

# Linezolid May Be Overused Weapon for Staph Infections

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SAN FRANCISCO — Linezolid is being used too often for staphylococcal infections when other options are available, William E. Dismukes, M.D., said at the annual meeting of the American College of Physicians.

For example, linezolid is being used increasingly often for treatment of methicillin-resistant *Staphylococcus aureus* (MRSA) pneumonia.

The drug is approved for the treatment of hospital-acquired MRSA pneumonia, and its use may be increasing largely in response to an article published in 2003 in the journal *Chest*, said Dr. Dismukes, director of the division of infectious diseases at the University of Alabama, Birmingham.

In the paper, the authors combined data from two separate studies in which vancomycin and linezolid were used. They concluded that survival and clinical cure rates were both better with linezolid.

The survival rate was reported to be 80% with linezolid versus 63% with vancomycin. The clinical cure rate, defined as resolution of signs and symptoms at the end of treatment with improvement or no change in x-rays, was 59% for linezolid and 35% for vancomycin (*Chest* 2003;124:1789-97).

But not everyone is convinced, including Dr. Dismukes. "This paper has generated all kinds of controversy," he said.

In his opinion, the analysis is less than definitive because it included groups from two different trials, and there were only 160 MRSA patients. "You do get higher lung-tissue levels

with linezolid," Dr. Dismukes said. "But I am skeptical."

Another use for linezolid that is becoming increasingly common is staphylococcal endocarditis. There are anecdotal reports of successful treatments, but no clinical trial data. In contrast, much experience and data are available on use of nafcillin and gentamicin, or vancomycin with or without gentamicin, Dr. Dismukes said.

"I think we use too much of this drug for indications such as this for which there [are] no data," he said.

Linezolid is approved for complicated and uncomplicated soft tissue infections, both methicillin resistant and methicillin susceptible. But community-acquired MRSA infections are different from hospital-acquired MRSA, and so, for uncomplicated infections, cost is an issue.

Hospital-acquired *Staphylococcus aureus* that is methicillin resistant most often has a resistance pattern that includes resistance to other non- $\beta$ -lactam antibiotics, because the gene that confers methicillin resistance most commonly comes as part of a cassette chromosome that contains other resistance determinants. But that is not generally true of community-acquired MRSA, which is usually susceptible to doxycycline, trimethoprim/sulfamethoxazole, and quinolones, Dr. Dismukes said.

A single course of linezolid can cost over \$1,000, whereas in some of these cases trimethoprim/sulfamethoxazole would do, he said.

Moreover, adverse events do occur. Linezolid can cause bone marrow suppression, neuropathies with long-term use, and serotonin syndrome in patients on drugs such as selective serotonin reuptake inhibitors. ■

# To Admit or Not to Admit: Use CURB-65 to Decide

SAN FRANCISCO — A simple clinical rule known as the CURB-65 can be a big help in identifying those patients with community-acquired pneumonia who need to be hospitalized, Michael S. Niederman, M.D., said at the annual meeting of the American College of Physicians.

Efforts have been made to develop a clinical checklist that can be used to help decide whether a pneumonia patient should be admitted to the hospital. But most of them are complex, and the most frequently used—the Pneumonia Severity Index—was designed to predict mortality, not the need for hospitalization.

The CURB-65, on the other hand, is convenient, and was designed specifically to assess need for hospitalization, said Dr. Niederman, chairman of the department of medicine at Winthrop-University Hospital, Mineola, N.Y.

CURB-65—which stands for confusion, urea, respiratory rate, blood pressure, and 65 years of age or older—uses five criteria, to be applied to a patient with a fever less than 37° C and an albumin level less than 30 g/dL. The criteria are confu-

sion, BUN greater than 7 mmol/L, respiratory rate of at least 30 breaths per minute, systolic blood pressure less than 90 mm Hg or diastolic blood pressure less than or equal to 60 mm Hg, and age of 65 years or older.

One point is given for each criterion present. A score of 0-1 indicates the patient has a low risk of death and could be sent home, provided there are no complicating factors. A score of 2 indicates the patient has about a 10% risk of death and should be considered seriously for hospital admission. A score of 3 or higher indicates a 20% or higher risk of death; the patient should be admitted, probably to the ICU.

