

CONDUCTIVE ELECTRICAL WEAPONS: A PROSPECTIVE, POPULATION-BASED STUDY OF THE SAFETY OF APPLICATION BY LAW ENFORCEMENT

Alexander L. Eastman, MD, Jeffery C. Metzger, MD, Fernando L. Benitez, MD, Sgt. James Decker, Kathy J. Rinnert, MD, MPH, Paul E. Pepe, MD, MPH and Randall S. Friese, MD*
The Section of EMS, Disaster Management and Homeland Security and Department of Surgery,
The University of Texas Southwestern Medical Center and the City of Dallas Police Department,
Dallas, Texas

Presenter: Alexander L. Eastman, MD

Senior Sponsor: Randall S. Friese, MD

Objective: To prospectively examine police compliance with policies established for the proper use of conductive electrical weapons (CEWs) and, in turn, compare the associated medical events/findings in a large metropolitan municipality (pop. 1.1 million residential).

Methods: Prospective, population-based, longitudinal study of police activations of CEWs following their introduction into the police force of a large U.S. city. Local policy for use was consistent with International Association of Chiefs of Police (IACP) recommendations using the TASER International® model X26. Data to be analyzed (including: age, sex, defined reason for use, target distance, activation duration, total energy delivered, policy compliance and medical findings/events in the first 12 hours) were entered into a database.

Results: Among 426 consecutive CEW activations (11/04 thru 01/06), the suspects' mean age (years \pm SD) was 30 ± 10 (range:13-72) and 90.4% were male. Suspects' mean distance from the officer was 5.0 ± 4.5 feet (range:0-21). Reasons for use included: evading/resisting arrest (33.3%, n=142), public intoxication/disorderly conduct (15.8%, n=76), effecting a felony arrest (9.3%, n=45), interrupting an assault on an officer or public servant (6.0%, n=29). Mean total duration of exposures were 8.6 ± 5.9 seconds and total energy delivered per suspect was 227 ± 156 joules. Officers followed policy in all cases and, accordingly, all suspects rapidly received medical evaluation/first aid. No suspect had an injury requiring further treatment and none died. In 5.4% of deployments (n=23), the use of the CEW was deemed to have clearly prevented the use of lethal force by the arresting officer(s).

Conclusion: Officers used CEWs appropriately (policy indications, proper discharge durations, energy levels and medical follow-up). In turn, the CEW was found to be a safe device that avoided application of lethal force in certain cases. However, collaborative nationwide research using similar registries are still recommended to diminish type II statistical errors in safety monitoring and to better delineate any subsets of persons, if any, who are at risk for adverse medical events, even when proper procedures are followed.

Presented at the Thirty-Seventh Annual Scientific Meeting of the Western Trauma Association, February 25 - March 2, 2007 Steamboat Springs, Colorado

Published in Journal of Trauma-Injury Infection & Critical Care. 62(1):265-275, January 2007.