Comparison of transportation related injury mechanisms and outcome of young road users and adult road users, a retrospective analysis on 24,373 patients derived from the TraumaRegister DGU*

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Abstract

Background: Most young people killed in road crashes are known as vulnerable road users. A combination of physical and developmental immaturity as well as inexperience increases the risk of road traffic accidents with a high injury severity rate. Understanding injury mechanism and pattern is a group of young road users may reduce morbidity and mortality. This study analyzes injury patterns and outcomes of young road users compared to adult road users. The comparison takes into account different transportation related injury mechanisms.

Methods: A retrospective analysis using data collected between 2002 and 2012 from the TraumaRegister DGU* was performed. Only patients with a transportation related injury mechanism (motor vehicle collision (MVC), motorbike, cyclist, and pedestrian) and an ISS ≥ 9 were included in our analysis. Four different groups of young road users were compared to adult trauma data depending on the transportation related injury mechanism.

Results: Twenty four thousand three hundred seventy three datasets were retrieved to compare all subgroups. The mean ISS was 23.3 ± 13.1. The overall mortality rate was 8.61%. In the MVC, the motorbike and the cyclist group, we found young road users having more complex injury patterns with a higher AIS pelvis, AIS head, AIS abdomen and AIS of the extremities and also a lower GCS. Whereas in these three sub-groups the adult trauma group only had a higher AIS thorax. Only in the group of the adult pedestrians we found a higher AIS pelvis, AIS abdomen, AIS thorax, a higher AIS of the extremities and a lower GCS.

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