

Reference:

Bernhardt J, Langhorne P, Lindley RI, Thrift AG, Ellery F, Collier J, Churilov L, Moodie M, Dewey H, Donnan G: Efficacy and safety of very early mobilisation within 24 h of stroke onset (AVERT): a randomised controlled trial. *Lancet* 2015;386:46–55.

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SMART Arm Training in Subacute Stroke Survivors with Severe Arm Disability: A Randomised Controlled Trial

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Background and Rationale: The SMART Arm is a device designed to promote arm and hand recovery in stroke survivors with severe disability. By enabling practice of reaching, pilot trials of SMART Arm training have demonstrated improved arm function in subacute and chronic stroke. This study aimed to determine the effect of SMART Arm training with or without outcome-triggered electrical stimulation compared with usual therapy in stroke survivors with subacute and severe arm disability undergoing inpatient rehabilitation.

Methods: A prospective, multicentre randomised controlled trial, with three parallel groups, concealed allocation, assessor blinding and intention-to-treat analysis was performed. Fifty inpatients within four months of diagnosis of first stroke who had severe arm and hand disability received 20, 1-hour sessions over four weeks of either (1) SMART Arm training with outcome-triggered stimulation (SMART Arm-stim) and usual therapy (n = 16), (2) SMART Arm-alone and usual therapy (n = 17), or (3) usual therapy (control, n = 17). Participants were assessed at baseline, post-intervention, 26- and 52-weeks follow up. The primary outcome measure was Motor Assessment Scale item 6 (upper arm function, MAS-6) at post-intervention, with a score of >1 point change classified as a minimal clinically important difference (MCID).

Results: There was no difference in MAS-6 scores between groups at post-intervention, 26 or 52 weeks (p > 0.23). At post-intervention, 65% of SMART Arm-stim, 53% of SMART Arm-alone and 47% of controls achieved a MCID on MAS-6. The SMART Arm-stim group had a greater odds (GenOR 1.47 95% CI 1.23–1.71) of achieving a MCID than controls. At 26-weeks, 69% of the SMART Arm-stim group, 88% of SMART Arm-alone and 59% of controls achieved a MCID on MAS-6. The SMART Arm-alone group had a greater odds than controls of achieving a MCID (GenOR 1.31 95% CI 1.05–1.57).

Conclusion: SMART Arm training may increase the likelihood of recovery compared with usual therapy alone.

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A Very Early Rehabilitation Trial (AVERT): Outcome at 12 Months

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Background and Rationale: We found that a very early intensive out-of-bed mobilisation (VEM) protocol after stroke compared to usual care was associated with a reduction in odds of a favourable outcome at 3 months. We report pre-specified analyses to determine whether VEM post stroke results in better outcomes at 12 months when compared to usual stroke unit care.

Methods: We performed a prospective, parallel group, assessor-blinded, multi-centre, clinical trial with the following inclusion criteria: admission within 24 hours of stroke and physiological parameters within pre-set limits. Treatment with rt-PA was allowed. Patients with severe premorbid disability and/or severe comorbidities were excluded. Patients were randomised to VEM or usual care. The intervention, delivered by a physiotherapy/nurse team, started within 24 hours and continued for a maximum of 14 days. Analyses were intention-to-treat. Pre-specified adjusted analyses for 12 month outcomes were: (i) mRS with subgroup analyses for age, stroke severity, stroke type, treatment with rtPA, time to first mobilisation and geographic region; (ii) time days to walking unassisted; (iii) deaths; and (iv) non-fatal serious adverse events.

Results: From July 2006 to October 2014, 2104 patients were recruited (Australia, n = 1054; New Zealand, n = 189; Malaysia, n = 123; Singapore, n = 128; UK, n = 610). Patient demographics: age, median (IQR) age: 72.5 (62.9–80.3) years; male: 61.1%; first stroke: 81.8%; ischaemic stroke 87.7%; NIHSS median (IQR): 7 (4–12); rt-PA treated 24.1%. There were 52 (2.5%) patients with missing data for the 12 month mRS. Data lock was completed in December 2015, with analyses underway.

Conclusion: Results will provide important information on the 12 month outcomes of a very early intensive rehabilitation protocol following stroke.