"I like this rule," Dr. Niederman said. "It is not 100%," he noted, but "I can access all these criteria and very quickly know what I want to do with a patient."

The CURB-65 rule does not replace clinical judgment, he said. But "it is, in my mind, a reality check that I use on every pneumonia patient," he explained.

"The one caveat I have is that if you are going to use this [rule], count the respiratory rate yourself," Dr. Niederman added. ■

**The CURB-65 rule is not 100%, 'but I can access all these criteria and very quickly know what I want to do with a patient.'**

## Expert Says Culture Not Reliable for Community-Acquired Pneumonia

SAN FRANCISCO — Physicians who forgo obtaining cultures from patients who come in with possible community-acquired bacterial pneumonia are probably practicing wisely, John G. Bartlett, M.D., said at the annual meeting of the American College of Physicians.

Culturing pneumonia is an uncertain proposition. It has been reported that the etiologic agent is never identified in 50% of cases. But that figure comes from clinical trials, in which patients are tested exhaustively, said Dr. Bartlett, chief of the division of infectious diseases at Johns Hopkins University, Baltimore.

In the hospital, the etiologic organism is identified in only 15%-20% of pneumonia cases, and most results come from blood culture, not sputum. Sputum rarely yields a positive culture, even in a patient with a pneumonia caused by *Streptococcus pneumoniae*.

Blood cultures may provide mis-

leading results because the cultures are often contaminated, Medicare data suggest. "There have been several reports that have shown that blood cultures really don't affect outcome in any meaningful way," Dr. Bartlett said.

Current guidelines say that when diagnosing suspected pneumonia from bronchitis, an x-ray is key, although an x-ray is not needed in the patient with normal vital signs and no rales.

If the x-ray shows an infiltrate, then the patient has pneumonia, and antibiotic treatment can be initiated empirically, with no need for a culture, because experience suggests that most patients get better with empiric treatment, Dr. Bartlett said.

The exception to this empiric-treatment rule would be for the patient who is ill enough to be hospitalized, Dr. Bartlett said. In those patients, he would order a urinary antigen test for Legionella.

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## MRSA Necrotizing Pneumonia Cases Described as 'Not Subtle'

SAN FRANCISCO — There are two important things to know about the recently identified threat of staphylococcal necrotizing pneumonia: It generally follows an influenza illness, and a physician seeing a patient in the clinic or office is not going to miss it.

That was the message of John G. Bartlett, M.D., who has been involved with four cases of necrotizing pneumonia seen in Baltimore recently. All of the cases occurred during a period of 2 months in the winter of 2003-2004, and all were community acquired, he said at the annual meeting of the American College of Physicians.

"These patients are not subtle. They are severely ill," said Dr. Bartlett, chief of the division of infectious diseases at Johns Hopkins University, Baltimore.

Each of the four cases occurred in previously healthy individuals without risk factors for staphylococcal infection. The disease is rare, and a physician would likely recognize right away that he or she was not dealing with bronchitis or viral pneumonia.

These infections appear to progress rapidly. Two of the patients had been vomiting, and each had severe dyspnea and/or hemoptysis and shock.

Staphylococcal pneumonia is generally a superinfection following influenza. Two patients had serologic evidence of influenza A infection; two were not tested but were found to have an influenza-like prodrome. One patient died, and two needed below-the-knee amputations. The only bacterial pathogen recovered was methicillin-resistant *Staphylococcus aureus* (MRSA), giving further evidence that methicillin resistance is becoming more prevalent among community-acquired staph infections.

Necrotizing pneumonia has previously been reported in Europe. A paper published in April in the *New England Journal of Medicine* reported 14 cases of MRSA necrotizing fasciitis, and an article in the same issue said that 8%-20% of MRSA isolates collected by laboratories do not come from hospitals.

MRSA in the community is different from MRSA in the hospital, Dr. Bartlett said. Hospital-acquired MRSA is generally resistant to trimethoprim/sulfamethoxazole, doxycycline, clindamycin, rifampin, and the quinolones. Community-acquired MRSA tends to be susceptible to those agents, but it often has genes for Pantone-Valentine leukocidin, the presumed virulence factor for its necrotizing ability. ■