# RSV Prophylaxis Boosts Protection of High Risk

BY BRUCE K. DIXON
*Chicago Bureau*

INDIANAPOLIS — Providing the monoclonal antibody, palivizumab, during well baby visits improves the prevention of respiratory syncytial virus in high-risk urban infants, Dr. Hari B. Srinivasan said in a poster session at the annual meeting of the Midwest Society for Pediatric Research.

This approach eliminates having to arrange and pay for a separate home health visit, said Dr. Srinivasan of Sinai Children's Hospital in Chicago. In an urban inner-city population, home health visits to administer the monthly injections are complicated by the fact that many families either do not have a phone or frequently change their residence. And in some cases, there is significant delay involved in getting authorization from Medicaid health maintenance organizations to provide home visits, he said.

To prove the efficacy of this approach, the researchers reviewed the number of doses of palivizumab administered and the incidence and number of hospitalizations for RSV-related illness in a cohort of infants during the RSV season from November 2004 to April 2005.

All infants discharged from the neonatal intensive care unit were followed up in a high-risk clinic offering comprehensive medical care, including health maintenance visits.

Palivizumab (15 mg/kg) was given as monthly injections to infants qualifying under the American Academy of Pediatrics guidelines. Neonates discharged during the RSV season received their first injection prior to discharge from the neonatal intensive care unit.

A total of 72 infants qualified for palivizumab administration. The mean birth weight was 1,620 grams and the mean gestational age was 31 weeks.

**Ninety-one percent of infants received greater than 80% of the recommended doses.**

**DR. SRINIVASAN**

Sixty-four percent of infants got all the recommended doses and 28% got 80% of the recommended doses, he said, adding that only 8% of the patients received fewer than 80% of the recommended doses.

During the study there were two documented RSV infections and one of the infants was hospitalized.

"This model of administration of palivizumab resulted in 91% of infants receiving greater than 80% of the recommended doses … and is a viable alternate to the home health model to administer palivizumab in an inner city population," the researchers concluded. ■

# Serious Bacterial Infection Still Possible in Infants With RSV

SAN FRANCISCO — Don't drop your suspicions about serious bacterial infection in infants up to 60 days old just because they're infected with respiratory syncytial virus (RSV), Dr. Laura M. Cerny said at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

Recent reports implying that infants with RSV infection are less likely to have concurrent bacterial infection than are those without RSV may have moved some providers to stop screening for serious bacterial infection in these patients. So Dr. Cerny and her associates retrospectively reviewed charts on 261 infants discharged from one hospital with a diagnosis of RSV from October 2003 to May 2005.

Serious bacterial infections were documented in 8% of the infants, the researchers reported in a poster presentation at the meeting, which was sponsored by the American Society for Microbiology.

Even if they have RSV, infants aged 60 days old or younger are still at risk for serious bacterial infection. "Don't let your guard down," said Dr. Cerny, a pediatric fellow at Children's Hospital of Orange County, Calif., and Harbor–University of California, Los Angeles, Medical Center.

Be concerned about RSV-positive infants aged 60 days old or younger who look ill or have a fever higher than 39° C, because these factors may increase the risk for serious bacterial infection. The investigators retrospectively applied the Rochester criteria to screen for serious bacterial infection and found the criteria valuable for discerning patients with higher risk. The criteria use historical, clinical, and laboratory data to predict risk.

**—Sherry Boschert**

## CLINICAL GUIDELINES FOR FAMILY PHYSICIANS

# Lyme Disease

BY NEIL SKOLNIK, M.D., AND ROSS H. ALBERT, M.D., PH.D.

The Infectious Diseases Society of America (ISDA) recently issued guidelines on the diagnosis, treatment, and prevention of Lyme disease, as well as on human granulocytic anaplasmosis, and babesiosis. Here is a look at the Lyme disease recommendations.

*Guidelines are most useful when they are available at the point of care. A concise yet complete handheld computer version of this guideline is available for download, compliments of* FAMILY PRACTICE NEWS, *at www.redi-reference.com.*

### Prevention and Prophylaxis

Lyme disease is best prevented by avoiding tick-infested areas. However, because exposure is often difficult to avoid, methods to decrease the likelihood of tick attachment include wearing protective clothing, inspecting skin frequently, and removing ticks promptly. Tick repellents containing diethyltoluamide (DEET) and permethrin are also effective, but must be used with caution in children (Clin. Infect. Dis. 2006;43:1089-134).

