Staphylococcus epidermidis Endocarditis Treated with RP 59500 (Quinupristin/Dalfopristin)

**Staphylococcus epidermidis** is a common cause of prosthetic valve endocarditis (PVE). Treatment for this condition consists of combination antibiotic therapy including vancomycin, rifampin, and gentamicin. We describe a patient who had a severe allergic response to vancomycin during therapy for PVE due to methicillin-resistant *Staphylococcus epidermidis* (MRSE).

A 44-year-old male with a history of St. Jude mitral-valve replacement 6 months earlier presented with cough, fever, and dyspnea. Physical examination revealed only a systolic murmur. A transesophageal echocardiogram (TEE) revealed a mitral annular abscess, multiple vegetations, and instability of the prosthetic valve (figure 1). Three sets of blood cultures yielded MRSE (bioMérieux Viték, Hazelwood, MO). The patient underwent mitral-valve replacement with reconstruction of the mitral annulus. After an uncomplicated postoperative course, he was discharged with continued vancomycin, rifampin, and gentamicin therapy.

One week after discharge, the patient developed fever (temperature, to 102°F). Findings on physical examination were unremarkable. Blood cultures were negative. The fever continued, and a maculopapular rash developed despite discontinuation of rifampin therapy. A repeated TEE showed normal prosthetic function. Vancomycin therapy was discontinued. The patient was rechallenged with vancomycin with premedication; this was followed by fever, pruritus, tongue swelling, and worsening rash with conjunctival involvement. Findings on histopathologic evaluation of a skin biopsy specimen were consistent with drug eruption. Therapy with RP 59500 (quinupristin/dalfopristin; Synercid; Rho Poulenc, Collegeville, PA) was initiated at a dose of 7.5 mg/kg q8h. Despite symptoms including myalgias, arthralgias, and fatigue, the patient completed a 6-week course. Cultures of blood obtained previously for compassionate use in the United States, has not been available since 1995.

RP 59500 is a combination of two semisynthetic derivatives of pristinamycin: quinupristin and dalfopristin [5]. In combination, quinupristin/dalfopristin, exerts a synergistic antibacterial effect that is not influenced by most forms of bacterial resistance [6]. This investigational streptogramin is active against a spectrum of gram-positive bacteria, including methicillin-susceptible and methicillin-resistant staphylococci, streptococci, and enterococci; its activity is bactericidal against all but enterococci. The mechanism of action involves binding to the 50s bacterial ribosome, resulting in a stable complex that irreversibly inhibits bacterial protein synthesis. There is no apparent synergy with aminoglycosides.

Figure 1. Large mitral annular abscess, with multiple moderate-to-large sized vegetations attached to an unstable prosthetic valve with partial suture dehiscence in a patient with *Staphylococcus epidermidis* endocarditis. LA = left atrium; LV = left ventricle; MV = mitral valve; V = vegetation; and A = annular abscess.

Teicoplanin, an investigational glycopeptide (not approved by the U.S. Food and Drug Administration) with activity against gram-positive bacteria [2] has been effective for treatment of streptococcal and staphylococcal endocarditis [3]. Cross-reactivity may occur in those patients with vancomycin hypersensitivity who are treated with teicoplanin [4]. In addition, teicoplanin, which could be obtained previously for compassionate use in the United States, has not been available since 1995.

**References**


Acute Epiglottitis Caused by Methicillin-Resistant *Staphylococcus aureus* in Adults

Epiglottitis (supraglottitis) in adults, which was once thought to be a rare entity, has been reported with increasing frequency since the late 1960s. Although once primarily a disease of children, the incidence of epiglottitis among children has fallen since vaccination against *Haemophilus* was introduced, and this infection now occurs more commonly in adults. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a rare cause of epiglottitis in adults. We describe a case of MRSA epiglottitis in an adult who required emergent endotracheal intubation and had persistent epiglottic edema and erythema until treatment with intravenous vancomycin was initiated. We did not identify any similar cases in a review of the English-language literature.

A 50-year-old male was well until the evening of presentation to the hospital, when he noted the onset of a sore throat that rapidly progressed in severity. The patient stated that the pain had become quite intense and radiated to his ears and that swallowing was difficult. The patient’s medical history was significant for hypertension and diabetes mellitus. His only medication was insulin.

Physical examination revealed an alert, oriented, afibrile male in acute respiratory distress. Findings on examination of the oral cavity were normal. Indirect laryngoscopy revealed an edematous and erythematous epiglottis. Examination of the neck revealed a 3-cm blanching, erythematous rash over the left side, no palpable adenopathy or swelling, and slight bilateral tenderness in the region of the thyrohyoid membrane. The remainder of the physical findings were normal.

The patient was given 50 mg of diphenhydramine intramuscularly and 125 mg of methylprednisolone intravenously, without improvement in his condition.

The WBC count on admission was 17,400/mm$^3$, with 78% polymorphonuclear leukocytes and no band forms. Radiographs of the lateral soft tissues in the neck showed moderate edema of the epiglottis, including the aryepiglottic folds, although they were well defined from the body of the epiglottis.

Humidified oxygen and 3 g of intravenous ampicillin/sulbactam were administered. The otolaryngology service was consulted, and the patient was taken to the operating room where oral intubation was performed without difficulty. On the third hospital day, the patient’s WBC count rose to 20,300/mm$^3$, with 88% polymorphonuclear leukocytes. Fiberoptic laryngoscopy showed persistent epiglottic swelling and erythema. Treatment with ampicillin/sulbactam was discontinued, and the patient started receiving ceftriaxone, vancomycin, and erythromycin.

On the fourth hospital day, gram staining of sputum collected from the endotracheal tube showed normal flora, while gram staining of blood showed gram-positive cocci in clusters. On the fifth hospital day, cultures of blood and tracheal secretions yielded MRSA, the patient’s WBC count had fallen to 12,000/mm$^3$, and fiberoptic examination of his larynx revealed that the epiglottis was only mildly swollen. After the patient was successfully extubated, treatment with ceftriaxone and erythromycin were stopped and that with vancomycin was continued. The patient’s condition continued to improve, and he recovered uneventfully.

In centers where children and adults are treated [1, 2], the majority of patients with epiglottitis are adults. In most cases of epiglottitis in adults, no etiologic organism is identified, by either blood culture or throat culture. *Haemophilus influenzae* is the most commonly identified pathogen causing epiglottitis in adults (3%–14% of all cases) [1–4]. Other pathogenic bacteria have been cultured from adult patients with epiglottitis including *Haemophilus parainfluenzae*, *Staphylococcus aureus*, and *Streptococcus pneumoniae*.

Death from epiglottitis is uncommon among adults (<3.3% of patients) and is almost always due to acute airway obstruction [1–4]. Unlike children, the majority of adults may be treated without intubation [1–4]. Other commonly recognized complications include pneumonia and epiglottic abscess.

Initial antibiotic therapy is directed toward the most commonly recognized pathogen, *H. influenzae*; typically, third-generation cephalosporins such as ceftriaxone and cefotaxime, a second-gen-