BOOK OF ABSTRACTS Open Access

The changing face of serious bicycle injuries from a UK Regional Trauma Centre

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Introduction

There has been an increase in popularity in cycling over the past 16 years in the UK. Whilst the number of killed or seriously injured (KSI) road users in Northern Ireland (NI) has decreased over this period, the proportion of KSI cyclists has increased steadily. We performed an epidemiological study of serious cycling-related injuries admitted to a UK Regional Trauma Centre and look at associated sporting, cultural, economic and infrastructural changes over this period.

Method

Retrospective Analysis of the NI Fractures Outcomes Research Database (FORD) of all significant cycling-related injuries presenting in NI requiring hospital admission and operative intervention between 2000 and 2016.

Results

Over 16 years we captured 734 patients with serious cycling injuries requiring hospital admission and operative intervention with a mean age of 38.73±16.3 (13-87), 85.6% (n=628) of which were male. Males were significantly younger: ANOVA (F2:732=15.363; p<0.001); Male mean age 37.77±15.93 (13-87), Female mean age 44.42±17.54 (14-84). Upper limb injuries predominate (47%), followed by lower limb (21%), spinal trauma (17%), hip fractures (10%), and pelvic trauma (5%). 10% were multiply-injured patients with operative fixation required for ≥ 2 of these body regions. Males in general had higher energy injuries, with more pelvic and spinal injuries noted. 29/735 fractures were open (25 of which were in males 86.2%). 50/72 (69.4%) of femoral injuries were femoral neck fractures (Mean age 56.15±13.57, range 36-84) with 2x native hip dislocations.

We had 18 patients admitted to our Intensive Care Unit (ICU), with total ICU bed days = 259.75 in 16years; mean 18.55±20.50days (Min 0.02 days, Max 68.54).

Length of in-patient hospital stay was mean 8.66±15.85 days (Range 0-142 days). Emergency surgery was carried out in 554/735 (75.37%) of our patients.

Over our study period the incidence of lower limb injuries (R^2=0.037 over time) and pelvic injuries (R^2=0.049 over time) remained static, whilst upper limb injuries (R^2=0.690 over time) and spinal injuries (R^2=0.603 over time) have increased. We show sporadic spikes in injury during seasons and following key sporting events and local infrastructural changes, however any causal link is difficult to demonstrate

Conclusion

Over the study period cycling has gained popularity as a mode of transport in NI and the UK. The percentage of KSI cyclists has dramatically increased. We demonstrate the preponderance for male patients with higher energy injuries and note an increase in incidence of upper limb and spinal injuries.

Whilst the popularity of cycling, both for recreation and as a means of commuter transport have undoubtedly increased over our study period, unfortunately this has a direct correlation with the incidence of associated serious cycle-related injuries generated. This may have implications on healthcare provision, as well as regional government strategies for cycling infrastructure in NI.

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