If a tick bite occurs, a prophylactic regimen is generally not necessary. Prophylaxis is recommended when specific criteria have been met. The tick must be clearly identified as an *Ixodes* tick that has been attached for at least 36 hours, and the local rate of infection must be at least 20%; prophylaxis must begin within 72 hours from tick removal.

Doxycycline is the only recommended medication for prophylaxis, with a dosage of 200 mg once for adults, and 4 mg/kg once for children older than 8 years (maximum dose 200 mg). When doxycycline is contraindicated, prophylactic treatment with amoxicillin is not recommended.

### Diagnosis and Treatment

When early Lyme disease is suspected, diagnosis can be made clinically or serologically. Clinical diagnosis is based on the presence of an erythema migrans (EM) rash. When serologic testing is warranted, enzyme-linked immunosorbent assay (ELISA), Western blot, and polymerase chain reaction (PCR) tests are options. Patients can remain seropositive long after infection, so positive serology may not always suggest that new symptoms are caused by Lyme disease.

Oral antibiotics are the treatment of choice for early Lyme disease without Lyme meningitis or cardiac involvement.

First-line treatment involves 14 days of doxycycline (100 mg twice per day), amoxicillin (500 mg three times per day), or cefuroxime (500 mg twice per day). Recommended dosing for children consists of 14 days of amoxicillin at 50 mg/kg per day in three divided doses (maximum 500 mg per dose); cefuroxime at 30 mg/kg per day in two divided doses (max 500 mg per dose); or—if the child is older than 8 years—doxycycline at 4 mg/kg per day in two divided doses (maximum 100 mg per dose).

For patients who are unable to tolerate these regimens, second-line treatment options include azithromycin, clarithromycin, or erythromycin. Patients who have a seventh-nerve palsy but do not have signs of Lyme meningitis may be treated with the same oral regimen used for early Lyme disease.

### Early Disseminated Disease Treatment

The treatment of disseminated Lyme disease with meningitis or significant cardiac effects differs from that of other early Lyme disease. When symptoms of radiculopathy, meningitis, or significant cardiac effects are present, intravenous antibiotic therapy should be used. Therapy options for adults include 14 days of ceftriaxone (2 g once per day), cefotaxime (2 g every 8 hours), or penicillin G (18-24 million U per day, divided every 4 hours). Patients with atrioventricular heart block and/or myopericarditis may be treated with either oral or parenteral antibiotic therapy for 14 days. Patients with advanced or symptomatic cardiac effects should be hospitalized for cardiac monitoring and intravenous antibiotics at dosages described. With significant heart block, a temporary pacemaker may need to be placed until the block is resolved. If conduction deficits are absent or have improved significantly, outpatient antibiotic therapy with oral agents may be options to complete the patients' course of treatment.

### Treatment of Late Lyme Disease

Late symptoms of Lyme disease, such as arthritis, joint swelling, and neurologic changes, can occur months to years after an initial tick bite. Lyme arthritis can be treated with oral antibiotics, at dosages listed in the previous section, but with 28 days of treatment rather than 14 days. For patients who have persistent arthritis after oral treatment, the guidelines recommend either another course of the oral regimen or treatment with parenteral therapy, with a preference for repeat treatment with oral antibiotics. The guidelines suggest waiting several months before initiating the repeat treatment, as the inflammation can often be slow to resolve. Patients with late neurologic disease affecting the central or peripheral nervous system should be treated with IV ceftriaxone for 2-4 weeks.

### The Bottom Line

The treatment of Lyme disease is based on the stage and severity of the disease. Early Lyme disease, typically diagnosed by the presence of an EM rash, is treated with oral antibiotics for 14 days. Persistent arthritis or joint swelling should be treated with 28 days of oral antibiotics.

DR. SKOLNIK *is an associate director of the Family Medicine Residency program at Abington (Pa.) Memorial Hospital and a coauthor of "Redi-Reference Clinical Guidelines."*
DR. ALBERT *is a second year resident in the Family Medicine Residency Program at Abington Memorial Hospital.*