Non-Accidental Injury: an important cause of Paediatric Major Trauma

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Introduction

• Context
• Background
• Objectives
• Method
• Results/ Discussion
• Conclusion
• Recommendations
Bristol Royal Hospital for Children
Background

A profile of suspected child abuse as a subgroup of major trauma patients

Ffion C Davies,1 Timothy J Coats,2 Ross Fisher,3 Thomas Lawrence,4 Fiona E Lecky5

Introduction

Non-accidental injury (NAI) in children is an important cause of major injury. The Trauma Audit

Background
Background
Objectives

• Establish number of major trauma patients attending BRHC ED with child protection concerns and NAI.

• Identify the difference injury patterns of children with suspected NAI vs accidentally injured children
Method

• All major trauma patients from 27/04/14- 26/12/14 included.
• Review of electronic case-notes.
• Data collected:
  • Age
  • ISS
  • MOI
  • Injuries sustained
  • Child protection documentation
  • Imaging
  • Disposal
## Results

<table>
<thead>
<tr>
<th>Mechanism of injury</th>
<th>Number of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blunt object-to-head</td>
<td>7</td>
</tr>
<tr>
<td>Trampoline-related</td>
<td>4</td>
</tr>
<tr>
<td>Falls</td>
<td>42</td>
</tr>
<tr>
<td>Jet ski injury</td>
<td>1</td>
</tr>
<tr>
<td>Horse injuries</td>
<td>3</td>
</tr>
<tr>
<td>Push bike injuries</td>
<td>6</td>
</tr>
<tr>
<td>Road Traffic Accident</td>
<td>24</td>
</tr>
<tr>
<td>Suicide attempts</td>
<td>2</td>
</tr>
<tr>
<td>Drowning</td>
<td>3</td>
</tr>
<tr>
<td>Bouncy castle injuries</td>
<td>2</td>
</tr>
<tr>
<td>Non Accidental Injuries</td>
<td>13</td>
</tr>
<tr>
<td>Motocross Injuries</td>
<td>2</td>
</tr>
<tr>
<td>Burn</td>
<td>1</td>
</tr>
<tr>
<td>Foreign body ingestion</td>
<td>1</td>
</tr>
<tr>
<td>Rugby injuries</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>
Results

Age vs ISS

ISS

Age

Peninsula Trauma Network

Bristol Royal Hospital For Children

Severn Major Trauma Operational Delivery Network
# Results

<table>
<thead>
<tr>
<th>Age</th>
<th>Head</th>
<th>C-spine</th>
<th>Thorax</th>
<th>Abdomen/ Pelvis</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1-5</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>6-11</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12-15</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>16-19</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>11</td>
<td>2</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>
Results

• Child protection concerns raised in 31 cases
• 13 children suspected NAI
  • 9 isolated injuries: 7 head; 1 perineal tear; 1 rectal perforation
• Rest had severe multi-system trauma including:
  • 2 head injuries, 1 abdominal injury, 2 limb injuries, 3 chest injuries, 1 spinal injury
• 7/9 head injuries were < 1 YO
• 9% of the children with suspected NAI were <2 YO
Analysis of injury mechanism data shows a preponderance of road traffic collisions and falls of less than 2 metres.

10.1% of the patients are aged under 2 and were injured intentionally (recorded as Non-Accidental Injury).
Conclusion

• Findings support previous TARN data which suggests NAI as common cause of paediatric major trauma.

• Injury patterns are different in this group with increased proportion of head injury, especially among non-ambulant children.
Recommendations

• Improve awareness.
• Ensure staff are supported.
• Safeguarding team attend weekly trauma MDT.
• More research.
• Potential for TARN KPI for safeguarding such as:
  • Number cases that have documentation of safe-guarding being considered.
  • Time to Strategy meeting.
  • Speed of communication to social care about concerns.
Questions

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