

## 204 Injury Profile of Electrical Conducted Energy Weapons

Bozeman WP, Winslow III JE, Graham D, Martin B, Hauda WE, Heck JJ/Wake Forest University, Winston Salem, NC; Louisiana State University, Shreveport, LA; Inova Fairfax Hospital, Falls Church, VA; University Medical Center, Las Vegas, NV

**Study Objectives:** Conducted energy weapons (CEWs) are increasingly used by law enforcement agencies and have been associated with reduced overall injury rates among suspects and officers. However, significant controversy remains about the safety of these devices. We sought to perform the first large independent study describing the incidence and severity of injuries associated with CEW use.

**Methods:** A prospective multicenter cohort study was performed at six law enforcement agencies across the United States. A tactical physician at each agency reviewed police and medical records after each successful application of a CEW electrical discharge. Injuries were identified and classified by the physician as mild, moderate, or severe based on *a priori* definitions. The relationship of injuries to the CEW was classified as direct, indirect, or uncertain. Descriptive analysis was performed including determination of 95% confidence intervals (CI).

**Results:** CEW uses against 597 suspects were reviewed. 93.6% of subjects were male, with a mean age 31 yrs (range: 13 - 68 yrs) height 68 inches (range: 58 - 80 inches), and weight 185 lbs (range: 110 - 390 lbs). All suspects underwent pre-incarceration medical screening; 46.1% (275 subjects) were also evaluated by EMS, and 23.8% (142 subjects) were evaluated at a hospital. No injuries were seen after CEW use in 77% (458 subjects) (95% CI 73% - 80%). Mild injuries were seen in 23% (136 subjects) (95% CI 20% - 26%) including: 204 Puncture Wounds (79%), 37 Contusions (14%), 14 Lacerations (5%), and 2 others (0.6%). Significant injuries (a composite of moderate and severe injuries) requiring hospital admission were seen in 0.5% (3 subjects) (95% CI 0.1% - 1.4%). These included 2 intracranial injuries (both indirectly related to CEW) and 1 rhabdomyolysis (of uncertain relationship to CEW).

**Conclusions:** After CEW use, 99.5% of 597 subjects had no injuries or mild injuries only. The observed significant injury rate was 0.5%, and is unlikely to be greater than 1.4%. No deaths related to CEWs occurred. These preliminary data represent the largest independent injury epidemiology study of these weapons to date and support the safety of CEW use. Data collection will continue through summer 2007; final data will be presented at the fall ACEP meeting.