



# Patients with SAB Need an ID Consult

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*Staphylococcus aureus* bacteremia (SAB) remains a leading cause of morbidity and mortality in the population and among hospitalized patients. Despite improvements in the management of critically ill patients with SAB and the introduction of new antibiotics, the mortality rate remains unacceptably high. Overall, an estimated 119,247 cases of SAB and 19,832 associated deaths occurred nationwide in 2017 [1]. Additionally, a number of uncertainties remain. Many clinicians still feel it is necessary to combine vancomycin or a beta-lactam antibiotic with either rifampin or gentamicin. However, a prospective randomized trial of 236 patients with *S. aureus* bacteremia and endocarditis demonstrated that daptomycin monotherapy was not inferior to low-dose gentamicin plus an anti-staphylococcal penicillin or vancomycin; those in the standard therapy arm experienced significantly more renal impairment than those in the daptomycin arm [2]. An investigation of the safety data from the trial noted a significantly greater reduction in creatinine clearance among those who received initial low-dose gentamicin than those who did not (22 versus 8%, respectively) [3].

There appears to be no role for adjunctive rifampin in the treatment of SAB. In a randomized trial, including more than 700 adults with SAB randomized to treatment with standard therapy plus rifampin (600 or 900 mg per day, administered orally or intravenously) or placebo, no significant difference in mortality or bacteriologic failure was observed after 12 weeks (17 versus 18%; hazard ratio: 0.96; CI: 0.68–1.35) [4]. In addition, patients treated with rifampin were more likely to display adverse drug interactions than those who received the placebo. The addition of rifampin and gentamicin is still recommended for the treatment of staphylococcal PVE, but the data to support this practice are weak, and recent studies suggest that neither gentamicin nor rifampin improve outcomes for staphylococcal PVE [5,6].

Laboratory data suggest that combining bactericidal antibiotics, such as vancomycin or daptomycin, with beta-lactams improves bacterial killing. Unfortunately, the putative benefit of combination therapy has not translated into a consistent improvement in clinically significant outcomes in actual patients. In fact, recent prospective cohort studies and randomized controlled trials have

shown that combination therapy may result in increased side effects and costs with only marginal clinical benefits [7].

However, one finding that seems consistent is that an ID consult improves patient outcomes, such as mortality, length of hospital stay and drug toxicity. In this issue of PPID, Killblane et al. add more credibility to this hypothesis [8]. How does an ID consult improve outcomes? Perhaps it is that we have a lot more respect for SAB than many of our non-ID colleagues, and we monitor patients more closely. We are also more likely to push to remove foreign bodies, drain abscesses and achieve source control more frequently and faster than non-ID clinicians. We are also more likely to treat a single positive blood culture for SA and not discount it as a contaminant, as well as being more likely to routinely search for IE.

A bothersome finding in this study is that an ID consult was associated with a higher incidence of acute kidney injury (AKI), although mortality was lower. This is probably related to the fact that ID clinicians are more likely to see sicker patients who are at an inherently greater risk for AKI. Additionally, ID specialists may be more likely to adhere to guidelines that call for maintaining relatively high vancomycin levels. Regardless of the reason, this is a trade-off most people would willingly accept.

Studies such as that by Killblane et al. can be used by ID physicians to convince administrators at their institutions that an infectious disease consult is a low-cost but high-impact intervention that will improve patient outcomes. We should vigorously lobby the healthcare institutions we work at to mandate ID consults for all patients with SAB.

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