

VANDERBILT UNIVERSITY MEDICAL CENTER
DIVISION OF TRAUMA AND SURGICAL CRITICAL CARE

ANTIBIOTIC PROPHYLAXIS IN CRANIO-FACIAL TRAUMA

Protocol and Order Set:

- 1. ICP monitors and ventriculostomies:** Ancef 2 gm IV 30 minutes prior to insertion. No further dosing is needed.
 - 2. Open-facial fractures:** Ampicillin/sulbactam 3 grams IV preoperatively 30 minutes prior to incision (to go with patient to the OR). At attending discretion, post-op q8h x 2 doses post-operatively.
 - 3. CSF leak:** No prophylactic AB use
 - 4. Pneumocephali:** No prophylactic AB use
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Rationale:

The theoretical benefit of antibiotic prophylaxis following cranio-facial trauma is to reduce the risks of meningitis and invasive device related colonization and infections. However, this benefit is not substantiated by the literature. Clinical settings discussed include 1) intracranial pressure monitors/ventriculostomies, 2) open facial fractures, 3) CSF leak, 4) pneumocephali.

- 1. ICP monitors and ventriculostomies:** Data regarding the use of prophylactic AB for this indication are inadequate to allow a level one recommendation, however, data suggests that prophylaxis has minimal effect and selects for resistant pathogens. In 2002, VUMC adopted a policy of narrow spectrum, short duration prophylaxis. Following the change, there was no increase in ICP infections and a significant decline in resistant infections in patients receiving the narrow coverage¹. Other studies have documented the same findings since that time.²
- 2. Open-facial fractures:** The utility of prophylactic AB following open facial fractures is uncertain. Facial blood supply makes this region resistant to infectious complications. Additionally, penetration of AB into hematoma and sinus fluid collections is poor. Prolonged AB use provides selective pressure and results in colonization with nosocomial pathogens. Broad perioperative coverage should be utilized^{3,4}.
- 3. CSF leak:** As in the discussion above, inadequate data exist to draw conclusions. The strongest risk factor for infection appears to be prolonged CSF leak, with decreased infection rates with early repair. Again, prophylactic AB do not consistently demonstrate benefit and may shift flora to more virulent and resistant nosocomial pathogens.
- 4. Pneumocephali:** Inadequate data exists to support use of prophylactic AB in the setting of pneumocephali.

References

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3. Lauder A, Jalisi S, Spiegel J et al. Antibiotic prophylaxis in the management of complex midface and frontal sinus trauma. Laryngoscope 2010; 120:1940-1945.
4. Villalobos T, Arango C, Kubilis P et al. Antibiotic prophylaxis after basilar skull fractures: a meta-analysis. Clin Infect Dis 1998; 27:364-369.

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