Catching the Red Eye: A Retrospective Review of Predictors of Retinal Hemorrhage in Non-Accidental Trauma

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Pediatric Trauma Society
San Diego, CA - 11/14/2019
Disclosures

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*We do not* intend to discuss an unapproved/investigative use of a commercial product/device in this presentation.
>3,500,000

>670,000*20%

>1,700
Retrospective Review
Level I Pediatric Trauma Center
Unwitnessed head injury
Admitted to Trauma
Jan 2015 – Dec 2018
Patients < 1yr
n=276

<table>
<thead>
<tr>
<th></th>
<th>RH+ (n=40)</th>
<th>RH- (n=133)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>5m</td>
<td>4m</td>
</tr>
<tr>
<td>Black race</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>95%</td>
<td>96%</td>
</tr>
<tr>
<td>Male</td>
<td>65%</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Public insurance</strong></td>
<td>69%</td>
<td>52%</td>
</tr>
<tr>
<td><strong>Positive skeletal</strong></td>
<td>33%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Skull fracture</strong></td>
<td>25%</td>
<td>71%</td>
</tr>
<tr>
<td>ICH</td>
<td>100%</td>
<td>93%</td>
</tr>
<tr>
<td>SDH</td>
<td>100%</td>
<td>38%</td>
</tr>
<tr>
<td>ISS</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>ISS 16+</td>
<td>78%</td>
<td>27%</td>
</tr>
<tr>
<td>GCS</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>GCS&lt;15</td>
<td>48%</td>
<td>23%</td>
</tr>
<tr>
<td>Child Abuse Team</td>
<td>100%</td>
<td>56%</td>
</tr>
<tr>
<td>Determined Abuse</td>
<td>93%</td>
<td>34%</td>
</tr>
<tr>
<td>Death</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Age (years) 3.87
Male sex 1.29
White race 1.08
Hispanic 1.52
Public insurance 2.07
ISS 16+ 8.38
GCS <15 3.91
+Skeletal survey 3.26
Skull fracture 0.14
ICH 6.88
SAH 1.15
SDH 133.93
EDH 0.34
EAH 0.73
Contusion 0.89

OR
GCS<15
Isolated Skull Fx
134x
4x
0.1x
Normal GCS + No SDH = No DFE

21% fewer DFEs (-36).
0 missed RH diagnoses.
29% diagnostic rate.
3.4 # needed to screen.
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