



Introduction

There are human case reports in which subjects receiving an electronic control device (ECD) exposure developed rhabdomyolysis. In this meta-analysis, we examine pooled data from the available human studies using creatine kinase (CK) as the marker for muscle injury.



Methods

The data was pooled from four prospective human studies involving three devices with exposures from 5 seconds to 30 seconds involving single device exposures up to 3 simultaneous exposures.

Results

There were 106 subjects, 94% male, with a median age of 37 (range 19-67). There were 82 five-second exposures, 13 ten-second exposures, and 11 thirty-second exposures. 90 exposures were from one device, 8 from two and 8 from three simultaneous devices. The median baseline CK was 148 (IQR 87-479). Immediate after the exposure the median was 160 (IQR 83-1016). At 24 hours the median was 187 (IQR 73-798). The median change at 24 hours was 18 (IQR -140 to 341). For the 5-second exposures, the median change at 24 hours was 12, the 10-second exposures 26, and the 30-second exposures 47. For one device, the median change was 26, two devices -3, three devices -8.

Conclusions

In the durations studied, the ECD does not appear to be a clinically important cause of rhabdomyolysis.