in-hospital care for stroke at median 6 months*

Outcomes	Number of trials (n)	ESD	Conventional care	RRR (95% CI)	NNT (CI)
Death or dependence†	11 (1597)	45%	50%	11% (1.3 to 20)	19 (10 to 157)
Death‡	11 (1597)	8.8%	9.7%	9.1% (–23 to 33)	Not significant
Death or long-term institutional care‡	9 (1398)	18%	23%	21% (2.7 to 36)	21 (12 to 175)

*Abbreviations defined in Glossary.
†RRR, NNT, and CI calculated from data in article.
‡Numbers calculated from data provided by author.

COMMENTARY

Stroke units give patients better chances of survival, being independent, and living in the community (1). However, inpatient care is costly and bed shortages are almost universal. Hence, there is a constant drive to manage patients with new models of care in the home. One such model is ESD. But does it work? We already have some evidence from meta-analyses that a parallel scheme to avoid admission to hospital with home supports is not beneficial (2), so some skepticism is warranted.

We are reassured by the meta-analysis of Langhorne and colleagues, which shows that ESD after initial inpatient care is highly effective. While not saving lives, disability was reduced, length of stay minimized, and costs contained. Understandably, the benefits were restricted to patients with moderate disability given the difficulties of managing densely hemiplegic patients at home.

Why was ESD beneficial? While the early aspects of stroke management, such as attention to physiologic parameters, early mobilization, and early complications, are probably not influenced by ESD, the patients' home may provide a better environment to relearn skills and regain normal activities.

What does this mean for the management of most stroke patients? The findings suggest we can start to implement these strategies with more confidence that our patients will benefit, the results are reasonably generalizeable to developed countries, and the advantages were sustained for ≥ 5 years (3). Obviously, we need more long-term data, but the pattern seems to be set: Health care providers should plan for more acute stroke units and better ESD services for those patients for whom this strategy is the best option.

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References

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