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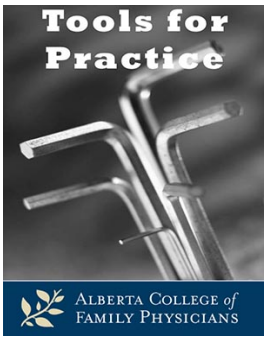

Time to Laceration Repair: Definitively dogmatic to purposefully pragmatic

Clinical Question: Is the time from injury to wound closure a risk factor for infection in traumatic lacerations?

Bottom Line: There is no evidence that a "golden period" or cut-off point exists in which to repair simple, traumatic lacerations to reduce infections. Other patient and wound characteristics (e.g. diabetes, wound size, location, and contamination) are likely more predictive of infection than time to wound closure. In the absence of evidence for maximum duration, clinical judgment/experience and patient preferences should inform decisions.

Evidence:

- No randomized controlled trials (RCTs) found.[1]
- Cohort studies:
  - Emergency department (three sites, 2,663 patients):[2]
    - No significant difference in patients requiring reassessment and infection (antibiotic treatment) at 30 days between closure <12 hours (2.9%) and >12 hours (1.4%).
    - Limitations: Only 67% patient follow-up, low numbers in >12 hours group (n=72).
  - Pediatrics (2,834 children):[3]
    - No difference in infection (frank pus, lymphangitis, or cellulitis) between closure <6 hours (1.2%) and >6 hours (1.3%).
    - Limitations: No information on longer time periods.
  - Neither observational study controlled for type of injury, management, or other potential confounders.
- A cross-sectional study of 5,521 patients[4] and two smaller studies[5,6] confirm above findings.
- Other papers that found delayed wound closure was associated with increased infections were:
  - Smaller (297 patients), and did not account for other wound/patient factors.[7]

- Secondary analysis (example RCT of 217 patients examining role of antibiotics in wounds)[8] or modeling clinician's ability to predict wound infections.[9]

Context

- A "golden period" in which to repair simple lacerations by primary closure is often discussed, with time frames ranging from four to 19 hours.[6,8]
- Risk factors more predictive of infection include:
  - Patient variables: Diabetes (Relative Risk (RR) of infection = 2.7 - 3.9)[2,4] and increasing age.[4,9]
  - Wound characteristics: length >5cm[2,4,7] (example RR Infection = 2.9)[2] location[2,3,5-9] (examples lower extremity RR infection = 4.1, head/neck RR infection = 0.3)[2,3] and wound contamination at time of presentation[2,4,9] (example RR infection 2.0 - 2.9).[2,4]

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