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Assessing Baseball Injuries amongst Pediatric Sports-Related Hospitalizations: Analysis of the Kid's Inpatient Database from 1997-2012

Purpose/Introduction: The incidence of sports-related trauma remains high in children and adolescents. An analysis of baseball-related injuries requiring hospitalization in pediatric patients with a comparison to rates of injury with non-baseball sports trauma was undertaken. This study has potential implications for assessing risk and safety protocols to reduce future injury.
Methods/Materials: The Kid's Inpatient Database (KID) was queried for patients who sustained baseball-related injuries. Propensity score matching (PSM) controlling for race, sex, and age identified a cohort of patients with baseball related injuries and a cohort of general sports-related injuries. Pearson's chi-squared test and logistic regression was applied to compare rates of injuries between the two cohorts.
Results: 10,096 pediatric patients hospitalized for sports-trauma were identified. PSM to the general sports-trauma cohort yielded: 547 baseball injuries vs. 547 non-baseball injuries. Univariate analysis showed that the baseball group had significantly higher rates of skull fractures (118 vs 41) and foot or ankle fractures (93 vs 43), but significantly lower rates of upper extremity fractures (39 vs 99) and vertebral fractures (4 vs 37) (all p<0.001). Multivariate logistic regression controlling for age, sex, and race demonstrated that the baseball players had increased odds of skull (OR=3.5, 95%CI=2.4-5.2, p<0.001) and foot or ankle fractures (OR=2.3, 95%CI=1.6-3.5, p<0.001), and lower odds of upper extremity (OR=0.4, 95%CI=0.2-0.5, p<0.001) and vertebrae fractures (OR=0.1, 95%CI=0.03-0.3, p<0.001).
Conclusion: Compared to the general sports-related injuries cohort, baseball players were more likely to sustain fractures to the skull, foot, and ankle. However, the odds of sustaining upper extremity and vertebral fractures were lower in the baseball-playing cohort. These findings can be used to inform proposed preventative measures to reduce these injuries in baseball.