

00173 Factors Associated With Successful Decannulation After Paediatric Tracheostomy

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Aims: Children with long-term tracheostomy are at higher risk of complications. We aim to describe factors associated with successful decannulation in children undergoing tracheostomy. We hypothesized that age, pre-existing comorbidities, indications for tracheostomy and pre-tracheostomy ventilatory requirements affect eventual decannulation.

Methodology: A retrospective analysis was conducted on all children ≤ 16 years old who had tracheostomy performed from 2006-2016. Demographics, pre-existing comorbidities, indications for tracheostomy and pretracheostomy ventilatory requirements were collected. Primary outcome was successful decannulation. Secondary outcomes were ventilation and oxygen requirements at hospital discharge, hospital and ICU length of stay (LOS). Patients were followed up till January 2018 or death, whichever occurred earlier. A stepwise multivariate regression model was used to identify factors associated with decannulation.

Result: There were 106 patients, with a median age at tracheostomy of 7.5 months [interquartile range (IQR) 2.0-45.0]. 81 (76.4%) had a pre-existing comorbidity, most commonly prematurity (29, 27.4%), cardiac (27, 25.5%) and respiratory diseases (24, 22.6%). 45 (42.5%) had pre-existing failure to thrive (FTT), as defined by weight <3 rd centile for age and gender. Median PIM₃ probability of death score was 5.9% (IQR 1.5- 12.3). In-hospital mortality was 14/106 (13.2%). None were directly related to tracheostomy. Median ICU and hospital LOS was 25.0 (IQR 13.0-67.5), and 74.5 days (IQR 39.25-138.0), respectively. 40/92 (43.5%) required mechanical ventilation at discharge. 12/92 (13.0%) required supplemental oxygen at discharge. 41 (38.7%) patients were decannulated successfully, at median of 408 days (IQR 170-1153) posttracheostomy. Decannulation was less common in patients with FTT [11/41 (26.8%) vs 34/65 (52.3%), $p=0.017$] and neurological comorbidities [4/31 (9.8%) vs 18/65 (27.7%), $p=0.049$]. These remained significant on multivariate analysis [FTT: adjusted odds ratio (aOR) 0.34 (95% confidence interval (CI): 0.14-0.79), $p=0.014$; neurological comorbidity: aOR 0.29 (95% CI: 0.08-0.89), $p=0.044$].

Conclusion: Neurological comorbidities and failure to thrive were risk factors for failure of decannulation after tracheostomy.