FUNCTIONAL RECOVERY IN CRITICALLY ILL CHILDREN. THE “WEE-COVER” PILOT STUDY
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Introduction: Improved mortality amongst critically ill adults has lead to the recognition of a “post-intensive care syndrome”, a phenomenon of acquired functional, cognitive and mental health sequelae amongst survivors(1). A variety of long-term sequelae ranging from significant functional disability to neuropsychological impairments can be seen in up to 69% of adult survivors of critical illness, resulting in significant economic burden to patients and the health care system2-3. While it is recognized that children can also suffer neurocognitive and functional morbidity following critical illness4, there is a paucity of evidence on the impact of a Pediatric Critical Care Unit (PCCU) stay on their recovery5. Prolonged immobility and ICU-acquired weakness have been implicated as risk factors for poor functional recovery in these children6.

Objectives: To describe the functional recovery following prolonged immobility and delayed rehabilitation in critically ill children. To explore the predictors of impaired functional recovery following immobilization in critically ill children.

Methods: Single Centre, Prospective Observational Pilot Study. Primary outcome is feasibility (i.e. enrolment rate, protocol adherence and ability to execute study procedures). Secondary outcomes include the following: i) Functional Recovery over time (at baseline, 3 and 6 month follow-up), as measured by the following validated tools: PEDI*, PEM-CY**, POPC*** and PCPC****; ii) PCCU outcomes: mortality, length of stay, ventilator-free days, and adverse events attributable to immobility (e.g. PCCU-acquired weakness); iii) feasibility and reliability of a standard manual muscle strength test typically used to screen for ICU-AW in adults, i.e. Medical Research Council (MRC) score; iv) Parental Stress Index at 3 months; v) Muscle strength and aerobic fitness testing (using Continuous Cycling test), in an age appropriate subgroup. This study was approved by the institutional REB.

Results: We recruited our total sample size of 30, between October 2012 to April 2013, ahead of expected. Of 255 patient’s screened, 37 fulfilled eligibility criteria, and 33 (89%) consented to participate. Baseline functional outcomes were measured in 28 (93%) of patients. Follow-up rate is 95% at 3 months and 70% participants at 6 months to date. Main observed limitations to follow-up include underlying chronic complex condition, and patient’s proximity to hospital. Exercise testing was feasible in only 5 (16%) of participants. Primary reasons that exercise testing could not be conducted were low cognitive age and functional ability. Further analysis of secondary outcomes and complete follow-up data is in progress.