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POS063

The RAPPER II Trial – functional exercise in the REX powered walking aid in people with spinal cord injury

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Relevance: Prospective research describing the results of upright physiotherapy in people with spinal cord injury (SCI) using an advanced technology platform.

Purpose: To assess the safety and effectiveness of a shoulder and trunk physiotherapy regime in people with chronic SCI using the REX powered walking aid.

Methods/analysis: A prospective, international, multicentre, open label, single arm, registry study in 120 volunteers supervised by an independent CRO; levels C4 to L5; intact skin; no autonomic dysreflexia; height 1.42 m to 1.93 m; limb size appropriate for the REX; weight 40 to 100 kg; can use a joystick/T-bar; no lower limb joint contractures; capacity for consent.

Clinicaltrials.gov: NCT02417532.

UK NIHR/NRES East Midlands Approval Number: 15/EM/0196.

Primary outcomes: completion of transfer; completion of exercise regime; serious adverse events (SAE).

Secondary outcomes: time of transfer; autonomous control; Timed Up and Go (TUG) Test; Quality of Life (QoL) and satisfaction questionnaires.

Results: Interim analysis of the first 20 patients. All could transfer (mean 7 minutes 19 seconds), 10 without help or with one assistant. 8 with two; 2 needed a hoist. 19 completed the complete shoulder and trunk exercise program. There were no SAEs.

19 completed the TUG Tests (mean 5:12 minutes); 16 with one helper. 18 achieved autonomous control of the device. Satisfaction questionnaires showed high levels of acceptance of the REX and the QoL outcomes showed benefits after the intervention.

Discussion and conclusions: Patients with SCI benefit physically and psychologically from standing and walking particularly if they can also exercise in the upright position. The REX powered walking aid allows people with SCI to stand and walk without other aids. REX supports 60% of the user's body weight and is inherently stable throughout any point of its movement so therapists can work with the user on a variety of exercises. Combined with assisted ambulation in a REX, upright function allows wheelchair users to regain some of the independence lost through their SCI.

This report shows that functional shoulder and trunk physiotherapy in patients with SCI is achievable, safe and effective in a REX. This is unique among powered assisted ambulation devices. Users were able to gain control of the REX and use it to move, quickly and easily, and there was a very high overall level of acceptability of the device. In addition, only one therapist was needed to successfully assist the completion of the intervention in the majority of cases, which has significant resource implications.

Impact and implications: This report has demonstrated the utility and safety of physiotherapy in the REX powered walking aid in a group of people who have significant neurological impairment. The impact that wide adoption of this technology in a rehabilitation setting could have is potentially huge. There are physical and psychological benefits to the users that will lead to fewer complications of SCI and unplanned secondary admissions to SCI centres. Also there is a significant positive resource implication for therapists working with this group of people because of the assistive nature of the technology not only for the user but also for the therapy team.

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POS064

Comparing the validity of the sub-maximal effort tourniquet test to the numerical pain rating scale in patients with chronic low-back-pain

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Relevance: The relevance of this research is three-fold and fits in with congress themes.

Primarily, the research attempts to validate a clinical pain assessment tool, promoting evidence based clinical practice in the field of pain management.

Secondly the Sub-maximal Effort Tourniquet Test (SETT) is also a means of further involving service users (patients) directly in their treatment and health-care journey. It allows patients to give practitioners better feedback regarding both pain levels and the success, or lack thereof, of selected interventions.

Finally the area of pain management and reciprocally pain assessment has huge implications on health economics; with