Long-Term Morbidities in Children with Critical Illness: Gaps and Opportunities

Stephanie Senna, BS, MRes, Chengsi Ong, MS, Zhi Min Ng, MBBS, MRCPCH, Jan Hau Lee, MBBS, MRCPCH, MCI

Abstract

Introduction: Improved mortality rates in paediatric critical care may come with the cost of increased morbidity. Goals of modern paediatric intensive care unit (PICU) management should focus on restoring long-term function of paediatric critical illness survivors. This review outlines our current knowledge on trajectories and risk factors of long-term morbidities in PICU survivors. Specifically, we aimed to identify current limitations and gaps in this area so as to identify opportunities for future investigations to reduce the burden of morbidities in these children. Materials and Methods: A review of primary studies published in PubMed, EMBASE, and Cochrane databases in the last decade (2008-2017) describing long-term morbidities in PICU survivors was conducted. Results: Children surviving critical illness continue to experience morbidities after discharge. A set of risk factors modify their long-term trajectories of recovery, with some children achieving their premorbid level of function, while some others deteriorate or die. Limitations in current methodologies of morbidity research impair our understanding on the causes of these morbidities. Opportunities for future endeavours to reduce the burden of these morbidities include identifying patients who are more likely to develop morbidities, evaluating the efficacy of early rehabilitation, identifying patients who might benefit from tight glycaemic control, characterising the optimal nutritional intervention, and improving management of increased intracranial pressure. Conclusion: Survivors of paediatric critical illness experience differing trajectories of recovery from morbidities. Future research is needed to expand our repertoire on management strategies to improve long-term function in these children.


Key words: Intensive Care, Outcomes assessment (healthcare), Paediatrics

1Duke-NUS School of Medicine, Singapore
2Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
3Department of Nutrition and Dietetics, KK Women’s and Children’s Hospital, Singapore
4Department of Paediatrics, KK Women’s and Children’s Hospital, Singapore
5Children’s Intensive Care Unit, KK Women’s and Children’s Hospital, Singapore
6Office of Clinical Sciences, Duke-NUS School of Medicine, Singapore

Address for Correspondence: Dr Lee Jan Hau, Children’s Intensive Care Unit, KK Women’s and Children’s Hospital, 100 Bukit Timah Road, Singapore 229899.
Email: lee.jan.hau@singhealth.com.sg