Some painful statistics

(a pilot systematic video analysis study)

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• A pilot study looking at injury prevalence, mechanism, type and influencing factors during selected elite hockey competitions from 2013-14 using video analysis

• ‘Instrumental or mechanical science is the noblest and above all others the most useful, seeing that by means of it all animated bodies which have movement perform all their actions’. L. Da Vinci 1452-1519.
Video analysis

Angular Cephal Motion

190.00
180.00
170.00
160.00
150.00
140.00
130.00
120.00
110.00
100.00

L

R

Fig. 1.1

Transformed.

Fig. 1.2

Transformed.

Fig. 1.3

Transformed.
• We conducted a video analysis of all incidents in randomly selected FIH sanctioned tournaments during 2013 and 2014.
• An incident was recorded and logged if the match was interrupted by an umpire and a player appeared to be in pain or received medical treatment.
"How many times I gotta tell you? Don't pay any attention to which camera has the red light on!"
to achieve a better understanding of the injury mechanisms and
events leading up to high risk situations in elite hockey
• **Study Findings:**

• A total of **129 incidents** were recorded and documented **during 144 games**. (168 hours of actual game play) giving an incidence of 768 per 1000 hours of game play.

• 129 incidents per 1848 **player-match-hours** (pmh). (168 x 11)

• Injury incidence: **70/1000** pmh.

Injury numbers per half
Injury in the first and last 5 mins. of 1st half
Injury in the first and last 5 mins. of 2nd half
Injury by body area

- Face & head: 16%
- Arm & hand: 18%
- Leg and Knee: 18%
- Other: 19%
- Face: 11%
- Knee: 9%
- Hand: 9%
Mechanism

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Ball</th>
<th>Stick</th>
<th>Collision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57</td>
<td>23</td>
<td>22</td>
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Mechanism
17% due to collisions
5 % related to rough or dangerous play, misconduct or intentional offence.
8% during penalty corner play.
21% involved immediate physiotherapist / medical intervention.
Some mechanisms:

2 during reverse strike of ball

11 ball deflected up off stick

6 Stick to above shoulder (2 were shot follow-through)

23 unintentional lifted ball (not shooting)

10 penalty corner related. (2 above the waist)

5 whilst shooting

8 secondary to stick follow through
• Video analysis of elite match play in hockey: few data.
• Most data from small studies of football.
• **Bere T, et al.** Events leading to anterior cruciate ligament injury in World Cup Alpine Skiing: a systematic video analysis of 20 cases J Sports Med 2011;45:16 1294-1302


• However, there are few data regarding similar studies in Hockey and most are descriptive, directly observed and/or reported.


• **Goshima K et al.** Video analysis of anterior cruciate ligament injuries in sumo wrestling
  Br J Sports Med 2011;45:4 351
• Video footage of injury situations represents objective sources of information on the kinematics involved in elite hockey injury mechanism and may therefore be a valuable tool in the injury prevention process.
• Difficult to compare with other sports because of differing rules and equipment.
• Rules vary in medical pitch access, substitution, type of ball/equipment, refereeing / umpiring.
Thank You