Rifampin Therapy in Prosthetic Joint Infections – A Retrospective Study of Barriers to Therapy Initiation and Completion in Guideline Indicated Patients

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INTRODUCTION:

This study evaluated utilization of rifampin therapy for the treatment of staphylococcal PJI in patients that underwent DAIR or 1-stage revision as per IDSA guidelines, described the reasons why indicated patients were not initiated or did not complete rifampin therapy, and assessed if rifampin therapy had an impact on successful PJI treatment.

METHODS:

Using an institutional database, patients who had a staphylococcal PJI and underwent a debridement and implant retention procedure (DAIR) or a 1-stage revision from January 2013 to April 2023 were identified. Data collected included patient demographics, medical history, medication history, pre- and post-operative clinical, radiographic, microbiological results, and treatment outcomes were all collected. These variables were compared and groups were stratified by if rifampin therapy was completed, initiated but not completed, or not initiated.

RESULTS:

A total of 87 patients at a mean follow-up time of 4.4 years (range: 1.0 to 10.3) met inclusion criteria and were indicated to take rifampin as per IDSA guidelines. Overall, 43 (49.4%) patients were initiated on rifampin therapy. There were 8 (18.6%) patients that did not complete their rifampin therapy due to side effects. There were 44 (50.6%) patients that did not start rifampin therapy. When available, the reason rifampin was not initiated was due to DDIs (61.5% [8/13]). Of those patients with DDIs, 62.5% (5/8) were medium to high risk for interaction with rifampin co-administration. The implicated drugs included warfarin, apixaban, antidepressants, and tacrolimus. When adjusted for covariates using logistic regression, those who did not initiate rifampin therapy were less likely to have successful treatment of their PJI (odds ratio [OR]: 0.76 [0.59 to 0.97]; $P = 0.030$).

DISCUSSION AND CONCLUSION:

Both basic science and clinical studies have shown that rifampin as combo therapy in the setting of DAIR or 1-stage in Staphylococcal PJI leads to better outcomes. This study highlighted the underuse of rifampin in indicated patients as well as what barriers may be involved. It is of upmost importance that orthopaedic and infectious disease physicians collaborate to maximize the implementation of rifampin in accordance with IDSA guidelines.