# LITERATURZITATE ZUR SUBSTANZWAHL MSSA-BAKTERIÄMIE

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ÖSTERREICHISCHE GESELLSCHAFT FÜR ANTIMIKROBIELLE CHEMOTHERAPIE

# Are all beta-lactams similarly effective in the treatment of methicillin-sensitive *Staphylococcus aureus* bacteraemia?

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Retrospektive Kohortenstudie, n=541

treatment. Empirical treatment with cloxacillin or cefazolin (*n* = 131) was associated with lower 30-day mortality as compared with cefuroxime (*n* = 98, p 0.058), ceftriaxone or cefotaxime (*n* = 194, p 0.008) and beta-lactam-beta-lactamase combinations (*n* = 61, p 0.013), with adjusted odds ratios (OR) for death ranging from 1.98 to 2.68. Definitive treatment with cefazolin (*n* = 72) was not significantly different from cloxacillin (*n* = 281); adjusted OR for 90-day mortality 0.91 (95% confidence interval 0.47–1.77). Treatment with cefazolin both in the empirical and definitive periods was not significantly different from cloxacillin; adjusted OR 0.81 (95% confidence interval 0.18–3.62). Treatment of MSSA bacteraemia with cefazolin is not significantly different from treatment with cloxacillin, while treatment with other beta-lactams, including second and third generation cephalosporins, might be associated with higher mortality.

**TABLE 2. Multivariable logistic regression analysis for 30-day mortality: empirical antibiotic treatment[a]**

| Variable[b] | OR, 95% CI *n* = 541 patients, deaths = 202 | p-value |
|---|---|---|
| Empirical antibiotic treatment | | |
| Oxacillin/cefazolin | Reference | |
| Cefuroxime | 1.98 (0.98–4.01) | 0.058 |
| Ceftriaxone/cefotaxime | 2.24 (1.23–4.08) | 0.008 |
| Beta-lactam-beta-lactamase | 2.68 (1.23–5.85) | 0.013 |
| Other beta-lactams | 0.81 (0.35–1.9) | 0.629 |

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MAJOR ARTICLE

# Comparative Effectiveness of Exclusive Exposure to Nafcillin or Oxacillin, Cefazolin, Piperacillin/Tazobactam, and Fluoroquinolones Among a National Cohort of Veterans With Methicillin-Susceptible *Staphylococcus aureus* Bloodstream Infection

**Maya Beganovic,[1,2] Jaclyn A. Cusumano,[1,2] Vrishali Lopes,[1] Kerry L. LaPlante,[1,2,3,4] and Aisling R. Caffrey[1,2,3,5]**

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***Results.*** When comparing nafcillin/oxacillin (n = 105) with cefazolin (n = 107), 30-day mortality was similar between groups (PS matched n = 44; HR, 0.67; 95% CI, 0.11–4.00), as were rates of the other outcomes assessed. As clinical outcomes did not vary between nafcillin/oxacillin and cefazolin, they were combined for comparison with piperacillin/tazobactam (n = 113) and fluoroquinolones (n = 103). Mortality in the 30 days after culture was significantly lower in the nafcillin/oxacillin/cefazolin group compared with piperacillin/tazobactam (PS matched n = 48; HR, 0.10; 95% CI, 0.01–0.78), and similar when compared with fluoroquinolones (PS matched n = 32; HR, 1.33; 95% CI, 0.30–5.96).

***Conclusions.*** In hospitalized patients with MSSA bacteremia, no difference in mortality was observed between nafcillin/oxacillin and cefazolin or fluoroquinolones. However, higher mortality was observed with piperacillin/tazobactam as compared with nafcillin/oxacillin/cefazolin, suggesting it may not be as effective as a monotherapy in MSSA bacteremia.

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Original article

# Comparative outcomes of cefazolin versus antistaphylococcal penicillins in methicillin-susceptible *Staphylococcus aureus* infective endocarditis: a *post hoc* analysis of a prospective multicentre French cohort study

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ABSTRACT

*Objectives:* Current guidelines recommend cefazolin as an alternative to antistaphylococcal penicillins (ASPs) in methicillin-susceptible Staphylococcus aureus (MSSA) infective endocarditis despite the lack of comparative study. The objective of this study was to evaluate the comparative outcomes of cefazolin vs. ASPs in MSSA infective endocarditis.

*Methods:* This was a retrospective analysis of an observational multicentre cohort study using prospectively collected data from patients with MSSA endocarditis confirmed by endocarditis team and treated either with cefazolin or ASPs between July 2013 and December 2018. Patients were excluded if they received both treatments. The primary outcome was 90-day all-cause mortality.

*Results:* Of 210 patients included, 53 patients (25.2%) received cefazolin and 157 (74.8%) received ASPs. The overall 90-day mortality rate was 27.6% (58/210 patients), 24.5% (13/53) in the cefazolin group vs. 28.7% (45/157) in the ASP group (p 0.561). Premature antimicrobial discontinuation due to adverse events occurred less frequently with cefazolin than with ASPs (0/53 vs. 13/157 patients; p 0.042). In multivariate analysis, there was no difference in 90-day mortality between cefazolin and ASPs (adjusted odds ratio (aOR), 1.2; 95% confidence interval (CI), 0.49–2.91; p 0.681), while age (aOR, 1.06; 95% CI, 1.03–1.09; p < 0.001), Charlson comorbidity index (aOR, 1.18; 95% CI, 1.02–1.36 p 0.023), cerebral embolism (aOR, 2.83; 95% CI, 1.33–6.14; p 0.007) and intensive care unit admission (aOR, 4.16; 95% CI, 1.89–9.59; p 0.001) were factors significantly associated with higher mortality.

*Conclusions:* Cefazolin seems to be a possible alternative to ASPs in MSSA endocarditis. More studies are needed to confirm these results and determine which treatment should be recommended as first-line therapy. **Raphaël Lecomte, Clin Microbiol Infect 2020;•:1**