Progressive Histoplasmosis Is Must-Make Diagnosis

BY BRUCE JANCIN
Denver Bureau

ASPEN, COLO. — Pediatric progressive disseminated histoplasmosis is a disease that can be deadly if undiagnosed, Dr. Matthew Zahn said at a conference on pediatric infectious diseases sponsored by Children's Hospital, Denver, and the University of Colorado.

"An awful lot of histoplasmosis will go away without treatment. This is not one of those. This is one that you have to identify and you have to treat," stressed Dr. Zahn, medical director of the Louisville (Ky.) Metro Department of Health and Wellness.

Pediatric progressive disseminated histoplasmosis (PDH) has a 15% mortality, occurring mainly in children in whom the disease wasn't recognized. Indeed, pediatric PDH is typically fatal if untreated.

Pediatric PDH is said to occur in children who are under 2 years of age, although Dr. Zahn said that in his experience the affected population is mostly aged 8 months or less.

The pathophysiology is thought to involve inhalation of the pathogen, followed by its passage from the lungs into the bloodstream and from there to the reticuloendothelial system, where the fungus overwhelms the young child's still-developing immune system.

The classic symptoms of pediatric PDH include prolonged fever, malaise, and failure to thrive.

Without treatment the child typically develops disseminated intravascular coagulation.

Other common manifestations include respiratory distress, hepatomegaly with a granulomatous hepatitis, and pancytopenia.

Serologic testing using both a complement fixation assay and immunodiffusion assay is generally the best way to diagnosis histoplasmosis.

The immunodiffusion assay is more specific, whereas complement fixation is more sensitive.

But cross-reactivity to tuberculosis and fungal antigens can occur with both tests. And both tests are slow.

A complement fixation assay may not show positive results until 2-6 weeks after onset of acute illness, and an immunodiffusion assay often lags further behind.

Faster results are obtained with a urine histoplasmosis antigen test. It's not a terribly sensitive test, and a negative result doesn't exclude infection, but its reliability is greater in cases of disseminated histoplasmosis, said Dr. Zahn, who is also a pediatrician at the University of Louisville (Ky).

Histoplasmosis culture has traditionally been considered the gold standard of diagnosis.

It's only positive in about 15% of cases, although this rate is higher in PDH because the laboratory is likely to be working with biopsy specimens from the liver or other infected organs.

A downside of culture is that results can take from 2 to 4 weeks.

The histoplasmin skin test is the oldest form of diagnostic testing for histoplasmosis. Today, it's most useful for epidemiologic studies.

The histoplasmin skin test can have negative results in disseminated disease.

Pediatric progressive disseminated histoplasmosis is typically fatal if untreated.

DR. ZAHN

Moreover, once positive the test stays positive for life. In Louisville and the rest of the Ohio River Valley, where 80% of the population has been infected by *Histoplasma capsulatum* var. *capsulatum* by age 18 years and 95% of those infections are asymptomatic, the skin test has little clinical utility, Dr. Zahn commented.

The treatment of choice for PDH or severe disease is intravenous amphotericin B.

It cures disease more rapidly than the azoles. The standard regimen for PDH is 4-6 weeks of therapy.

Alternatively, 2-3 weeks of amphotericin B can be followed by 3-6 months of oral itraconazole.

Fluconazole is less effective than itraconazole and is generally reserved for itraconazole-intolerant patients and those with CNS disease.

Liposomal amphotericin has shown considerable promise in adult studies. It is better tolerated and yields a faster response than the traditional formulation, Dr. Zahn said. ■

Think Histoplasmosis-Related Pericarditis in Endemic Areas

ASPEN, COLO. — Think of histoplasmosis pericarditis when encountering pericarditis in a patient who has been in an endemic area, Dr. Matthew Zahn said a conference on pediatric infectious diseases sponsored by Children's Hospital, Denver, and the University of Colorado.

Histoplasmosis accounts for up to one-quarter of all cases of pericarditis in the Ohio River Valley and other endemic regions, noted Dr. Zahn, a pediatrician who is medical director of the Louisville (Ky.) Metro Department of Public Health and Wellness.

Histoplasmosis is endemic in the central United States, including the Mississippi River Valley.

