



**Service Priorities and Programmes**  
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**Clinical trial report: The treatment effectiveness of Robotic Lower Limb equipment (Erigo) in subacute stroke patient**

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**Introduction**

Chernikova et al (2008) recruited 16 acute ischaemic stroke (IS) patients (mean age 61.3±10.4 years) with NIHSS score 11 to 22 in the first 72 hours from stroke onset to test efficacy of early activation by the Erigo. Before and after intervention all patients were assessed by NIHSS score, Rankin and Ashworth scales, CT or MRI of the brain. The ANOVA analysis showed that the active treatment group had a better recovery than the patients of the control group ( $p < 0.05$ ). There was increase in the level of consciousness in these patients. They observed spasticity in the paretic leg only in 1 patient of the active treatment group and in 4 patients in the control group. Rybalko et al (2009) evaluated 58 IS patients. The treatment group received standard rehabilitation therapy and Erigo training and the control group received only standard rehabilitation program. 6 marks paresis degree scale and Barthel ADL Index were used to estimate the efficacy of rehabilitation. Neurological and Haemodynamics monitoring was performed during the training procedure on Erigo. They concluded that early mobilization with tilt table Erigo provided restoration of motor functions in larger volume, than standard program of rehabilitation. Arterial blood pressure and cerebral blood flow indexes remained within standard that proved the safety of the method. Application of tilt table "Erigo" had positive influence on the cerebral blood flow.

**Objectives**

Observe the treatment effectiveness of Erigo in subacute stroke patient

**Methodology**

5 subjects were selected and put on Erigo with tilting angle: 60°, hip extension: 0°, movement pattern: sine wave, knee ROM: 0° -30° (symmetric), cadence: 20 steps/min and force 100% (symmetric). 5 sessions of 30 minutes continuous passive cycling exercise in tilted position within in-patient period. Muscle strength of the affected limb, Modified Functional Ambulatory Category (MFAC), Modified Rivermead Mobility Index (MRMI) and Modified Ashworth Scale (MAS) pre and post intervention

scores were measured

### **Result**

We observed that 4 out of 5 subjects showed mild improvement in hip flexor, hip extensor, knee extensor and ankle planter flexor and 3 out of 5 subjects showed mild improvement in knee flexor, ankle dorsi-flexor and MFAC score. 2 out of 5 subjects shown mild increased in MAS score. All 5 subjects increased in MRMI score and found no postural BP drop during intervention. We would postulate that there were mild increase in lower limb control/muscle power, MRMI, MFAC, and MAS of stroke patient. The equipment showed no adverse effect (postural BP drop) and may be safe and effective in treating subacute stroke patient. Further study is needed to prove the effectiveness of Erigo