

Implementation of Prehospital Antibiotics for Infection Prophylaxis in Open Fractures

Objective: Previous studies have shown that shorter time from injury to administration of antibiotics decreases the incidence of infection in open fractures. We sought to decrease the time to antibiotic administration for patients sustaining open fractures through implementation of a protocol in our regional EMS system allowing for administration of antibiotics by on-scene providers when a suspected open fracture has been sustained.

Design: A protocol for antibiotic administration by EMS providers was devised based on the protocol used in our institution for open fractures. This protocol was then discussed and approved for implementation at our regional EMS medical directors meeting representing the multiple EMS agencies operating in our regional council.

Setting: Level 1 academic trauma center located in a rural environment.

Patients: Patients transported to our facility that are evaluated by EMS providers and determined to have open fractures.

Intervention: Weight-based administration of cefazolin (Ancef[®], SmithKline Beecham – USA, Canada) via intramuscular or intravenous injection by EMS providers is administered when assessment determined there is a likely open fracture.

Main Outcome Measurement: Successful implementation of a prehospital protocol for antibiotic administration in patients with suspected open fracture and administration of antibiotic prior to arrival at our institution.

Results: One of two air medical transport services affiliated with our institution and fourteen ground EMS agencies were approved for protocol use referencing administration of weight-based cefazolin in suspected open fractures. EMS providers received training on indications for use and proper dosing and administration of the antibiotic. The focus of this study was to allow this cohort of patients to receive antibiotics prior to arriving at any institution and decreasing the time from injury to initial antibiotic administration.

Conclusions: Devising a treatment protocol and working collaboratively with the EMS medical directors of the agencies transporting to our institution, we were able to implement an initiative to provide prehospital antibiotics for infection prophylaxis in patients with suspected open fractures.

Level of Evidence: Therapeutic Level V