However, histoplasmosis pericarditis does not call for antifungal therapy.

Rather, it is a reactive inflammatory process that occurs weeks to months following acute pulmonary histoplasmosis with infection of the mediastinal lymph nodes, the pediatrician explained.

The appropriate treatment is an NSAID, added Dr. Zahn, who is also at the University of Louisville (Ky.).

"There are two aspects to histoplasmosis disease. There's the illness from the fungus itself, and then there's the immune response. And the immune response sometimes can be quite big. Pericarditis is one of the immune-response illnesses," he explained. The other common and sometimes debilitating postinfectious complications of histoplasmosis are reactive arthritis, erythema multiforme, and erythema nodosum. None require treatment other than NSAIDs.

At least one-quarter of patients with histoplasmosis pericarditis present with tamponade.

Many will need drainage of the effusion.

Eventually 15% of patients with histoplasmosis pericarditis develop constrictive pericarditis.

—Bruce Jancin

Case History: Boy's Postvaricella Optic Neuritis Heals Sans Steroids

BY ROBERT FINN
San Francisco Bureau

A 6-year-old boy developed unilateral optic neuritis following a varicella infection, but the neuritis improved spontaneously with only symptomatic relief provided.

Some clinicians advocate the early use of steroids for optic neuritis, but others point out that steroids might exacerbate the condition if there is direct viral invasion of the optic nerve, wrote Dr. Panagiotis K. Stergiou and his colleagues from Hippokration General Hospital, Thessaloniki, Greece.

One week following a varicella eruption, the boy presented with severely decreased visual acuity and painful movement of his right eye; he was only able to count fingers for a counting test with that eye.

The pupil was dilated and sluggishly reactive to light, and he had no color vision. His left eye was normal, with 20/20 vision (Pediatr. Neurol. 2007;37:138-9).

Fundoscopic examination revealed edema of the right disk with opacification of the nerve fibers, venous engorgement, and a splinter hemorrhage at the margin of the disk.

Visual evoked potential measurements revealed abnormal responses in the right eye, while the left eye remained normal.

Clinicians prescribed only symptomatic relief with antipyretics, and the boy returned 4 weeks later with a visual acuity of 20/60 in the right eye.

After 3 months there was further improvement to 20/40, but the right optic disk remained pale, the pupil did not react to light, and the boy's color perception remained poor, they reported.

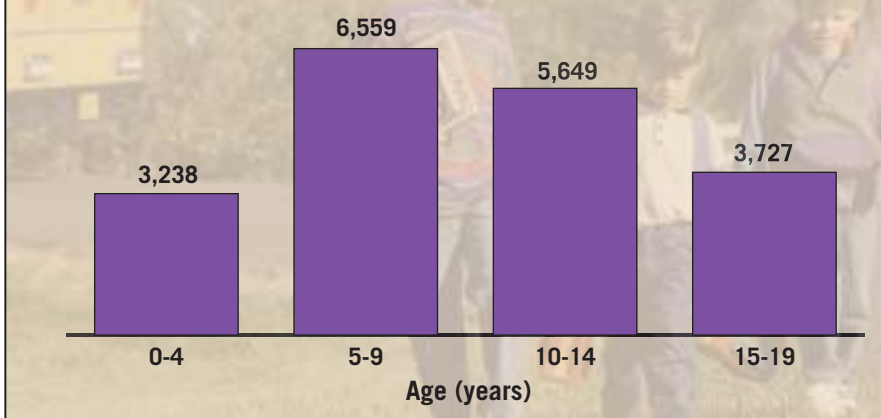
The investigators noted that optic neuritis is a rare complication of varicella, and that it often accompanies other complications such as acute transverse myelitis, encephalomyelitis, ataxia, and retinopathy. The pathogenesis is unknown, and the condition may result from direct viral invasions or from an autoimmune mechanism.

Dr. Stergiou and his colleagues wrote that steroid treatment is usually contraindicated because the disease typically improves rapidly and spontaneously.

Steroids do appear to be appropriate, however, in cases of bilateral optic neuritis after chickenpox. ■

DATA WATCH

Children Aged 5-9 Years Accounted for the Highest Number Of New Lyme Disease Cases



Source: 2003-2005 data, Centers for Disease Control and Prevention

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