

Factors associated with treatment failure in patients with diabetic foot infections: An analysis of data from randomized controlled trials.

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BACKGROUND: Although several antibiotics have been studied for the treatment of foot infections, their effectiveness has been considered to be similar. The scope of this analysis was the identification of factors that are associated with treatment failure based on evidence from randomized controlled trials (RCTs). **METHODS:** Two reviewers independently extracted data from published RCTs comparing different antibiotics for diabetic foot infections (DFIs). **RESULTS:** The combined observed treatment failure was 22.7% in the 18 RCTs included in the analysis. When different regimens of various antibiotics (penicillins, carbapenems, cephalosporins, and fluoroquinolones) were directly compared in the individual RCTs, they were associated with similar frequency of treatment failure. However, when all patients were combined, carbapenems were associated with fewer treatment failures. Also, treatment failure in patients with DFIs from whom methicillin-resistant *S. aureus* (MRSA) alone or as part of a polymicrobial infection was isolated was more common than in patients from whom other bacteria were isolated [24/68 (35.3%) versus 350/1522 (23%), $p=0.02$]. Among patients with DFIs due to MRSA the use of linezolid was not associated with better effectiveness in comparison to other antibiotics [treatment failure: 6/19 (31.6%) versus 18/49 (36.7%), $p=0.69$]. Of interest, treatment failure was similar in patients with and without osteomyelitis [44/169 (26.5%) versus 330/1424 (23.2%), $p=0.34$]. **CONCLUSIONS:** The isolation of MRSA seems to be a significant factor associated with treatment failure in patients with DFIs. Further research efforts are needed for the identification of additional risk factors for treatment failure and optimization of the management of patients with DFIs.

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