

**Title:** Treatment Duration of Antibiotics for Sacral Osteomyelitis After Skin Flap Procedure

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**Introduction:**

Patients with spinal cord injuries frequently develop sacral osteomyelitis. Optimal treatment often involves intravenous antibiotics and skin flap closure of the ulcer; however, best practices for the duration of antibiotic therapy pre- and post-procedure are unknown.

**Methods:**

This was a retrospective, cohort study of spinal cord injury patients at the VA St. Louis undergoing a skin flap procedure from 1 October 2014 to 31 March 2019. Patients aged 18 to 89 years with a documented spinal cord injury and receiving treatment for sacral osteomyelitis with antibiotics and skin flap placement were considered for inclusion. The primary outcome was to determine if there was a difference in antibiotic treatment duration, both pre-procedure and post-procedure, between those that failed combination therapy and those patients for which the treatment was successful. Treatment failure was defined as documentation of no resolution of sacral osteomyelitis after treatment, re-initiation of antibiotics for sacral osteomyelitis of the same area, documented flap break-down, or an unplanned flap-related procedure within 1 year of completion of antibiotic therapy.

**Results:**

Twelve patients were identified for inclusion. Baseline characteristics were similar between groups; 5/8 patients successfully treated received vancomycin, compared to 4/4 patients that failed therapy. Overall, 75% (8/12) had a successful treatment outcome at 12 months. In qualifying patients, average days of pre-procedure and post-procedure antibiotics were similar between patients who achieved success and those who failed (45.5 vs. 44.3 days pre-procedure, respectively ( $p>0.05$ ) and 39 vs. 43 days post-procedure ( $p>0.05$ ), respectively). When evaluated by weeks of therapy, no statistically significant differences were noted in treatment success rates between those treated for less than 6 weeks versus those treated for longer (66.6% [2/3] vs. 63.6% [6/9],  $p>0.05$ ).

**Conclusions:**

No difference in pre- or post-flap procedure antibiotic duration was observed in patients who failed therapy compared to those who were successfully treated.