Race-day fracture incidence in Irish professional flat and jump horse racing from 2011-2016

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Professional horse racing
- Competitive & popular but considered high risk
- High incidence of falls and injuries reported on race-days
- Fractures 2nd most common injury reported on race days

Flat racing
- Characterised by its high speed nature (up to \(~70\ \text{km/hr}^{-1}\) from a stall start and covering distances ranging from 1 to 4.4 km with no obstacles.

Jump racing
- Starts from a tape barrier
- Involves fences/hurdles
- Distance 3.2-7.2km

Jockeys must:
- Sit on a horse approx. 3m above the ground
- Uses muscular strength, endurance & balance to coordinate a dual partnership with the horse
Fracture rates reported recently in
- Australia (Hitchens et al., 2012; Curry et al., 2016)
- New Zealand (Bolwell et al., 2014)
- California (Hitchens et al., 2016)

However, last research in Europe was Rueda et al. 2010
- Ireland, Uk & France from 1999-2006

Aim
- Provide a comprehensive longitudinal analysis of fracture incidence from race-day Irish professional flat and jump jockey falls over the last six years
Methods

• A minimum of 2 designated Turf Club medical doctors attended all race meetings
• All race-day injuries including fractures recorded from 2011-2016
  • Standardised injury report form
• Senior Medical Officer collated all injury report forms after each race meeting.
• Injury Analysis
• Fracture rates & their 95% CI were calculated
  • /1,000 falls
  • /1,000 rides
  • /1,000 race meetings
• Examined changes in injury rates between 2011-2016
• Compared jump v flat racing
Results

• Jump > Flat
  • Rides
    • 1.96 v 0.20 /1,000 rides
    • IRR=9.80 [5.70-16.85]
  • Race Meetings
    • 149.4 V 13.93 /1,000 Meetings
    • IRR=10.73 [6.24-18.44]

• Flat > Jump
  • Falls
    • 54.47 V 40.15 1,000 falls
    • IRR=0.74 [0.43-1.27]

• 2011-2016
  • Flat racing – Fractures ↓
    • Falls
      • IRR=0.81 (0.76-0.87)
    • Race Meetings
      • IRR=0.76 (0.66-0.87)
    • Rides
      • IRR=0.77 (0.25-2.32)
  • Jump racing – Fractures ↑
    • Falls
      • IRR=1.12 (1.04-1.21)
    • Race Meetings
      • IRR=1.04 (0.99-1.07)
    • Rides
      • IRR=1.090 (0.78-1.53)
Comparison To Previous Data

- Fractures prevalent in horse racing
- Flat
  - Fractures /1,000 falls is lower now than between 1992-2000
    (McCrory et al., 2006)
    - (54.5 V 98.9)
- Jump
  - Fractures 1,000 falls is higher now than between 1992-2000
    (McCrory et al., 2006)
    - (40.2 V 34.3)
Almost X10 more likely to occur in a ride in jump racing than flat.

A fracture occurs in every 18 and 25 falls in flat and jump racing respectively.

A welcome trend is the reduced fracture incidence in flat racing over the last six years, with a notable 24% reduction in fractures during race meetings.

In contrast, fractures have slightly increased in jump racing, but this was only statistically significant in falls, with a 12% increase noted.
Conclusions

• Fall training programme to teach appropriate fall mechanics required
  • Especially in jump jockeys
• January 2017
  • New safety vests introduced which have the potential to minimise fracture occurrence
  • Next step is to examine the effectiveness of this injury preventative strategy
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