Single Dose Etomidate for Intubation in the Trauma Patient
Society of Academic Emergency Medicine, 2010 Annual Meeting, Phoenix, AZ

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Introduction
Etomidate’s favorable hemodynamic profile make it a popular sedative agent used in Rapid Sequence Intubation (RSI) especially in patients with borderline hypotension. Recent evidence of adrenal suppression from single-dose etomidate led us to limit its use in trauma patients in 2006.

Objectives
To determine if the decrease in etomidate use in trauma patients led to any change in patient mortality, Length of Stay (LOS), ICU days, incidence of adrenal suppression and hypotension.

Methods
Design: Observational retrospective before and after policy change
Setting: Level 1 Trauma center with Emergency Medicine residency program
Patients: All intubated trauma patients from August 1, 2004 through December 31, 2008 in trauma registry
Exclusion criteria: None
Interventions: Liberal Etomidate Use from August 1, 2004 to June 30, 2006 compared with Limited Etomidate Use from July 1st, 2006 to December 31st, 2008.
Main outcome measure: Mortality was the primary outcome measured. Secondary outcomes measured were Length of Stay (LOS), ICU days, incidence of adrenal suppression and hypotension.

Results
Table 1. Baseline characteristics of intubated trauma patients

<table>
<thead>
<tr>
<th></th>
<th>Liberal Etomidate Use</th>
<th>Limited Etomidate Use</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etomidate</td>
<td>259 (59%)</td>
<td>205 (23%)</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Median Age (25%-75%)</td>
<td>39 (19-59)</td>
<td>38 (17-59)</td>
<td>0.403</td>
</tr>
<tr>
<td>Penetrating Injury</td>
<td>75 (17%)</td>
<td>167 (19%)</td>
<td>0.450</td>
</tr>
<tr>
<td>ISS (25%-75%)</td>
<td>26 (10-42)</td>
<td>25 (10-40)</td>
<td>0.259</td>
</tr>
</tbody>
</table>

No significant differences in patient characteristics

Table 2. Comparison of outcomes of intubated trauma patients

<table>
<thead>
<tr>
<th></th>
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<th>Limited Etomidate Use</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>132/440 (30.0%)</td>
<td>256/882 (29.0%)</td>
<td>0.848</td>
</tr>
<tr>
<td>ICU days</td>
<td>8.3 days</td>
<td>8.9 days</td>
<td>0.388</td>
</tr>
<tr>
<td>LOS</td>
<td>11.9 days</td>
<td>14.4 days</td>
<td>0.604</td>
</tr>
<tr>
<td>Adrenal Sup</td>
<td>30 (6.82%)</td>
<td>19 (2.16%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Hypotension</td>
<td>148 (33.7%)</td>
<td>397 (45.0%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

No significant differences in mortality, LOS, or ICU days
A significant decrease in adrenal suppression in the limited etomidate group
A significant increase in hypotensive events in the limited etomidate group

Limitations
• Groups were defined by time period instead of intubating agents to eliminate selection bias
• Hypotension was defined as any event within 24 hours after intubation
• Adrenal suppression testing was done at physician discretion
• Some charts were incomplete or incorrectly filled out
• Patients were selected from a single institution. Results may not apply to all populations

Conclusion
A significant reduction in the use of Etomidate in trauma patients was not associated with differences in mortality, ICU days, or hospital LOS. There was a decrease in adrenal suppression but an increase in hypotensive events.

Acknowledgements
Abdullah Hanifi & Eric Hendey – Data Collection
Krista Kaups, MD – Department of Surgery, UCSF Fresno