ASK THE EXPERT

Nutritional Issues in Juvenile Arthritis

Children with chronic disease are often at risk for nutritional deficiencies associated with their illness or its treatment that can lead to significant growth and developmental impairments. Children with juvenile rheumatoid arthritis are especially vulnerable, as poor growth and altered body composition are hallmarks of the disease. As such, it is critical that clinicians who treat these children include appropriate nutritional assessment, counseling, and treatment in their management plan, according to Dr. Jon M. (Sandy) Burnham of Children's Hospital of Philadelphia.

BY JON M. BURNHAM, M.D.

In this month's column, Dr. Burnham discusses some of the unique nutritional, developmental, and growth issues facing children with juvenile arthritis and how being cognizant of these can help optimize patient outcome.

Rheumatology News: What are some of the nutritional and growth concerns associated with juvenile arthritis?

Dr. Burnham: Linear growth in children with arthritis may be influenced by chronic inflammation, delayed pubertal maturation, and glucocorticoid therapy. Caloric intake can also be limited by arthritis of the temporomandibular joints (TMJs). We find that children with severe TMJ involvement often insidiously develop food preferences that require less vigorous chewing and favor softer foods. We also know that children with arthritis are at risk for low muscle mass, which may be caused by the factors listed above, and by alterations in the amount and types of physical activity that children are able and encouraged to perform. Children with arthritis are also at risk for altered fat mass, which may be low due to chronic malnutrition or high due to glucocorticoid therapy, sedentary lifestyle, and caloric intake in excess of energy expenditure.

Additionally, arthritis puts children at risk for low bone mass and altered bone structure. This may be particularly pronounced in children most severely affected by arthritis, particularly those on chronic, high-dose glucocorticoid therapy. We recently demonstrated in a population-based study that individuals with a history of childhood arthritis are at greater risk of fracture than are age- and sex-matched controls (Ann. Rheum. Dis. 2006;65:1074-9).

Children with arthritis may also be at risk for iron-deficiency anemia and anemia of chronic inflammation.

RN: Should a nutritional assessment be standard in pediatric patients?

Dr. Burnham: Yes, without question. The goal is to ensure appropriate caloric intake as well as calcium and vitamin D sufficiency. Weight and body mass index assessments alone do not capture these alterations accurately.

RN: Who should conduct the nutritional assessment and what measures should be collected?

Dr. Burnham: Patients should be referred to a clinical nutritionist for assessment and guidance. With respect to measures, anthropometric measurements such as skinfold thicknesses and circumferences are used as surrogate measures of lean and fat mass, but are highly influenced by short stature. Bone mass is measured using dual energy x-ray absorptiometry (DXA). We use whole-body DXA to assess the cortical bone health, and lumbar spine DXA to assess trabecular bone health. These measures may be confounded by short stature, so clinicians must be aware of this limitation when they interpret the results. Additionally, a recent study demonstrated that DXA did not discriminate between sick children with and without vertebral compression fractures. We are currently learning how to interpret DXA data in a manner that is more clinically useful in children with chronic illness. New reference data will be available soon that can be implemented in clinical care. If there is significant concern for osteoporosis, an x-ray of the spine for vertebral compression fractures is the most direct way to assess the patient.

RN: What can be done to mitigate nutritional deficiencies in this population?

Dr. Burnham: I advise all my patients to take a multivitamin, and specifically to make sure that it includes a minimum of 400 mcg of folic acid if the patient is on methotrexate. I assess calcium intake and vitamin D to ensure that both are adequate, as calcium absorption will be limited in children with vitamin D insufficiency or deficiency. For vitamin D, we aim for a 25-hydroxyvitamin D level of 30 ng/mL or greater. Because active arthritis results in immobility that can exacerbate osteoporosis, it's important to make sure the arthritis is well controlled and to encourage appropriate physical activity to promote bone health. ■

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New Data Back Etanercept's Safety, Efficacy for Treating JIA Patients

BY NANCY WALSH
New York Bureau

AMSTERDAM — Reassuring data on the use of etanercept in patients with juvenile idiopathic arthritis are emerging from a multicenter Spanish registry, with significant improvements being seen on all clinical parameters and no serious adverse events being reported, Dr. Inmaculada Calvo said at the annual European Congress of Rheumatology.

