# Antibiotics Still Key to Survival in Cystic Fibrosis

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RANCHO MIRAGE, CALIF. — Antibiotic use needs to be aggressive in cystic fibrosis, even if it is not exactly clear which antibiotics to use and when to use them in any particular case, Peggy Radford, M.D., said at a pediatric pulmonology meeting sponsored by the American College of Chest Physicians.

The median survival of cystic fibrosis patients has increased dramatically since the 1940s, and the increase is related to the development of more antibiotic drugs.

With penicillin and streptomycin, median survival rose to about 10 years in 1960. It rose to about 15 years in 1970, following the introduction of carbenicillin and gentamicin. With ceftazidime and ciprofloxacin in the 1980s, median survival rose to almost 30 years. It is now known to be at least 33 years and may actually be about 40 years, said Dr. Radford, director of the cystic fibrosis center at Phoenix Children's Hospital.

Clinical trials are often lacking the nuances of antibiotic treatment, which makes prescribing antibiotics something of an intellectual challenge, she said.

However, there is clinical evidence to guide current practice in some areas:

▶ **Prophylaxis.** In younger children, *Staphylococcus aureus* is the organism that most often colonizes the lungs of cystic fibrosis patients. It is not until age 4-5 years that *Pseudomonas aeruginosa* colonization becomes more prevalent.

One placebo-controlled study looked at 119 children younger than 2 years who were treated prophylactically with cephalexin for 5-7 years. Treated children were less likely to have a positive culture for staphylococcus than were those treated with placebo (6% vs. 30%) but were more likely to have a positive culture for *P. aeruginosa* (26% vs. 14%). The researchers concluded, therefore, that long-term antistaphylococcus prophylaxis should not be recommended.

▶ **Eradication of asymptomatic colonization.** *P. aeruginosa* is the organism most highly associated with lung function decline in cystic fibrosis, and it has become clear that when *P. aeruginosa* infection becomes chronic, the colonizing organism develops a mucoid phenotype that makes eradication problematic. So it would appear early detection is adantageous.

## Child Transmits MSSA Infection To Doctor

A 4-month-old boy with fatal pneumonia transmitted Panton-Valentine leukocidin–producing *Staphylococcus aureus* to a physician who had attempted to resuscitate him.

This case represents the first reported incident of Panton-Valentine leukocidin–producing *S. aureus* transmission during resuscitation, said Martin Chalumeau, M.D., of the Hôpital Saint-Vincent de Paul, Paris, and his colleagues (Clin. Infect. Dis. 2005;41:e29-30).

The resuscitation occurred in the general pediatric ward, when the child went into cardiac arrest while being examined by a physician. None of the health care personnel involved in the resuscitation efforts was wearing a face mask or gloves.

Necroscopy results revealed right lobar pneumonia, a necrotizing hemorrhage of the right lung and half of the left lung, and a tracheal aspirate culture that yielded methicillin-susceptible *S. aureus* (MSSA). The child had presented with 3 days of coughing and 1 day of fever, and had a normal chest radiogram. He developed progressive respiratory failure within 12 hours of hospital admission.

Five days after the incident, the physician who performed the oral intubation on the child had developed furuncles on the fingers and face, and MSSA was found in cultures from the skin lesions. In addition, MSSA was found in cultures collected from 5 of the 15 health care workers who were involved in the resuscitation. The presence of Panton-Valentine leukocidin, a cytotoxin associated with tissue necrosis and leukocyte destruction, was confirmed in the child and the infected physician, but not in the other health care workers.

This incident emphasizes the importance of protecting health care workers against infection, even in general care wards.

**—Heidi Splete**