

Review: Comprehensive occupational therapy interventions improve outcomes after stroke

Stultjens EM, Dekker J, Bouter LM, et al. Occupational therapy for stroke patients: a systematic review. *Stroke*. 2003;34:676-87.

QUESTION

In patients who have had a stroke, are occupational therapy (OT) interventions effective?

DATA SOURCES

Studies were identified by searching MEDLINE (1966 to June 2002), CINAHL (1982 to June 2002), EMBASE/Excerpta Medica (1988 to March 2001), AMED (1985 to April 2001), SCISEARCH (1974 to March 2001), the Cochrane Controlled Trials Register (June 2002), the Rehabilitation and Related Therapies Field and the Stroke specialized trial register of the Cochrane Collaboration, and 2 Dutch libraries of medical and rehabilitation literature. Bibliographies of identified studies were scanned, and authors were contacted.

STUDY SELECTION

Studies with controlled or uncontrolled designs were selected if they evaluated OT interventions in adult stroke patients for primary outcome measures (including primary activities of daily living [ADLs], extended ADLs, and social participation), and secondary process measures.

DATA EXTRACTION

Data were extracted on type of OT intervention. Comprehensive OT interventions used all 6 specific intervention categories: 1) training of sensory-motor functions, 2) training of cognitive functions, 3) training of skills (ADLs or extended ADLs), 4) advice and instruction in the use of assistive devices, 5) provision of splints and slings, and 6) education of family and primary caregivers. Data were also extracted on study methods and quality, participants, outcomes, and duration of intervention.

MAIN RESULTS

32 studies met the inclusion criteria. 18 studies were randomized controlled trials (RCTs) (of which 10 had high methodological quality), 6 were case-control studies, and 8 used noncontrolled designs.

Comprehensive OT interventions were effective: The pooled standardized mean difference was 0.46 (95% CI 0.04 to 0.88; 3 high-quality RCTs) for primary ADL, 0.32 (CI 0 to 0.64; 3 high-quality RCTs) for extended ADL, and 0.33 (CI 0.03 to 0.62; 4 high-quality RCTs) for social participation. 3 high-quality RCTs showed no evidence for

the efficacy of training of sensory-motor function on primary ADL, extended ADL, social participation, or arm and hand function. 1 low-quality RCT showed no evidence of efficacy for visual perception training on primary ADL. Training of skills had a beneficial effect on primary ADL (1 high-quality RCT) and extended ADL (1 low-quality RCT). 1 high-quality RCT showed no evidence that training of wheelchair propulsion increased functional ability and well-being. Data were insufficient on interventions using provision of splints and education of family or primary caregivers.

CONCLUSIONS

Comprehensive occupational therapy (OT) interventions improve activities of daily living (ADLs), extended ADLs, and social participation. Limited data exist on the effectiveness of specific OT interventions.

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For correspondence: E.M. Stultjens, Netherlands Institute for Health Care Research, Utrecht, The Netherlands. E-mail e.stultjens@nivel.nl. ■

COMMENTARY

OT is a well-established component of stroke rehabilitation but has only recently been tested in high-quality RCTs. The review by Stultjens and colleagues brings together the relevant evidence. The main message for clinicians is that OT can improve outcomes—intervention by a skilled occupational therapist to address specific poststroke problems (i.e., comprehensive OT) can improve patient activity and social participation. This clearly is important and reinforces the need for OT input in a stroke rehabilitation service.

However, as with most complex interventions, difficulties exist in deriving prescriptive advice from this review. Comprehensive OT probably entails a mixture of effective and ineffective components. In the included studies, OT was usually provided by skilled and motivated therapists who used a flexible problem-solving approach to their patients' problems. We have little information on the specific details of their treatments. It is notable that the review found limited evidence with respect to specific interventions.

The stroke unit literature suggests that OT should form a component of multidisciplinary stroke rehabilitation (1). This review cannot tell us about the most effective application of OT within a rehabilitation service.

Future OT research should focus on identifying discrete, effective interventions that occupational therapists can provide. We also require more work on defining service characteristics within which OT is most effective. In the future, I hope that occupational therapists will be able to tailor specific treatments for specific problems, generating and using high-quality evidence about what will and will not work.

*Peter Langhorne, MBChB, FRCP, PhD
University of Glasgow
Glasgow, Scotland, UK*

Reference

1. Langhorne P, Pollock A. What are the components of effective stroke unit care? *Age Ageing*. 2002;31:365-71.