

48. Age, Sex, Ethanol Levels, and Helmet Use Among Injured Motorcyclists

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Introduction: Previous studies of motorcycle injuries show that helmet use is associated with a decrease in head trauma. Understanding patterns of helmet use is important in selecting and assessing injury prevention strategies.

Methods: All 470 motorcyclists presenting to either of two regional Level I trauma centers from 7/93 through 12/95 comprise this case series. Thirty-three patients were excluded due to unknown helmet use or outcome, and 50 due to age under 18 years (for whom helmet use was required by state law).

Results: Of 386 patients, 42% wore helmets, and 58% did not, with no difference in the mean ages of the groups. 13% of patients were women ($n = 50$), and 10% were passengers ($n = 38$). Women were 25 times more likely than men to be passengers (95% CI: 11 to 50), and passengers were 5 times more likely than drivers to not wear a helmet (95% CI: 2 to 16). Helmet use was not related to sex, even when the data were controlled for driver vs. passenger. Of 265 patients assayed for ethanol, 30% had >100 mg/dL, 7% had <100 mg/dL, and 63% had none. Non-helmeted patients were 3.6 more likely than helmeted ones to have detectable ethanol (95% CI: 2.0 to 6.5), but there was no association with sex or age. The mean ethanol level was 80 mg/dL in non-helmet users, and 24 mg/dL in helmet users ($p < 0.001$). 39% of non-helmeted patients were legally intoxicated (ethanol > 100 mg/dL), compared to 11% of helmeted ones.

Conclusion: Helmet non-use is associated with ethanol use. Neither risk behavior is associated with sex, age, or being an operator versus a passenger.

35. Emergency Medical Services Use of Trauma Triage Criteria to Stratify Patients by Injury Severity and Need for Emergent Intervention

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Purpose: Prehospital triage criteria (PTC) have been used to classify patients according to risk of serious injury. This study was conducted determine whether PTC could be used to identify serious injury, the need for intensive care (ICU), or immediate operative intervention (IOI).

Methods: Data for this observational study were gathered prospectively, at a level-I trauma center, from a patient cohort admitted to the trauma service from 01 February to 31 July 1995. Specific triage criteria, based on information given by EMS prior to arrival were used to categorize patients by severity. Patients classified as most serious (codes) had the following: shock, major anatomic injury or proximal penetrating trauma. Patients classified as more serious (alerts) had one of the following: abnormal vital signs, Glasgow Coma Scale <13 , moderate anatomic injury, high-risk mechanism of injury, or co-morbid factors. Patients not meeting either set of criteria, but were admitted, served as controls (consults). Injury severity scores (ISS) and probability of survival ($\text{Prob}_{\text{survival}}$) were calculated for each patient. The percentage admitted to the ICU, operating room (OR), or requiring IOI, were tabulated. Statistical analysis was performed using ANOVA, *t*-test and chi-square.

Results: A total of 644 patients were evaluated as follows:

mean	codes (n = 87)	alerts (n = 273)	consults (n = 284)	p-value
ISS	20.4	9.6*	7.22*	<0.001
$\text{Prob}_{\text{survival}}$	0.73	0.98*	0.99*	<0.05
ICU / OR	89%	55%*	48%*	<0.001
Emergent				
OR	79%	18%	4%	<0.001

* alerts vs. consults: p is not significant

Conclusions: Code PTC were useful in identifying the most severely injured, especially those requiring ICU or IOI, suggesting that the OR should be placed on standby. Alert PTC had predictive value for identifying patients who will require trauma admission, but required IOI less often than codes.