Association of Facial Trauma, Severity of Head Injury, and Helmets in Bicycle Riders: A National Trauma Data Bank Study

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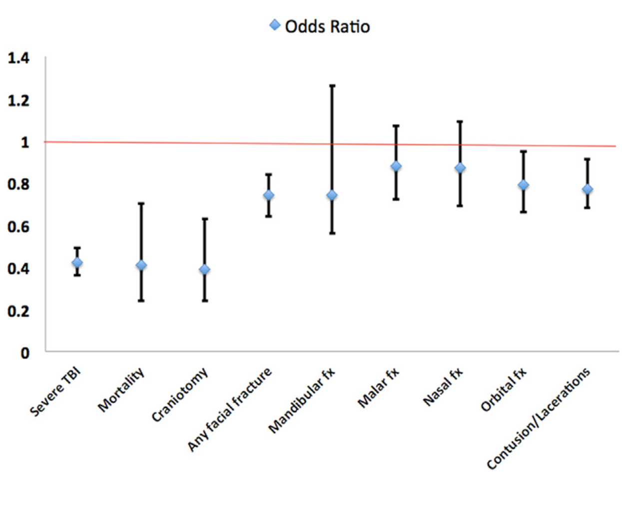
INTRODUCTION: Helmets are known to reduce the incidence of traumatic brain injury after bicycle-related accidents. However, whether helmets reduce the severity of injury in patients who sustain an intracranial bleed after bicycle-related accidents has never been studied. The aim of this study was to assess the association of helmets with severity of traumatic brain injury and facial fractures after bicycle-related accidents.

METHODS: We performed an analysis of the 2012 National Trauma Data Bank and abstracted information of all patients with an intracranial hemorrhage after bicycle-related accidents. Regression analysis was performed to determine the association between severity of traumatic brain injury, facial fractures, mortality, and helmet use.

RESULTS: A total of 6,267 patients with traumatic brain injury after bicycle-related accidents were included, with a mean age of 34±21 years and median Injury Severity Score of 10 (range 5−17). A total of 1,573 (25.1%) of bicycle riders were helmeted. Overall, 52.4% (n=3,284) of patients had severe traumatic brain injury, and the mortality rate was 2.8% (n=176). After controlling for potential confounders, helmeted bicycle riders had 58% reduced odds of severe traumatic brain injury (0.42; 95% CI, 0.36-0.49; p<0.001) and 59% reduced odds of mortality (0.41; 95% CI, 0.24-0.69; p=0.001). Helmet use also reduced the odds of craniotomy by 61% (0.44; 95% CI, 0.24-0.63; p<0.001) and facial fractures by 26% (0.27; 95% CI, 0.64-0.84; p<0.001) (Fig).



CONCLUSIONS: In patients who sustain an intracranial injury after a bicycle-related accident, helmeted riders have significantly reduced severity of injury and mortality. Given the fact that majority of bicycle riders were non-helmeted, injury prevention programs should focus on increasing the practice of helmet use.

Impact of Volume in the Aftermath of Diverticulitis Damage Control Operations

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INTRODUCTION: Colostomy reversal after a Hartmann's procedure for diverticulitis is a morbid procedure, and information regarding factors associated with reversal and subsequent outcomes are lacking. The impact of patient, surgeon, and hospital characteristics on both the rate of stoma reversal and adverse postoperative outcomes after reversal was investigated.

METHODS: Patients who underwent urgent or emergent Hartmann's resection for diverticulitis between 2000 and 2012 in New York State were selected by ICD-9 code from the Statewide Planning and Research Cooperative System. Surgeon and hospital volumes were calculated based on the number of colorectal resections performed each year and characterized into tertiles. Bivariate and multilevel multivariable analyses were performed to assess factors associated with colostomy reversal and the outcomes of a laparoscopic approach, ICU admission, increased length of stay, 30-day readmission, and 90-day postoperative mortality after Hartmann's reversal.

RESULTS: Among 10,829 patients who underwent Hartmann's resection and survived to discharge, 62% of the patients (n=6,709) had their colostomy reversed within 1 year. Factors independently associated with stoma reversal were younger age, lower

Table. Factors Associated with Outcomes after Hartmann's Reversal for Acute Diverticulitis

Outcome	Overall rate or median	High annual surgeon volume (20 colorectal resections)	High annual hospital volume (200 colorectal resections)
Laparoscopic approach (OR, 95% CI)	10.6%	1.77 (1.36, 2.30)	1.73 (1.27, 2.35)
ICU admission (OR, 95% CI)	18.5%	0.67 (0.55, 0.81)	0.46 (0.36, 0.60)
Postoperative length of stay, (IRR, 95% CI)	6 Days	0.86 (0.82, 0.91)	0.95 (0.89, 1.00)
30-d unplanned readmission (OR, 95% CI)	9.7%	0.79 (0.63, 0.98)	0.99 (0.79, 1.26)
90-d mortality (OR, 95% CI)	0.9%	0.36 (0.19, 0.70)	1.75 (0.85, 3.62)

All effect estimates are with low surgeon volume or low hospital volume set as the reference.