

Motorcycle accident

Motorcycles are the leading cause of road traffic deaths in the Western Pacific and Southeast Asia, where Mandarin Chinese is the most commonly used language.

see [Motorcycle accident in Pakistan](#).

Case series

The purpose of a study was to compare two [populations](#) (from [Argentina](#) and [Germany](#)) who suffered a traumatic BPI after a [motorcycle accident](#) to identify predictors of BPI and [brain injury](#) severity.

Univariate and multivariable intergroup comparisons were conducted, and [odds ratios](#) were calculated to assess the associations between the different demographic, morphometric, and trauma-related variables, and the type and severity of patients' injuries. Pearson correlation coefficients were generated to identify statistically significant correlations.

A total of 187 patients were analyzed, 139 from Argentina and 48 from Germany. The two countries differed significantly in age and several morphometric and trauma-related variables. The clinical presentation was also convincingly different in the two countries. The following three variables remained as statistically significant predictors of a complete (vs. partial) BPI: living in Argentina ($p < 0.001$), presenting prior to 2015 ($p = 0.004$), and greater estimated speed at the time of impact ($p = 0.074$). As for BPIs, a disproportionate percentage (85.6%) of more severe brain injuries occurred in Argentinian patients ($p < 0.001$) and among those whose accident involved striking a stationary vertical object.

This study identified several factors that might be considered when planning governmental policies and education initiatives to reduce BPI and brain injuries related to motorcycle use. Level of evidence II-2 (evidence obtained from case-control studies) ¹⁾.

Data of adult patients hospitalized for motorcycle or bicycle accidents between January 1, 2009 and December 31, 2015 were retrieved from the Trauma Registry System. These included 7735 motorcyclists with [helmet](#) use, 863 motorcyclists without helmet use, 76 bicyclists with helmet use, and 647 bicyclists without helmet use. The primary outcome measurement was in-[Hospital mortality](#). Secondary outcomes were the hospital length of stay (LOS), intensive care unit (ICU) admission rate, and ICU LOS. Normally distributed continuous data were analyzed by the unpaired Student t-test, and non-normally distributed data were compared using the Mann-Whitney U-test. Two-sided Fisher exact or Pearson chi-square tests were used to compare categorical data. Propensity score matching (1:1 ratio using optimal method with a 0.2 caliper width) was performed using NCSS software, adjusting for the following covariates: sex, age, and comorbidities. Further logistic regression was used to evaluate the effect of helmet use on mortality rates of motorcyclists and bicyclists, respectively. RESULTS:

The mortality rate for motorcyclists with helmet use (1.1%) was significantly lower than for motorcyclists without helmet use (4.2%; odds ratio [OR] 0.2; 95% confidence interval [CI]: 0.17-0.37; $p < 0.001$). Among bicyclists, there was no significant difference in mortality rates between the patients with helmet use (5.3%) and those without helmet use (3.7%; OR 1.4; 95% CI: 0.49-4.27; $p =$

0.524). After propensity-score matching for covariates, including sex, age, and comorbidities, 856 well-balanced pairs of motorcyclists and 76 pairs of bicyclists were identified for outcome comparison, showing that helmet use among motorcyclists was associated with lower mortality rates (OR 0.2; 95% CI: 0.09-0.44; $p < 0.001$). In contrast, helmet use among bicyclists was not associated with a decrease in mortality (OR 1.3; 95% CI: 0.30-5.96; $p = 0.706$). The hospital LOS was also significantly shorter for motorcyclists with helmet use than for those without (9.5 days vs. 12.0 days, respectively, $p < 0.001$) although for bicyclists, helmet use was not associated with hospital LOS. Fewer motorcyclists with helmet use were admitted to the ICU, regardless of the severity of injury; however, no significant difference of ICU admission rates was found between bicyclists with and without helmets.

Motorcycle helmets provide protection to adult motorcyclists involved in traffic accidents and their use is associated with a decrease in mortality rates and the risk of head injuries. However, no such protective effect of helmet use was observed for bicyclists involved in collisions ²⁾.

Case reports

A 48-yr-old man presented with profound, right-sided, partial brachial plexus injury incurred 5 mo earlier in a motorcycle accident. Imaging demonstrated atrophy and severe edema within the bilateral supraspinatus and infraspinatus muscles. Needle electromyography depicted no motor units and insertional activities in bilateral infraspinatus muscles, consistent with bilateral suprascapular nerve injury. Along with brachial plexus repair, the patient underwent transfer of a distal branch of the spinal accessory nerve to the inferolateral branch of the suprascapular nerve to the infraspinatus muscle. At 16 mo, he had recovered strong restoration of shoulder external rotation.

Systematic evaluation can assist in defining complex pathology, particularly with previously unreported types. In this case, predominant injury was inflicted upon the branch innervating the infraspinatus. Highly focal nerve transfers can achieve substantial restoration of external rotation ³⁾.

A 25-year-old female was admitted to the [trauma center](#) after a motorcycle accident. Initial brain computed tomography and magnetic resonance (MR) imaging showed multifocal acute hemorrhagic infarctions with a clustering in the right [caudate](#) head, anterior limb of [internal capsule](#), and [globus pallidus](#). MR angiography and digital subtraction angiography showed suspicious luminal irregularities of the lenticulostriate arteries of the right MCA. Vessel wall MR images (VWI) did neither indicate intramural hematoma nor wall enhancement in the right MCA, suggesting dissection. However, VWI showed the passages of each lenticulostriate artery supplying each infarction site. Therefore, based on both conventional images and VWI, they postulated that this patient's post-traumatic multifocal striatocapsular hemorrhagic infarctions were caused by damage to multiple lenticulostriate arteries ⁴⁾.

Unclassified

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