**ACUTE REHABILITATION IN CRITICALLY ILL CHILDREN: A MULTI-CENTRE OBSERVATIONAL STUDY**

Choong, Karen¹; Fraser, Douglas²; Hutchison, James³; Joffe, Ari⁴; Jouvet, Philippe⁵; Menon, Kusum⁶; Pullenayegum, Eleanor⁷; Ward, Roxanne⁸

¹McMaster University, Pediatrics and Critical Care, Hamilton, Canada; ²London Health Sciences Centre, Pediatrics and Critical Care, London, Canada; ³Hospital for Sick Children, Pediatrics and Critical Care, Toronto, Canada; ⁴Stollery Children’s Hospital, University of Alberta, Pediatrics and Critical Care, Edmonton, Canada; ⁵CHU Ste-Justine, Pediatrics, Montreal, Canada; ⁶Children’s Hospital of Eastern Ontario, Pediatrics, Epidemiology and Biostatistics, Ottawa, Canada; ⁷University of Toronto, Child Health Evaluative Sciences, Toronto, Canada; ⁸Children’s Hospital of Eastern Ontario Research Institute, Pediatrics, Ottawa, Canada

**Introduction:** Emerging literature suggests that Intensive Care Unit-based early mobilization is feasible, safe, well tolerated, improves patient important outcomes and is cost effective in critically ill adults. However, pediatric specific data is lacking. Prior to embarking on prospective trials of early mobilization in children, evidence on whether children are at risk of similar morbidities as adults, and an evaluation of current rehabilitation practices within Pediatric Critical Care Units (PCCUs) is required.

**Objectives:** The primary objectives of this multi-centre observational study were to evaluate acute rehabilitation practices in tertiary care PCCUs across Canada, the frequency of early mobilization, and determinants of mobilization in this population.

**Methods:** Retrospective cohort study in 6 Canadian, tertiary care PCCUs. Children aged under 17 years admitted to PCCU during a winter and summer month of 2011 respectively, with a greater than 24 hour length of stay. The primary outcome of interest was the nature and timing of PCCU rehabilitation practices. Rehabilitation was classified according to mobility and non-mobility physical therapy (PT) interventions. Predictors of mobilization, and the time to mobilization were evaluated through regression and time dependent survival analyses respectively.

**Results:** The commonest form of rehabilitation provided in PCCU was physical therapy (45.5% patients) followed by occupational therapy (4.5%), and speech and language therapy (1.5%). Rehabilitation consisted primarily of non-mobility interventions (69.7% of sessions), most frequently in the form of chest physiotherapy (42.7% of sessions). The median time to mobilization was 2 days (IQR 1-6) as compared to 1 day for non-mobility interventions (IQR 1-3). Only 57 (9.5%) patients received early mobilization. Regression analyses revealed that increasing age, admission during winter, neuromuscular blockade and sedative infusions were associated with an increased likelihood of receiving mobility therapy. Increasing age was a predictor of early mobilization, while neuromuscular blockade was associated with delayed mobilization. No significant differences in adverse events were found between non-mobility and mobility interventions.