



Drug Treatment for Infective Endocarditis (IE)

| Agent | Notes |
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| Penicillin G | Bactericidal, inhibits cell-wall synthesis. Penicillin-susceptible viridans streptococci and <i>Streptococcus bovis</i> . Used in native valve endocarditis, preferred in patients older than age 65 and those with eighth nerve damage or impairment of renal function (dose adjust in renal impairment). |
| Ceftriaxone sodium | Bactericidal, inhibits cell-wall synthesis. Organisms and indications as above. |
| Vancomycin | Slowly bactericidal, inhibits cell-wall synthesis. Vancomycin therapy is recommended for patients with immediate-type hypersensitivity reactions to β -lactams and endocarditis due to viridans streptococci, <i>S. bovis</i> , enterococci, or staphylococci. It is also used to treat methicillin-resistant staphylococcal infections. Trough serum concentration of vancomycin should be obtained 15-30 minutes before the next dose. |
| Gentamicin | Bactericidal, inhibits protein synthesis. Synergistic killing of streptococci, enterococci, and staphylococci with either β -lactams or vancomycin. Peak and trough serum concentrations should be approximately 3 μ g/mL and <1 μ g/mL, respectively. |
| Ampicillin | Bactericidal, inhibits cell-wall formation. Synergistic killing with gentamicin of enterococci. Dose may have to be decreased in patients with underlying renal dysfunction. |
| Nafcillin | Bactericidal, inhibits cell-wall synthesis. Methicillin-susceptible <i>S. aureus</i> and coagulase-negative staphylococci. Nafcillin is preferred over oxacillin because the latter agent has an increased risk of hepatotoxicity. |
| Cefazolin | Bactericidal, inhibits cell-wall synthesis. Methicillin-susceptible <i>S. aureus</i> and coagulase-negative staphylococci. Useful in patients who are penicillin-allergic but whose allergy is not manifested by immediate-type hypersensitivity reaction. |
| Rifampin | Bactericidal, inhibits RNA polymerase. Staphylococci infecting prosthetic valves. Used in combination with either vancomycin or β -lactam and gentamicin for treatment of prosthetic valve endocarditis. |

Adapted from Baddour LM, Wilson WR, Bayer AS, Fowler VG Jr, Bolger AF, Levison ME, et al. Infective endocarditis: diagnosis, antimicrobial therapy, and management of complications: a statement for healthcare professionals from the Committee on Rheumatic Fever, Endocarditis, and Kawasaki Disease, Council on Cardiovascular Disease in the Young, and the Councils on Clinical Cardiology, Stroke, and Cardiovascular Surgery and Anesthesia, American Heart Association: endorsed by the Infectious Diseases Society of America. *Circulation*. 2005;111:e394-434. (PMID: 15956145).