Prevention of Surgical Site Infections After Major Extremity Trauma

Patient Guideline Summary

Last updated February 6, 2023

Objective

This patient summary means to discuss key recommendations from the American Academy of Orthopaedic Surgeons (AAOS) for Prevention of Surgical Site Infections After Major Extremity Trauma. It is limited to adults 18 years of age and older and should not be used as a reference for children.

Overview

- Traumatic injuries pose a major risk of infection.
- This patient summary focuses on prevention of infection following major trauma to the extremities. Areas of management include:
  - Members of the treatment team
  - Antibiotics
  - Timing of surgery
  - Surgical technique
  - Wound management before and after surgery
  - General factors

Treatment

Infection

- Antibiotics may be used early, in preparation for surgery and following surgery. The type depends on the nature of the injury.
- Skin should be cleansed prior to surgery, if possible, and prepared with an alcohol-based agent.

Timing

- Open fractures should be surgically repaired within 24 hours of the injury.

Wound management

- Wounds should be irrigated with saline.
- Fractures should be debrided (removal of dead tissue) and stabilized, but AAOS does not recommended specific methods or timing.
  - External fixation is an option.
- Wounds should be covered for fewer than 7 days from injury.
- Negative pressure is an option, but it is not better than sealed dressings except in certain high-risk fractures.
- Open wounds may be closed if contamination is not gross.
- Silver-coated dressings are not preferred.
- Added oxygen and hyperbaric oxygen are unlikely to provide benefit.
- Neither blood transfusion, the presence of MRSA (methicillin-resistant *Staph aureus*), race, hospitalization nor socioeconomic status alters the risk for infection.

General patient management

- Smoking, diabetes or elevated blood sugar, obesity, recent heavy alcohol use and low blood albumin levels increase the risk for poor outcomes.
- An orthoplastic team may improve all aspects of management.
  - *Note: the team can contain specialists in any area involved in major limb trauma.*
    - Plastic surgery, neurology, vascular surgery, infectious disease, occupational and physical therapy, pain management, nutrition and more.

Disclaimer

The information in this patient summary should not be used as a substitute for professional medical care or advice. Contact a health care provider if you have questions about your health.

Abbreviations

- **AAOS**: American Academy Of Orthopedic Surgeons
- **MRSA**: Methicillin-resistant *Staph Aureus*

Source Citation

American Academy of Orthopaedic Surgeons. Prevention of Surgical Site Infections After Major Extremity Trauma Evidence-Based Clinical Practice Guideline. www.aaos.org/SSItraumacpg. Published 03/21/22.