The University of Arkansas for Medical Sciences
Trauma Clinical Practice Management Guideline

SUBJECT: Antibiotics for Open Fractures

AUTHORS: Kyle J. Kalkwarf, MD**;** Simon Mears, MD; Ryan Dare, MD; Allison Jenkins, PharmD; Rebecca Smith, PharmD; Gavin Jones, PharmD

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PURPOSE: To facilitate appropriate and timely management of patients with musculoskeletal injury.

MANAGEMENT OF OPEN FRACTURES:

1. Sterile dressing with normal saline-soaked gauze
2. Irrigation of gross contamination at the discretion of the orthopedic attending
3. IV Antibiotics (ABX) should be given within 1 hour of injury. ABX selection is outlined in Table 1.

Table 1. Antibiotic Selection by Fracture Type

Fracture/Wound Type (including GSW)	**First-line Agent(s)**	**Alternative Agent(s) for known anaphylaxis to PCN or cephalosporins**	**Duration**
Type I <1 cm and clean, minimal tissue damage, minimal comminution fx	Cefazolin 2 g IV q8 hr	Clindamycin 900 mg IV q8 hr	ABX should be initiated within 1 hour of arrival Duration: **24 hours after initial debridement and closure** (primary repair or wound vac OR **72 hours after the time of injury** ABX should NOT be given solely for the presence of a drain
Type II 1-10 cm with moderate soft tissue damage or comminution			
Type III: >10cm A: extensive lacs or high-energy B: extensive soft tissue loss, periosteal stripping & exposed bone C: Arterial injury requiring repair	Ceftriaxone 2 g IV q 24hr	Clindamycin 900 mg IV q8 hr PLUS Gentamicin 5 mg/kg IV x 1 dose	
Contamination Farm-related, crush or vascular injury, fecal contamination, standing water, soil	Above ABX PLUS Metronidazole 500 mg IV q12h x 24h		
Open Mandible fx	None	None	
Facial fx (closed or open), Open Skull fx (w/o CSF leak)*, Sinus, Anterior/Posterior Table	None	None	
Open Skull fx w/ CSF leak Must have a documented CSF leak (e.g., CSF, otorrhea, or rhinorrhea)	Ceftriaxone 2g IV q 24 hrs	Clindamycin 900 mg IV q8 hr PLUS Gentamicin 5 mg/kg IV x 1 dose	48 hours
ABX with similar spectra used for other injuries may suffice, but must be discussed with the trauma attending or pharmacist			

4. If there is open tissue (blunt or penetrating mechanism) over a bone that may be fractured, but the patient is not able to get radiography images to properly diagnose a fracture and give antibiotics less than one hour after injury, antibiotics should be given empirically until the presence or absence of an open fracture is confirmed.
5. Open fractures should be fixed operatively within 24 hours. If this is not possible, they should be washed out at the bedside by the orthopedic team within 24 hours of injury.
6. For all fracture types, patients must receive cefazolin (or clindamycin, if allergy) within 1 hour of

the start of surgery. When more than half of the typical redosing interval has elapsed, an additional preoperative dose must be administered.

7. The open fracture wound should be surgically covered (e.g., flap if necessary) within 4 days of definitive fixation.

PERFORMANCE IMPROVEMENT MONITORING: (Expected Outcomes)

1. Antibiotics before, or within 1 hour of arrival in the Emergency Department.
2. Time of Injury to initial washout of open fracture: within 24 hours.
3. Surgical wound coverage within 4 days of definitive fixation.

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