

The impact of surgical strategy and rifampin on treatment outcome in Cutibacterium periprosthetic joint infections

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BACKGROUND

Cutibacterium species are common pathogens in periprosthetic joint infections (PJI). These infections are often treated with β -lactams or clindamycin as monotherapy, or in combination with rifampin. Clinical evidence supporting the value of adding rifampin for treatment of Cutibacterium PJI is lacking.

MATERIALS/METHODS

In this multicenter retrospective study, we evaluated patients with Cutibacterium PJI. The primary endpoint was clinical success, defined by the absence of infection relapse or new infection within a minimal follow-up of 12 months. We used Fisher's exact tests and Cox proportional hazards models to analyze the effect of rifampin and other factors on clinical success after PJI.

RESULTS

We included 187 patients (72.2% male, median age 67 years) with a median follow-up of 36 months. The surgical intervention was two-stage exchange in 95 (50.8%), one-stage exchange in 51 (27.3%), debridement and implant retention (DAIR) in 34 (18.2%), and explantation without reimplantation in 7 (3.7%). Rifampin was included in the antibiotic regimen in 81 (43.3%) cases. Infection relapse occurred in 28 (15.0%), and new infection in 13 (7.0%) cases. In the time-to-event analysis, DAIR (adjusted HR=2.15, $p=0.03$) and antibiotic treatment over 6 weeks (adjusted HR=0.29, $p=0.0002$) significantly influenced treatment failure. We observed a tentative evidence for a beneficial effect of adding rifampin to the antibiotic treatment - though not statistically significant for treatment failure (adjusted HR=0.5, $p=0.07$) and not for relapses (adjusted HR=0.5, $p=0.10$).

CONCLUSIONS

We conclude that a rifampin combination is not markedly superior in
Cutibacterium PJI but a dedicated prospective multicenter study is needed.

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