

Oral Antibiotic Utilization following Revision Shoulder Arthroplasty

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INTRODUCTION: In those undergoing revision total shoulder arthroplasty (TSA), diagnosing prosthetic joint infection (PJI) remains challenging and thus it remains unclear who may benefit from treatment with postoperative antibiotics. Additionally it is unclear as to whether certain patients with positive cultures and concern for infection can be treated with oral antibiotics alone. The purpose of this study is to evaluate the reinfection rate and complications associated with oral antibiotic utilization after revision shoulder arthroplasty among patients with positive intraoperative cultures or definite, probable, or possible PJI.

METHODS: All revision TSA performed between July 2013 and January 2024 were retrospectively analyzed. Patients were included if they were treated with a minimum of two weeks of oral antibiotics following a revision TSA with 2-year follow-up and had either 1) a positive culture at the time of surgery, or 2) were considered definite, probable, or possible PJI based on the 2018 International Consensus Meeting (ICM) criteria for PJI. Patients initially treated with intravenous antibiotics were excluded.

RESULTS: Overall, 21 patients met the inclusion criteria, with a mean age of 69.8 ± 7.6 , while 76% were male. The mean antibiotic duration was 4.4 ± 2.4 weeks, 18 of the patients were treated with doxycycline, 2 were treated with clindamycin and 1 was treated with ampicillin. According to the ICM criteria, 2 patients had definite PJI, 8 were possible PJI and 11 were unlikely PJI with 1 positive culture. Three (14%) of the patients were switched to intravenous antibiotics at infectious diseases recommendation (2 patients with definite PJI and 1 patient with continued elevated inflammatory markers at 6 weeks). None of the patients had a return visit to the ED or revision surgery within 90-days, or had any complications associated with antibiotic use. There were two (9.5%) revisions within the two-year follow-up - one revision for infection in a patient initially diagnosed with a definite PJI at the time of their initial revision, and another patient required revision for instability. The mortality rate was 9.5% at two-year follow-up.

DISCUSSION AND CONCLUSION: Treatment with oral antibiotic therapy following revision shoulder arthroplasty among patients with positive cultures or suspected PJI demonstrates a low rate of reinfection and antibiotic associated complications. Over two years of follow-up, revision for persistent or recurrent infection was rare and occurred only in one patient initially classified as definite PJI. These findings suggest that a protocol of oral antibiotics may be a safe and effective strategy in select patients undergoing revision TSA and concern for infection – especially among those characterized with an unlikely or possible PJI.