Risk Factor Analysis for 30-Day Readmission Rates of Newly Tracheostomized Children

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RISK FACTOR ANALYSIS FOR 30-DAY READMISSION RATES OF NEWLY TRACHEOSTOMIZED CHILDREN

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ABSTRACT

Objective: Pediatric patients undergo tracheostomy for a variety of reasons; however, medical complexity is common among these patients. Although tracheostomy may help to facilitate discharge, these patients may be at increased risk for hospital readmission. The purpose of this study was to evaluate our institutional rate of 30-day readmission for patients discharged with new tracheostomies and to identify risk factors associated with readmission.

Study Design: A retrospective cohort study was conducted for all pediatric patients ages 0-18 years with new tracheostomies at our institution over a 36-month period.

Methods: A chart review was performed for all newly tracheostomized children from 2013 to 2016. We reviewed documented readmissions within 30 days of discharge, reasons for readmission, demographic variables including age and ethnicity, initial discharge disposition, co-morbidities, and socioeconomic status estimated by mean household income by parental zip code.

Results: 45 patients were discharged during the study time period. A total of 13 (28.9%) required readmission within 30 days of discharge. Among these 13 patients, the majority (61.5%) were readmitted for lower airway concerns, many (30.8%) were admitted for reasons unrelated to tracheostomy or respiratory concerns, and only one patient (7.7%) was readmitted for a reason related to tracheostomy. Age, ethnicity, discharge disposition, co-morbidities, and socioeconomic status were not associated with differences in readmission rates. Patients readmitted within 30 days had a higher number of admissions within the first year.

Conclusion: Pediatric patients with new tracheostomies are at high risk for readmission after discharge from initial hospitalization. The readmissions are most likely secondary to underlying medical complexity rather than issues related specifically to the tracheostomy procedure.

BACKGROUND

Previous studies have shown that children with tracheostomy dependence have high utilizations of hospital resources, including overall number of unplanned admissions and amount of hospital resources per admission. Pediatric patients with new tracheostomies at our institution are high risk for readmission. Pediatric patients have high rates of readmission within the first 6-12 months after tracheostomy trap (tracheostomy breakdown). Age, ethnicity, discharge disposition, co-morbidities, and socioeconomic status were not associated with differences in readmission rates.

METHODS

• IRB approval obtained from Nemours/Wilmington, DE IRB.
• Retrospective chart review from June 2013 through June 2016 of all patients discharged with new tracheostomies.
• Excluded if they were decannulated or died prior to discharge, or if they were transferred to another institution.

RESULTS

- 45 patients included in the study.
- 28.9% (13/45) required readmission within 30 days of discharge.

Reason for Readmission

- Tracheostomy related
- Respiratory related
- Non-respiratory related

Figure 1: Percentage of patients requiring readmission within the first 30 days after discharge after tracheostomy by indication

- Excluded if they were decannulated or died prior to discharge, or if they were transferred to another institution.

CONCLUSIONS

Pediatric patients with new tracheostomies are at high risk for readmission after discharge from initial hospitalization. However, these readmissions are rarely related to the tracheostomy itself and more likely related to underlying medical complexity and other medical conditions. Although our study identified trends and was unable to identify statistically significant risk factors for readmission, our results suggest that outpatient care may have more of an impact on the rate of readmission over inpatient care. Risk factors such as muscle function and demographics. Given the current attention and interest on 30-day hospital readmissions rates, a number of findings in our institution is important as it establishes a baseline for this complex population after this procedure allowing for comparison with other institutions. As these patients have high levels of complexity and risk, their readmission rates are not comparable to healthier children undergoing other surgical procedures.