

Efficacy of Antibiotic Prophylaxis for Surgical Drains After Spinal Fusion Surgery

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Introduction

Antibiotics are commonly administered for surgical drain prophylaxis after spinal fusion, though efficacy against surgical site infection (SSI), type of antibiotic regimen, and length of optimal antibiotic use are not well studied.

We analyze whether prophylactic antibiotic administration decreases SSI after spinal fusion surgery.

Methods

Retrospective analysis of 249 consecutive patients undergoing spinal fusion surgery.

Factors studied:

Patient-related

- Age
- Gender
- BMI
- Comorbidities
- History of Radiation Therapy
- Smoking Status
- Use of Antiplatelet Medications
- Use of Anti-coagulation Medications
- History of Chemotherapy Use

Surgery-related

- Primary or Revision Surgery
- Construct Length
- Fusion Region
- Staged Procedure
- Operation Time
- Fusion Graft Type
- Topical Vancomycin Use
- Estimated Blood Loss

Drain-related

- Number of Drains Utilized
- Duration of Drain Utilization
- Antibiotic Prophylaxis Duration

Univariate and multivariate analyses were utilized to assess for factors related to development of SSI.

Results

- Overall rate of SSI was 1.6%
- Mean 1.2 ± 0.7 drains utilized
- Drains remained in place a mean 5.1 ± 4.0 days
- 60.4% patients received antibiotic prophylaxis > 24 hours (mean 4.9 ± 3.1 days)
- In both univariate and multivariate analyses, there were no patient-, surgery-, or drain-related factors, including number of drains ($p=0.17$), duration of drain use ($p=0.33$), antibiotic use > 24 hours ($p=0.15$), or overall duration of antibiotic use ($p=0.12$), that were associated with the development of surgical site infection
- No patients (0%) developed Clostridium difficile infection related to prophylactic antibiotics

Conclusions

There is no evidence that the use of antibiotics, the duration of antibiotic use, the duration of surgical drain use, and the overall number of drains used are associated with SSI after spinal fusion surgery

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Identify that neither the number or duration of surgical drains utilized nor the duration of antibiotic prophylaxis had a significant impact on surgical site infection