The Safety of Ketorolac in Pediatric Outpatient Penile Surgery

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Disclosures

• None
Background

Ketorolac

Outpatient penile procedures

Complications
Pediatric Health Information System (PHIS)

Males 3 months – 18 years

January 2010 – December 2017
Qualifying initial encounter

• Penile surgery as primary procedure

Procedures

• Circumcision
• Chordee repair
• Hypospadias repair
• Penoplasty
Exclusions

- Complex chronic conditions
- Intraoperative complications
Collected all **hospital-based** return encounters within 30 days including:

- ED visits
- Repeat surgeries
- IP admissions
Two Cohorts

Patients who received **ketorolac**

Patients who **did not** receive **ketorolac**
Outcomes

**Primary**
- Return for bleeding

**Secondary**
- Return for any reason
Statistical analysis

• Multivariable logistic regression incorporating significant covariates
Ketorolac at initial encounter

n = 190,665

86%

14%
Median age at initial procedure (years)

- No Ketorolac: 1.44
- Ketorolac: 3.58

p = <0.001*
Ketorolac at initial qualifying procedures

<table>
<thead>
<tr>
<th>Race</th>
<th>Ketorolac</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>White</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>Black</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>Other/multiple</td>
<td>85%</td>
<td>15%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Ketorolac</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>Not Hispanic/Latino</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>Unknown</td>
<td>91%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Return encounters < 30 days

Return for any reason

- Yes: 5%
- No: 95%

Return for bleeding

- Yes: 1%
- No: 99%
No association between ketorolac and return encounter

<table>
<thead>
<tr>
<th>Ketorolac Use</th>
<th>Return encounter</th>
<th>p-value</th>
<th>Return encounter with bleeding</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4.9%</td>
<td>0.259</td>
<td>0.3%</td>
<td>0.101</td>
</tr>
<tr>
<td>Yes</td>
<td>4.8%</td>
<td></td>
<td>0.4%</td>
<td></td>
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</tbody>
</table>
Ketorolac not associated with return in regression model

<table>
<thead>
<tr>
<th>Return encounter</th>
<th>Effect</th>
<th>Odds ratio</th>
<th>95% Wald Confidence Limits</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ketorolac (Yes vs No)</td>
<td>1.053</td>
<td>0.989</td>
<td>1.122</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return encounter with bleeding</th>
<th>Effect</th>
<th>Odds ratio</th>
<th>95% Wald Confidence Limits</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ketorolac (Yes vs No)</td>
<td>0.834</td>
<td>0.666</td>
<td>1.044</td>
</tr>
</tbody>
</table>
Limitations

- PHIS: billing claims database
- No control for surgeon decision making/surgery type
- Could not assess intraoperative details (dressing type)
- Only PHIS hospitals
- Did not examine efficacy of ketorolac
Conclusion

- Ketorolac not associated with increased risk of return visit following surgery
- Safe perioperative analgesic for pediatric penile surgeries