

PRACTICE GUIDELINES: ANTIBIOTIC PROPHYLAXIS IN CRANIO-FACIAL TRAUMA

INTRODUCTION:

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) CSF leak, 3) pneumocephaly, 4) open facial fractures.

- 1. ICP monitors and ventriculostomies:** Data regarding the use of prophylactic AB for this indication are inadequate to allow adequate conclusions. Existing studies have conflicting results with some producing reduction in infectious complications and others not. Data suggest that prolonged AB use changes pathogens to resistant species in those that do develop infections and that utility of AB prophylaxis declines over time. Additionally some studies demonstrate increased risk of infections after the use of prophylactic AB. No consistent standard of care exists. A survey of university neurosurgical programs revealed that 28% did not utilize prophylactic AB coverage, 61% used single agent coverage and 11% used two agent coverage.
- 2. 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.
- 3. Pneumocephaly:** Inadequate data exists to support use of prophylactic AB in the setting of pneumocephaly.
- 4. 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.

PURPOSE

To standardize the prophylactic antibiotic management in patients with cranio-facial trauma

INTERVENTION

- 1. ICP monitors and ventriculostomies:** Ancef 1-2 gm IV 30 minutes prior to insertion. No further doses needed.
- 2. CSF leak:** No prophylactic AB use
- 3. Pneumocephaly:** No prophylactic AB use
- 4. Open-facial fractures:** Clindamycin 900mg IV and Gentamicin 5mg per Kg IV given on presentation and/or pre operatively for 24 hrs.