

CAT: The efficacy of using NDT for post-stroke patients

Clinical Bottom Line:

Research does not support the use of NDT over other types of physical therapy for post-stroke patients, and some research suggests the use of NDT results in poorer outcomes.

Citations:

Hafsteinsdottir TB, Algra A, Kappelle LJ, Grypdonck MH. Neurodevelopmental treatment after stroke: a comparative study. *Journal of Neurology, Neurosurgery & Psychiatry*. 76(6):788-92, Jun 2005.

Paci M. Physiotherapy based on the Bobath concept for adults with post-stroke hemiplegia: a review of effectiveness studies. *Journal of Rehabilitation Medicine*. 35(1):2-7, Jan 2003.

Three/four part clinical question:

For post-stroke patients, is NDT more effective than other methods of physical therapy?

The studies: One comparative clinical trial (Hafsteinsdottir), and one meta-analysis (Paci).

	<u>Comparative Study (Hafsteinsdottir)</u>	<u>Meta-Analysis (Paci)</u>
The patients	Average age: 70 y/o, Days past stroke: 3-5 Inclusion criteria: Diagnosis of stroke, GCS >13, Rankin > 3 after stroke onset (not before), MMSE >6	15 studies: 6 RCTs, 6 CTs, 3 case studies 726 total patients (1 to 148 per trial) Age ranged from 15 to 95 years
Control Group(s)	(N = 101): Conventional (non-NDT) nursing and non-NDT physical therapy during hospital stay and after DC for 12 mo.	Use of conventional PT (Non-NDT)
Experimental Group	(N = 223): NDT nursing and physical therapy based upon Bobath principles: stimulation of bilat limb function, suppression of abnormal patterns of movement, promotion of advanced postural reactions during hospital stay and after DC for 12 mo.	Use of NDT in PT (Bobath method)

The evidence:

<u>Comparative Study Outcome Measures</u>	Control	Experimental	Adjusted Odds Ratio
Functional Outcome: Barthel Index < 12 = "Poor outcome"			
At discharge	45%	44%	0.8
At 6 months	25%	29%	1.6
At 12 months	24%	27%	1.7* main outcome measure
Quality of Life Outcome: QoL measured using VAS			
At 6 months	50	49	N/A
At 12 months	50	50	N/A

<u>Meta-Analysis Types of Studies (# of studies)</u>	Negative results for NDT group vs. control	No difference between NDT vs. control	Positive results for NDT group vs. control
Large RCT with clear-cut results (0)	0	0	0
Small RCT with uncertain results (6)	1	5	0
Non-randomized, contemporaneous controls (4)	1	2	1
Non-randomized, historical controls (2)	2	1	0
No controls, case series only (3)	1	0	2

Comments:

1. The current evidence does not appear to support NDT over conventional PT when treating post-stroke patients.
2. Outcome measures and techniques vary from study to study; it is difficult to objectively compare results.
3. Upshot: perhaps rather than putting time, resources, and energy into learning NDT techniques, review the most recent literature for evidence-backed techniques for improving functional and QoL outcomes instead.

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Kill or update by: 27 JUL 06