Pediatric Epiglottitis: Predictors of Conservative Treatment

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Introduction

Epiglottitis is a potentially lethal infection in children. Due to the increasing rarity of this disease, suspicion for the diagnosis must remain high in order for prompt recognition and treatment. Though epiglottitis has decreased in incidence after the introduction of the Haemophilus influenzae type b vaccine, it remains as a prevalent entity with a shifting prevalence of causation.

Reviewing the literature in a chronological order reveals paradigm shifts in management. Historically, treatment protocols for epiglottitis involved elective intubation of the airway. Rates of intubation and tracheotomy for this disease continue to decline.

We sought to examine a larger sample size by evaluating trends via a national database. By looking at data in aggregate, we can accumulate large sample sizes to provide statistically significant, meaningful results. Analysis of a large national database capturing both pediatric and adult epiglottitis hospital admissions from 1998-2006 show that epiglottitis continues to persist as an important disease, and that there are definite trends towards conservative management. These findings led to our clinical question: what are the specific variables that predict which pediatric patients will require their airway to be secured?

Methods

The Kids Inpatient Database (KID) from the Agency for Healthcare Research and Quality is a data set from the Healthcare Cost and Utilization Project, designed to analyze pediatric-specific discharge data. The discharge data is compiled from 44 states and represents over 2 million pediatric inpatient discharges. (http://www.hcup- us.ahrq.gov/kidoverview.jsp)

The KID (2006 and 2009) was searched using ICD-9 CM codes for acute epiglottitis with (464.30) and without (464.31) obstruction. Demographics and hospital characteristics of pediatric patients who required airway intervention (defined as intubation or tracheotomy) were compared to those who were managed conservatively without airway intervention.

Table 1: Table of Hospital Discharge Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention N=159</th>
<th>No Intervention N=730</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE, mean (SD)</td>
<td>6.13 (2.86)</td>
<td>7.79 (3.0)</td>
<td>0.078</td>
</tr>
</tbody>
</table>

Conclusions

• The majority of pediatric epiglottitis patients are currently managed without intubation with low mortality.
• Conservatively managed admissions are more likely for non-emergent presentations at non-pediatric, non-teaching, small/medium sized hospitals, and are lower cost.
• Additional studies are needed to further characterize patients which would be appropriate for conservative management.

References