Combined Traditional and Robot-Assisted Rehabilitation for Intensive Care Unit Acquired Weakness: an In-Patient Case Report

A Chillura, F Tartamella, MF Pisano, E Clemente, M Lo Scrudato, G Cacciato, S Portaro, RS Calabrò, A Naro.

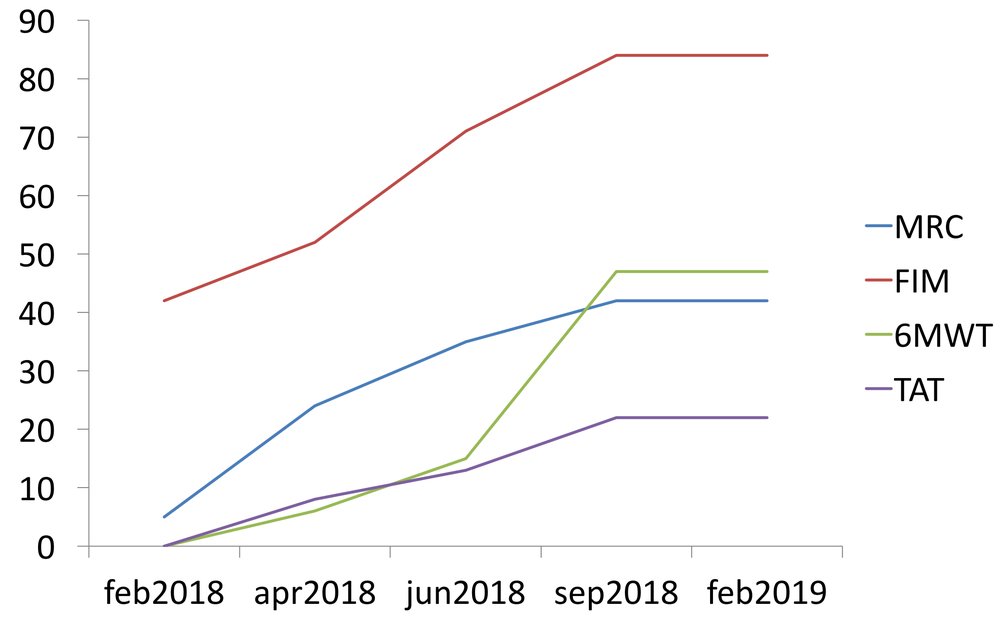
IRCCS Centro Neurolesi Bonino Pulejo, Messina, Italy

Introduzione

Intensive Care Unit acquired weakness (ICUAW) refers to "a wide variety of disorders characterized by acute onset of neuromuscular impairment for which there is no other plausible cause than the critical illness, greater than that resulting from prolonged bedridden, and typically associated with multiorgan failure". Traditional physiotherapy is currently the best approach to manage patients with ICUAW, aimed at facilitating the recovery of impaired sensory, motor, and cognitive skills. Conversely, there is currently no evidence on the usefulness of neurorobotics in managing ICUAW.

Metodi

We report on a patient with ICUAW, who was provided with an intensive, in-patient regimen, i.e. conventional plus robot-assisted physiotherapy. A 56-years-old male who was unable to stand and walk independently as a result of ICUAW was provided with daily sessions of conventional physiotherapy for two months. Given that the patient showed a relatively limited improvement, he was provided with daily sessions of Lokomat, Armeo and virtual reality-aided rehabilitation for other four months, beyond conventional physiotherapy.



Feb-2018: admission

Apr-2018: after conventional physiotherapy training

Jun-2018: after robotized training

Sep-2018: after robotized training plus sessions of physiotherapy aided by a virtual environment -> discharge

Feb-2019: follow-up visit

Risultati

Outcome measures achieved throughout the interventions are summarized in figure. At the discharge (six months after the admission), the patient reached the standing station and was able to ambulate with double support.

Conclusioni

Our case suggests that patients with ICUAW should be intensively treated in in-patient regimen with robot-aided physiotherapy. Even though our approach deserves confirmation, the combined rehabilitation strategy may offer some advantage in maximizing functional recovery and containing disability.

Bibliografia

Hermans G, Berghe GV. Clinical review: intensive care unit acquired weakness. Crit Care 2015;19:274-282.

Richard D, Zorowitz MD. Intensive care unit acquired weakness: A Rehabilitation Perspective of Diagnosis, Treatment, and Functional Management. Chest. 2016;150(4):966-971.

Calabrò RS, Cacciola A, Bertè F, Manuli A, Leo A, Bramanti A, Naro A, Milardi D, Bramanti P. Robotic gait rehabilitation and substitution devices in neurological disorders: where are we now? Neurol Sci. 2016;37(4):503-14.

Sin

50° CONGRESSO NAZIONALE
12 - 15 OTTOBRE 2019 – BOLOGNA