

PERIOPERATIVE MANAGEMENT OF CHILDREN WITH NEUROMUSCULAR DISORDERS: PROSPECTIVE STUDY

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Abstract

Background: Children with neuromuscular diseases (NMDs) often display altered vital functions mainly respiratory muscle weakness which increase the risk of postoperative pulmonary complications after general anesthesia or sedation. Non-invasive ventilation (NIV) associated with cough assistance can successfully reduce these complications. The aim of this study was to report our experience with a peri-operative protocol that consists in using NIV combined with mechanical insufflation-exsufflation (MI-E) to improve the postoperative outcome of children with NMD. Methods: To this end, we conducted a multicenter, observational study on consecutive pediatric patients with NMDs undergoing anesthesia or sedation for surgical and diagnostic procedures from December 2015 to December 2018 in 13 Italian hospitals. Results: We found that 89% of the 167 children included in the study (mean age 8 y), were at risk of respiratory complications, due to the presence of at least one respiratory risk factor. In particular, 51% of them had preoperative technology dependence, while 25% displayed severe dysphagia. Average hospital length of stay (LOS) was 12 (± 17) days. Despite the complexity of these children, only 26 patients developed intraoperative surgical complications, whereas 14 developed postoperative respiratory complications. No patient needed tracheostomy. The occurrence of long-term mechanical ventilation (MV), severe scoliosis or dysphagia in the preoperative period and the use of cough assistance or invasive MV (IMV) longer than 24 h in the postoperative period were all associated with prolonged hospital LOS. Conclusion: A carefully planned, multidisciplinary approach for the perioperative management of pediatric NMD patients can help prevent and resolve postoperative complications.

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