Ask the Expert

Imaging Guidelines for Ankylosing Spondylitis

Although it is the second most common inflammatory joint disease after rheumatoid arthritis, ankylosing spondylitis can be difficult to diagnose. Early symptoms are nonspecific; radiographic evidence of spinal changes is often delayed, and laboratory evidence of inflammation is often absent.

Thus, the time between first symptom and diagnosis of ankylosing spondylitis (AS) can be substantial. In a 2002 survey of individuals with AS by the Spondylitis Association of America, more than half of the 2,000 respondents reported they were not diagnosed until at least 5 years after the first symptom (www.spondylitis.org/press/news/036.aspx). Delays can lead to permanent spinal damage, said Dr. Stephan Pavy of Hôpital Pitié-Salpêtrière, Paris.

A panel of French experts has developed recommendations for three aspects of the management of axial forms of the disease: imaging, clinical and laboratory tests, and the role of medications other than biotherapies. In this month's column, Dr. Pavy, who led the development of the guidelines, will provide insight into the eight recommendations (see sidebar). The guidelines are based on 73 published articles and were reviewed and voted on by 94 rheumatologists (Joint Bone Spine 2007;74:338-45).

Rheumatology News: What is the role of imaging in the diagnosis of AS?

Dr. Pavy: Imaging is crucial because no specific laboratory markers for AS have been identified to date.

RN: How do the new recommendations for imaging differ from existing classification criteria for AS?

Dr. Pavy: At the time these recommendations were developed, the only imaging finding included among classification criteria was radiographic sacroiliitis. Although sacroiliitis is essential to the diagnosis of AS, it often takes time to develop, so radiographic changes are often absent until AS has progressed. The new guidelines stress MRI of the sacroiliac joints and spine for diagnosing AS at an early stage, before radiographic changes develop.

RN: Why is routine imaging not recommended for follow-up and/or evaluation of treatment response in AS?

Dr. Pavy: At the time of the guidelines, published data on follow-up imaging were available only for standard radiography. The available evidence suggests follow-up radiographs rarely show significant progression of structural damage caused by AS. Because of this limited sensitivity and the absence of conclusive data regarding other imaging methods, routine follow-up imaging is not appropriate. Rather, imaging during follow-up should be dictated by the clinical course of individuals. In studies of the role of imaging in the evaluation of therapy, low sensitivity and the fact that imaging changes failed to correspond with clinical responses indicate it is currently not useful.

RN: Ultrasonography can show evidence of inflammation before structural damage is visible on radiographs. Is it appropriate, and if so, when, for imaging studies in AS?

Dr. Pavy: Studies have shown that Doppler ultrasonography is effective in the identification of enthesopathy related to AS, including subclinical forms, thus it can be useful for evaluating entheseal involvement in patients with a clinical suspicion of AS. Similarly, MRI and radionuclide bone scanning have demonstrated high sensitivity for detected symptomatic calcaneal enthesopathy in patients with spondyloarthritis. Use of these modalities may be warranted in AS when multiple entheses are involved.

RN: None of the recommendations were evaluated as grade A strength. Why is that?

Dr. Pavy: There is an absence of conclusive data from high-quality studies. For this reason, the extent of agreement among experts was an important consideration, as a very high level of agreement supports the validity of recommendations made in the absence of adequate published evidence. Seven of the eight recommendations had greater than 90% expert agreement. ■

By Diana Mahoney, New England Bureau

French Panel's Imaging Guidelines for AS

The recommendations for the use of imaging for the diagnosis and follow-up of patients with axial forms of ankylosing spondylitis in everyday practice were developed by a scientific committee of rheumatologists working full time in teaching hospitals, a literature review task force, and a panel of ankylosing spondylitis experts, according to Dr. Pavy and his colleagues. The development of the following guidelines was funded by Abbott France:

