Factors Influencing Reintubation in Self Extubated Pediatric Intensive Care Unit Patients

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Introduction

- Pediatric patients intubated that self-extubate may be particularly susceptible to reintubation
- Reintubation is associated with several adverse outcomes, including[1,2]:
  - Increased hospital and ICU length of stay (LOS)
  - Increased risk of infections
  - Increased risk of mortality
- Limited data available describing the pediatric population's risk factors for reintubation
- Identifying risk factors can allow for better monitoring and response in cases of self-extubation

Objectives

To identify risk factors for reintubation following self-extubation in pediatric patients

Methods

- Retrospective, single center, cohort study consisting of chart review of intubated pediatric patients in the pediatric intensive care unit (PICU)
- Assessment included baseline demographics, reasons for intubation, length of intubation, use of rescue respiratory modalities, need for re-intubation after initial extubation, and PICU and hospital LOS
- Study time period: January 2010 - December 2017
- T-test analyzed continuous variables and Chi-square tests analyzed categorical variables, respectively

Results

Figure 1:

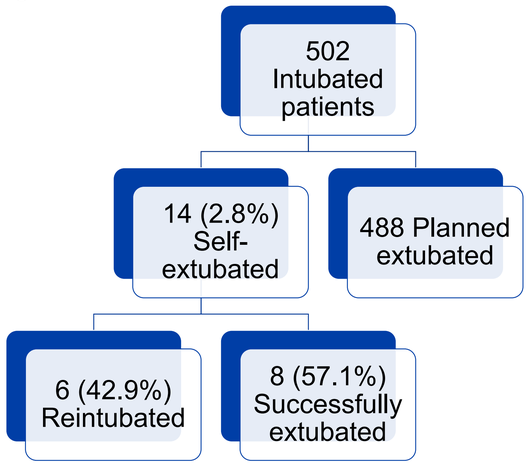
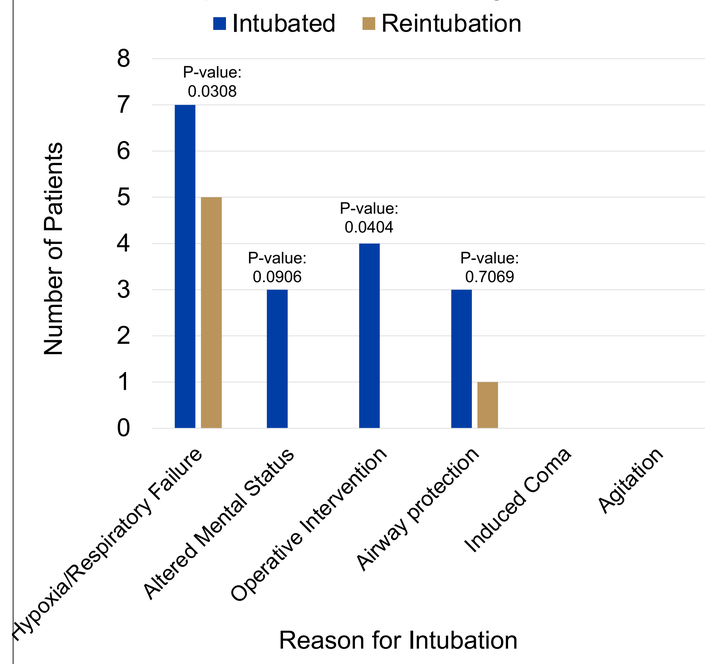


Table 1: Baseline demographics. n=14

Female, n (%)	8 (57.1)
Age at admission, months	Mean 30.2 Median 11.5

Figure 2: Rates of Intubation and Subsequent Reintubation by Reason



- Of the 6 patients reintubated, 3 received rescue therapy

Table 2: PICU and Hospital LOS by Reintubation

	Reintubation	No Reintubation	P-value
Mean PICU LOS, days (SD)	25.67 (21.43)	4.13 (3.14)	0.0148
Mean hospital LOS, days (SD)	25.83 (21.21)	7.38 (6.12)	0.0359

- All 14 patients were discharged

Table 3: Reintubation by Age at Admission

	Reintubation	No Reintubation	P-value
Mean age at admission, months (SD)	12.33 (16.51)	43.63 (51.87)	0.1445

Conclusions

- Identifying factors that can help predict self-extubated patients requiring reintubation is crucial
- Predilection for younger patients to be more likely to be reintubated following self-extubation
- Patients who are intubated due to hypoxia or respiratory failure have a significantly increased risk of requiring reintubation
- Patients with surgery/operative intervention were significantly less likely to be reintubated
- Patients who required reintubation had a significantly longer LOS
- Additional studies, involving larger retrospective reviews, are needed to further corroborate these findings

References

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2. 2. da Silva P, Reis M, Fonseca T, Fonseca M. Predicting Reintubation After Unplanned Extubations in Children: Art or Science?. *J Intensive Care Med*. 2016;33(8):467-474. doi:10.1177/0885066616675130

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