



**21st EUROPEAN CONGRESS OF
PHYSICAL & REHABILITATION MEDICINE**

1-6 May, 2018 Radisson Blu
Hotel Lietuva
Vilnius • Lithuania

Thursday May 3, 2018

Hall ALFA

08.30-10.30

JOINT SESSION

ISPRM – ESPRM – SOFMER – RBSPRM – LSPRM

Part I

Persons with Stroke (SISC)-Part I

Introduction: Jorge LAINS, Alain DELARQUE

Chairpersons: Thierry LEJEUNE, Katharina STIBRANT SUNNERHAGEN

Stroke and PRM

Katharina STIBRANT SUNNERHAGEN

The stroke care process in some European countries

Turkey, Ayse KÜÇÜKDEVECİ

Russia, Galina IVANOVA

Latvia, Guna BERZINA

10.30-11.00

Coffee break

11.00-13.00

JOINT SESSION

ISPRM – ESPRM – SOFMER – RBSPRM – LSPRM

Part II

Persons with Stroke (SISC)-Part II

Chairpersons: Thierry LEJEUNE, Katharina STIBRANT SUNNERHAGEN

Robotics and gait rehab

Marco FRANCESCHINI

Robotics and upper limb rehab

Thierry LEJEUNE

AMOBES (Active Mobility Very Early After Stroke) A Randomized Controlled Trial

Alain YELNIK

Sense of upright position after stroke

Dominic PERENNOU

13.00-14.30

Lunch break

Robotics and upper limb rehabilitation after stroke

Thierry Lejeune

Collaborator: S. Dehem, M. Gilliaux, G. Stoquart, C. Detrembleur

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Cliniques universitaires Saint-Luc, Service de médecine physique et réadaptation, Brussels, Belgium

This talk will be divided in two parts: a general introduction about robotic assisted upper limb rehabilitation after stroke; and, the presentation of the result of a RCT.

Introduction/Background

Upper limb (UL) robotic assisted therapy (RAT) is promising for stroke rehabilitation. It allows to apply motor relearning principles. Systematic reviews show effectiveness at the early and chronic stage. In addition to conventional therapy (CT), RAT has been shown to decrease UL impairment. When RAT is provided as partial substitution of CT, it is supposed to be at least as effective as CT. A few studies demonstrated that RAT might be more effective than CT. Its effectiveness has been less studied in the acute phase than in the chronic one. Assessments have usually been restricted to the two first domains of the International Classification of Functioning framework (ICF).

RCT

Aim: To perform a pragmatic multicentric single-blind randomized controlled trial to evaluate UL RAT effectiveness, used as partial substitution to CT, in acute stroke patients, following the three ICF domains.

Methods: Forty-five acute stroke patients were randomized into two groups (CT group, n=22 and RAT group, n=23). Both interventions were dose-matched about treatment duration and lasted nine weeks. The CT group followed a standard rehabilitation. In the RAT group, four sessions of CT (25%) were substituted by RAT each week. RAT consisted of moving the paretic UL along a reference trajectory while the robot provided an assistance as needed. A blinded assessor evaluated patients before, just after intervention and at 6-month post-stroke according to ICF.

Results: Twenty-eight patients were assessed after intervention. UL motor control (Fugl Meyer +16%; $p=0.05$) and gross manual dexterity (Box and Block test +10 blocks; $p=0.02$) improved significantly more in RAT group than in CT group at 6-month post-stroke. Ability to perform activities and social participation tended also to improve more in RAT group ($p=0.06-0.16$).

Conclusion: RAT during acute stage of stroke rehabilitation is more effective than CT to improve UL motor control and gross manual dexterity, and is at least as effective as CT for activity and participation.