Do Longer Antibiotic Course Lead To Better Outcomes In Osteomyelitis?

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INTRODUCTION

•Treatment for chronic osteomyelitis is difficult and involves multiple factors including surgery, antibiotics, wound management, and alternate therapy like hyperbaric oxygen.

•This study was initiated to determine the duration of antibiotics post resection of the involved bone. We limited the study to the bones of the feet.

METHODS

•Retrospective chart review from 2012-2015 of all patients with osteomyelitis and bone resection for osteomyelitis.
•≥ 21 years with acute and/or chronic osteomyelitis of bone below the ankle joint, who underwent amputation.
•Cure defined as no relapse of osteomyelitis in the same site, within the follow up period.
•Recurrence defined as osteomyelitis in the same site, within the follow up period.
•Follow up period: 6 months to 3 years, post-amputation.
•Criteria for peripheral vascular disease was based on vascular imaging and/or documentation.
•Patient data collected: demographics, co-morbid conditions, presence of pathology in surgical margins, organisms identified and length of antibiotics pre and post surgical intervention, recurrence/cure of osteomyelitis.

RESULTS

•Total of 65 bone specimens.
• Average age 59 years.
•82% diabetes mellitus, 47% peripheral vascular disease (PVD), 8 bed bound, 4 nursing home.
•Margins:
26-clear, 14-osteomyelitis, 19-unspecified,
6-chornic inflammation.

•The overall cure rate in all patients was 57%.
•In patients with clean margins cure was 26%; margins showing osteomyelitis 57%; and 19% in the specimens labeled as unspecified.

RESULTS

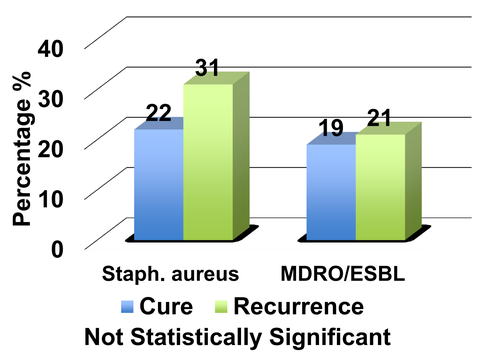
Variables as possible predictors of cure:

•A: Pathogen.

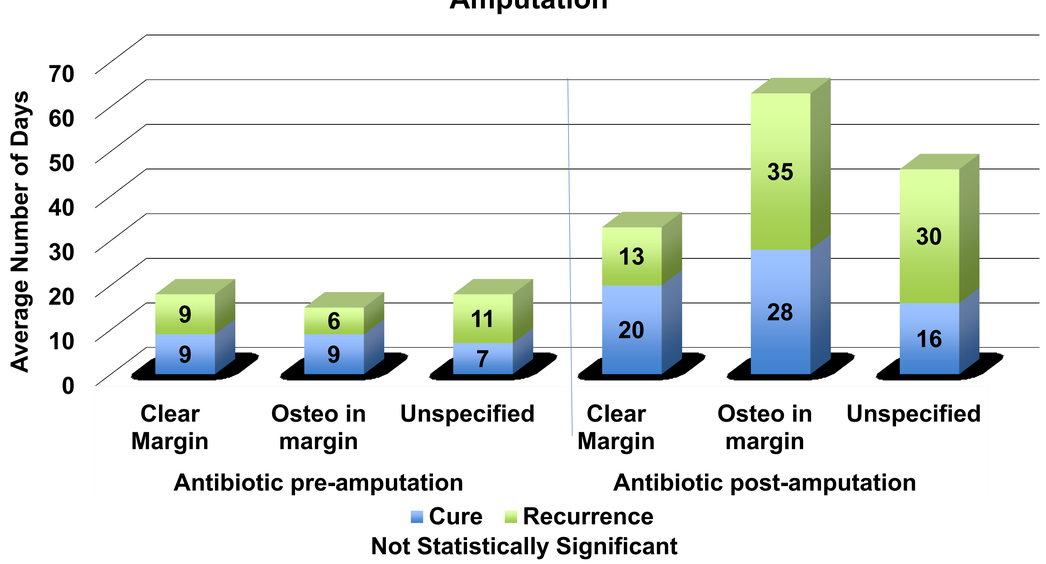
•B: Length of antibiotics pre or post amputation.

•C: DM, PVD, peripheral neuropathy, prior amputation.

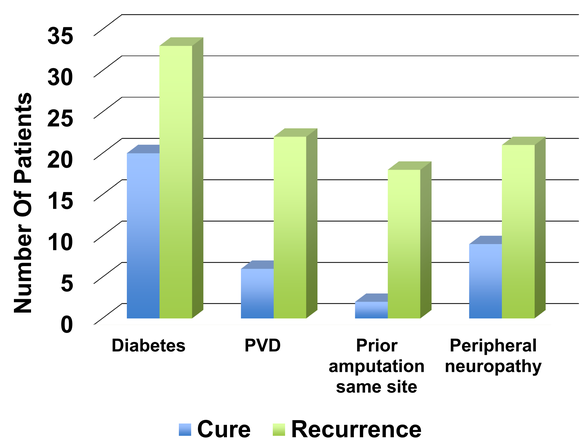
A **Organism From Bone Cultures**



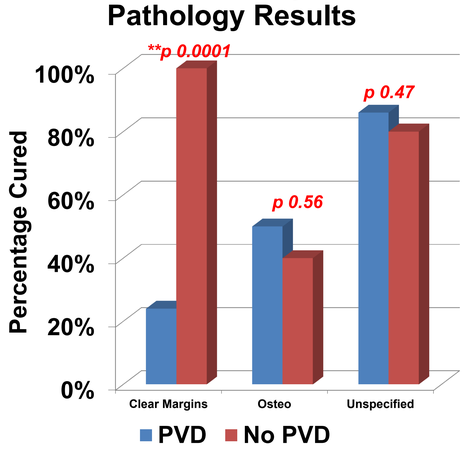
B **Average Length Of Days Of Antibiotic Use Pre And Post Amputation**



C **Associated Risk Factors**



Effect Of PVD By Bone Pathology Results



DISCUSSION

•The study was designed to examine factors that would lead to cure after amputation of a digit for osteomyelitis.
•Of the 65 patients who underwent amputation for osteomyelitis, only 57% were cured. Moreover in the group of patients with clean margins on pathology only 46% were cured.
•The number of days of antibiotics pre (average 6 days) and post amputation (average 21 days), did not correlate with cure.
•The presence of diabetes, peripheral neuropathy, S. aureus, multi-resistant pathogens, did not correlate with cure.
•The only factor that consistently correlated with cure is the presence of peripheral vascular disease and presence of prior amputation at the same site. These 2 factors seem to indicate that blood flow to the lower extremity is the most important factor in predicting cure in patients with osteomyelitis.

CONCLUSION

•The length of antibiotics post bone resection for osteomyelitis did not impact cure rate.

•Only 57% of patients who underwent bone resection were cured during the follow up period of 6 months to 3 years.

•Only 29% of patients with PVD achieved a cure despite the fact that 61% of these patients had clear margins at the time of resection.

•Cure was not predicted by pathogen, antibiotic course or surgical margin, but only by the presence of PVD, suggesting that vascular flow to the foot is critical for cure.

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