- The diagnosis of ankylosing spondylitis requires standard radiographs of the pelvis (anteroposterior view) and lumbar spine (anteroposterior and lateral views including the thoracolumbar junction).
- When standard radiographs conclusively demonstrate bilateral sacroiliitis, further imaging studies are not necessary for establishing the diagnosis of ankylosing spondylitis.
- When radiographs are normal or doubtful in a patient with a clinical suspicion of ankylosing spondylitis, diagnostic MRI of the sacroiliac joints is recommended.
- MRI of the spine can contribute to the diagnosis of ankylosing spondylitis in patients who have inflammatory back pain with nonsuggestive radiographs of the pelvis and spine.
- To evaluate entheseal involvement in patients with a clinical suspicion of ankylosing spondylitis, radiographs may be useful and, if needed, Doppler ultrasonography or MRI may need to be performed, or radionuclide scanning when multiple entheses are involved.
- Imaging methods other than standard radiography are not useful to predict the functional or structural outcome of ankylosing spondylitis in light of needed research in this area.
- Given the current state of knowledge, imaging is not appropriate for the routine follow-up of patients with ankylosing spondylitis. Instead, additional imaging should be performed as dictated by the clinical course.
- Until more data are available, imaging is not recommended for evaluating treatment responses in patients with ankylosing spondylitis.

Campylobacter: Top Foodborne Pathogen in Reactive Arthritis

BY DOUG BRUNK
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Campylobacter and *Salmonella* infections are the most common contributors to the incidence of reactive arthritis related to foodborne illness, judging from results of a population-based study in two states.

Dr. John M. Townes of Oregon Health and Science University, Portland, and associates conducted telephone interviews with residents of Minnesota and Oregon who had culture-confirmed *Campylobacter*, *Escherichia coli* O157, *Salmonella*, *Shigella*, and *Yersinia* infections reported to the Centers for Disease Control and Prevention's Foodborne Disease Active Surveillance Network between 2002 and 2004. Parents or legal guardians provided proxy interviews for those younger than 18 years of age. The researchers invited participants who reported new onset joint pain, joint swelling, back pain, heel pain, and morning stiffness lasting 3 days or more within 8 weeks of culture to complete a detailed questionnaire and physical examination.

More than half of the 6,379 infections reported to FoodNet in Minnesota and Oregon between 2002 and 2004 were caused by *Campylobacter* (53%).

Overall, 6,379 culture-confirmed infections were reported to FoodNet in Minnesota and Oregon between 2002 and 2004. The majority were caused by *Campylobacter* (53%) and *Salmonella* (30%), followed by *E. coli* O157 (9%), *Shigella* (7%), and *Yersinia* (1%). A total of 4,468 subjects (70%) were interviewed within 2 months of specimen collection. Of these, 575 (13%) reported having new onset of rheumatologic symptoms suggestive of reactive arthritis, which the investigators defined as a history or physical examination findings consistent with monoarthritis, oligoarthritis, dactylitis, enthesitis, or inflammatory back pain without other rheumatologic explanation. The adjusted odds ratio for having these symptoms was higher for subjects aged 18 years and older (OR 2.5), females (OR 1.5), and those who had signs of severe illness including fever, chills, headache, bloody stools, and persistent diarrhea at the time of screening (OR of these symptoms ranged from 1.6 to 2.8). Risk of having new onset of rheumatologic symptoms was not associated with antibiotic use or HLA-B27 (Ann. Rheum. Dis. 2008 Feb. 13 [doi:10.1136/ard.2007.083451]).

In a subset of 54 patients who met the criteria for the diagnosis of reactive arthritis based on history and physical examinations, *Campylobacter* was the most common organism of infection (33 cases), followed by *Salmonella* (17 cases), *Shigella* (2 cases), *E. coli* O157 (1 case), and *Yersinia* (1 case). Most cases were adults (96%) and female (67%). Enthesitis was the most frequent finding on physical exam (48 cases). Arthritis was seen in 10 cases. The incidence of reactive arthritis following culture-confirmed infections of *Campylobacter*, *E. coli* O157, *Salmonella*, *Shigella*, and *Yersinia* was estimated to be from 0.6 to 3.1 cases per 100,000 persons.

The researchers acknowledged certain limitations of the study, including the fact that "it is difficult to prove that the rheumatologic symptoms described by our subjects are truly attributable to the antecedent infections," they reported. "However, by examining a subset of those with subjective symptoms, we were able to provide objective confirmation that the true illness was present, and was not related to alternate rheumatologic diagnoses."

They also noted the small number of patients in the subset analysis and pointed out there is no universal definition of reactive arthritis. "We elected to include enthesitis and inflammatory back pain in our case definition," stated the researchers, who had no relevant conflicts. "Including only those with frank arthritis would obviously have resulted in a substantially lower estimate of the incidence."

The study was supported by the Centers for Disease Control and Prevention and the Oregon Health and Science University General Clinical Research Center. ■