Antibiotic Prophylaxis in Cranio-Facial Trauma

Rationale: The purpose of antibiotic prophylaxis following cranio-facial trauma is to reduce the risks of meningitis, endophthalmitis, invasive device related colonization, and infectious complications of the head and neck including hardware infection and abscesses.

1. **ICP monitors and ventriculostomies (antibiotic impregnated EVD catheters)**: Cefazolin 2 gm IV 30 minutes prior to insertion. No further dosing is needed.

2. **Ventriculostomies (non-antibiotic impregnated catheters):** Cefazolin 2 gm IV q8h x 24 hours (with first dose 30 minutes prior to insertion).

3**. Blunt Facial Fractures**

- **Open:** For blunt open facial fractures, recommend ampicillin/sulbactam 3 grams IV pre-operatively 30 minutes prior to incision and continued for 3 doses post-operatively. **Antibiotics should not be continued for >24 hours post-operatively.**
    - **If the patient does not immediately go to the operating room, recommend administering ampicillin/sulbactam 3 grams IV q6h for 24 hours.** Administer routine perioperative antibiotics on day of operation. Antibiotics should not be continued for >24 hours post-operatively.
    - The preferred antibiotic is **Ampicillin/Sulbactam** while inpatient. Consider Clindamycin for outpatients/PCN-allergy. If a patient is receiving a broader-spectrum antibiotic for another indication, then this is sufficient coverage provided there is anaerobic coverage included.
        - E.g. A patient on vancomycin / ceftriaxone for an open long-bone fracture would need the addition of metronidazole.
- **Closed:** For non-operative closed facial fractures, no prophylactic antibiotics are recommended. For operative closed facial fractures, the patient should only receive perioperative antibiotics.

4. **Penetrating facial fractures:** These patients are at higher risk for infection than patients with blunt fractures. **For penetrating facial fractures,** we recommend a 4-day course of prophylactic antibiotics (Ampicillin/sulbactam 3g IV q6hrs) starting on admission. Prophylactic antibiotics do not replace prompt operative management when indicated. If a face operation occurs outside of this period, then up to 24 hours of peri-operative antibiotics is acceptable.

- The preferred antibiotic is **Ampicillin/Sulbactam** while inpatient. Consider Clindamycin for outpatients/PCN-allergy. If a patient is receiving a broader-spectrum antibiotic for another indication, then this is sufficient coverage provided there is anaerobic coverage included.

5. **Open skull fractures (blunt or penetrating)**: Ampicillin/sulbactam 3g IV q6h for 24 hours is recommended.

6. **Nasal packing**: No prophylactic antibiotics recommended while nasal packing is in place.

7. **CSF leak**: No prophylactic antibiotics recommended.

- For patients with a CSF leak, pneumococcal vaccination is recommended- 1 dose of pneumococcal 21-valent conjugate vaccine (Prevnar 21 - Capvaxine)– *if the patient has previously received a pneumococcal vaccine, visit the CDC website for details regarding appropriate vaccine administration schedule)*.

8. **Pneumocephalus**: No prophylactic antibiotics recommended.

9.**Open Globe Injuries:** Vancomycin (use dosing advisor in Epic) and cefepime **for 48 hours post admission** is recommended. Ceftazidime can be used as an alternative to cefepime depending on ID restrictions and drug shortages.

- Renal dosing for Cefepime:
  - CrCl >60: 2gm q8h
  - CrCl 30-60: 2gm q12h
  - CrCl 11-29: gm q12h
  - CrCl <10 or HD: 1gm q24h
  - CRRT: 1gm q8h

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Authors:
Jennifer Beavers, PharmD, BCPS
Chelsea Tasaka, PharmD, BCCCP
Jennifer Emerson, PharmD
Stephen Gadomski, MD
Jill Streams, MD
Brad Dennis, MD

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