Etanercept was approved for the treatment of JIA in 1999, but few phase IV studies have been done evaluating the long-term safety and efficacy of tumor necrosis factor (TNF)–α blockade in these patients, noted Dr. Calvo.

A total of 103 patients have been enrolled in the registry, with follow-up extending as long as 48 months.

Fifty-three of the patients were female, the median patient age was 12.3 years, and the median age at disease onset was 5.6 years. During the 3 years prior to recruitment, 91.6% had undergone treatment with methotrexate but had shown an inadequate response, according to Dr. Calvo of the Hospital Infantil la Fe, Valencia, Spain. All patients had polyarticular disease, 55.3% were seronegative, and 15.5% had systemic-onset disease.

At the time of analysis, 83 patients (80.6%) had been followed for at least 6 months, 72 (69.9%) had been followed for 12 months, and 49 (47.6%) had been followed for 24 months. In addition, 29 (28.2%) and 15 (14.6%) had been followed for 36 and 48 months, respectively.

No serious adverse events have been observed, and the infections reported were typical for patients of this age (see box).

The median number of tender joints and swollen joints decreased from 9.09 to 0.3 and 9.24 to 3.13, respectively, Dr. Calvo wrote in a poster session at the meeting, sponsored by the European League Against Rheumatism.

Physician global assessment decreased from a median of 5.96 to 1.13, and patient global assessment fell from a median of 5.43 to 1.30.

The Childhood Health Assessment Questionnaire index also decreased, from a median of 1.61 to 0.44.

Furthermore, laboratory parameters improved, with the erythrocyte sedimentation rate falling from 43 to 11 mm/h and C-reactive protein level decreasing from 12 to 0.1 mg/L.

These data provide further support for the use of etanercept in JIA, Dr. Calvo concluded. ■

Reported Etanercept Adverse Events

Event	Cases
Fever	2
Gastroenteritis	2
Mononucleosis	2
Cerebral pseudotumor	2
Uveitis	2
Tonsillitis	1
Diarrhea	1
Pharyngitis	1
Shingles	1
Erysipelas	1
Facial paralysis	1

Source: Dr. Calvo

FDA Eases Access Barriers to Portable Blood Lead Testing

The Food and Drug Administration has expanded access to portable lead testing devices, which will allow for rapid screening of children and adults at more than 115,000 community clinics, mobile health units, schools, and work sites across the country.

Until now, the LeadCare II Blood Lead Test System (ESA Biosciences, Chelmsford, Mass.) had been available only at select hospitals and testing facilities with clearance to perform highly complex assays.

The FDA has recategorized the device so that it is waived under the Clinical Laboratory Improvement Amendment (CLIA), permitting it to be distributed to nontraditional sites to allow for more widespread testing.

Easy access to the portable device, which delivers results from either fingerstick or venous blood samples in 3 minutes, now "allows us to overcome the very real logistical challenges of testing children who may have been exposed to lead contamination," Dr. John Agwunobi said at a press conference.

Access to lead testing has been particularly challenging for children in poor urban communities, where the risk for lead poisoning is highest.

For many of their families, it is a hardship to get to a hospital or physician's office for the initial blood testing.

The need to acquire confirmatory testing and medical follow-up poses further inconveniece and barriers to care, Dr. Agwunobi pointed out.

"Approximately 310,000 U.S. children aged 1-5 years have blood lead levels greater than 10 mcg of lead per deciliter of blood, a level at which harmful health effects are known to occur," according to estimates from the Centers for Disease Control and Prevention.

About 24 million homes in the United States are believed to have significant lead-based paint hazards, according to estimates from the U.S. Department of Housing and Urban Development.

—Mary Ann Moon