**Abstract**

# Collecting information from the scene of a motor vehicle collision: The mechanism of injury

## Yousaf Shah*; Guillaume Alinier

*Hamad General Hospital, Doha, Qatar

Yshah@hamad.qa

While dealing with motor vehicle collision (MVC) victims, the Paramedics on-scene make patient management decisions based on assessment of the physiological parameters, anatomic site of injury, mechanism of injury (MOI), and some special considerations (age and underlying illnesses). In victims with normal physiological and anatomical parameters, and no alarming consideration, the MOI alone is found to be an independent predictor of mortality and functional impairment (2, 3); the Emergency Physician can utilize such information to guide further management of the MVC victims. Information concerning the MOI mostly comes from the Paramedics who retrieved the patient from the crash scene. The purpose of this review is to explore the injury-predictive mechanisms of MVC and to guide the Paramedics in conveying such vital information to the Emergency Physician during handover process.

A literature search was made using the online search engine PubMed to identify studies exploring the injury-predictive mechanisms of MVC. Keyword combinations were used that included: Motor/Vehicle/Collision/Road/Traffic/Accidents/Trauma/Mechanism of injury. Auto vs. pedestrian and Motorcycle crashes were excluded.

A total of 8 articles were found to be relevant. The mechanisms of MVC which are highly predictive of a significant occult injury include ejection from vehicle (1,4,5), intrusion of the passenger compartment more than 12 inches (1,2,4), prolonged extrication time >20 minutes (4,5), death in the same passenger compartment (1,5), high speed crashes (4), deformity of the steering wheel (2), and rollover causing significant intrusion or ejection of the victim (1).

Paramedics reporting the aforementioned crash-specific variables would alert the Emergency Physician and help him better deal with MVC victims who have normal physiological and anatomical parameters, and no alarming considerations. Provision of MVC scene photographs to the emergency physician could be a future research project to assess its impact on altering patient management and outcome.

**References**:
1. Centers for disease control and prevention. (2012). Guidelines for filed triage of injured patient: Recommendations of the national expert panel on filed triage, 2011(MMWR 2012;61). Retrieved from http://www.cdc.gov/mmwr/pdf/rr/rr6101.pdf
2. Davidson, G.H., Rivara, F.P., Mack, C.D., Kaufman, R., Jurkocivh, G.J., Bufler, E.M. (2014). Validation of prehospital trauma triage criteria for motor vehicle collisions. J Trauma Acute Care Surg, 76(3), 755-61.

3. Haider, A.H., Chang, D.C., Haut, E.R., Cornwell, E.E 3rd., Efron, D.T. (2009). Mechanism of injury predicts patient mortality and impairment after blunt trauma. J Surg Res, 1;153(1), 138-42.

4. Palanca, S., Taylor, D.M., Bailey, M., Cameron, P.A. (2003). Mechanisms of motor vehicle accidents that predict major injury. Emerg Med (Fremantle), 15(5-6), 423-8.

5. Stuke, L.E., Duchesne, J.C., Greiffenstein, P., Mooney, J.L., Marr, A.B., Meade, P.C., McSwain, N.E., Hunt, J.P. (2013). Not all mechanisms are created equal: a single-centre experience with the national guidelines for field triage of injured patients. J Trauma Acute Care Surg, 75(1), 140-5