

# Radiographic Progression Infrequent in Early RA

BY DIANA MAHONEY

FROM THE ANNUAL MEETING OF THE CANADIAN RHEUMATOLOGY ASSOCIATION

CANCUN, MEXICO – Most patients with early rheumatoid arthritis do not have radiographic progression within the first 2 years of the disease, a study has shown.

Additionally, the risk of continuous radiographic progression during this period can be predicted using certain baseline indicators of disease activity, Maggie Hong Chen reported at the meeting.

An analysis of data from the Study of New-Onset Rheumatoid Arthritis (SONORA) cohort using the original Sharp method to score radiographic progression over 2 years identified the following four patterns among the 529 early arthritis patients included in the investigation: never progressed, progressed at year 1 only; progressed at year 2 only, and progressed at both year 1 and year 2, said Ms. Chen, a research fellow in the University Health Network Research Institute of the University of Toronto.

For the analysis, radiographic progression was defined as a change in total Sharp score of at least 3.5 within a year, she noted.

Of the 529 patients – all of whom were diagnosed with early rheumatoid arthritis based on symptom du-

## VITALS

**Major Finding:** Patients with early rheumatoid arthritis rarely have radiographic progression within the first 2 years of the disease.

**Data Source:** Analysis of clinical indicators and radiographic progression in 529 patients from the SONORA observational early rheumatoid arthritis cohort.

**Disclosures:** Ms. Chen said she had no relevant financial disclosures.

ration of 3-12 months and who had hand radiographs obtained at baseline, 1 year, and 2 years – 457 patients (86%) had no progression, Ms. Chen reported.

Radiographic progression in the patients at year 1, year 2, and both years 1 and 2 was observed in 18 patients (3.4%), 40 patients (7.6%), and 14 (2.6%), respectively, she said.

The investigators evaluated multiple potential clinical indicators of progression, including baseline Sharp score, baseline levels of C-reactive protein (CRP), answers to the Health Assessment Questionnaire (HAQ), swollen joint count, disease duration, anticyclic citrullinated peptide (anti-CCP) antibody status, gender, and rheumatoid factor (RF) status, as well as smoking history.

Of these potential indicators, “baseline Sharp score was a statistically significant indicator of whether the subject would progress within the 2-year period,” Ms. Chen stated, noting that, in the no-progression group, the mean baseline Sharp score was 4.06, compared with 9.33 in the 1-year progression group, 8.28 in the 2-year progression group, and 14.0 among the patients with progression both years.

Significant differences were also observed between the patterns for CRP score, baseline HAQ, swollen joint count, and anti-CCP positive status, according to Ms. Chen.

“Subjects who had no radiographic progression within the 2-year period were younger with a lower swollen joint count, a lower disease activity score [DAS], and lower CRP. They were also negative for anti-CCP and RF at baseline,” she said.

The findings of the study provide insight into the patterns and characteristics of radiographic damage in patients with early rheumatoid arthritis, “and they may also contribute to clinical decision making,” according to Ms. Chen.

The identified indicators can help rheumatologists identify patients at highest risk of continuous radiographic progression and manage them accordingly, potentially with more aggressive therapy if warranted, she said. ■

# Chondroitin Slows Joint Destruction in Knee Osteoarthritis

BY NASEEM S. MILLER

FROM ANNALS OF THE RHEUMATIC DISEASES

Chondroitin sulfate slows the progression of knee osteoarthritis, according to findings from a pilot study that used magnetic resonance imaging to assess joint structural changes.

“It’s reassuring to see that the four major x-ray studies are now confirmed by high technology in the assessment of disease progression,” said the study’s lead author, Dr. Jean-Pierre Pelletier, in an interview (*Osteoarthr. Cartil.* 1998;6:39-46; *Osteoarthr. Cartil.* 2004;12:269-76; *Arthritis Rheum.* 2005;52:779-86; *Arthritis Rheum.* 2009;60:524-33).

The randomized, double-blind, placebo-controlled study showed that chondroitin sulfate reduced the cartilage loss volume in 69 patients with knee osteoarthritis in as early as 6 months (*Ann. Rheum. Dis.* 2011 March 1).

The findings show that magnetic resonance imaging (MRI) “is a good quantitative technique to find answers in a shorter period of time with a smaller number of patients,” said Dr. Roy D. Altman, professor of medicine at the University of California, Los Angeles, who is not involved with the study.

The effect of the disease-modifying drug chondroitin sulfate on cartilage volume loss, bone marrow lesions (BML), and disease symptoms has been controversial (*BMJ* 2010;341:c4675). However,

the authors of this study said that the MRI findings provided additional evidence regarding the joint structure protective effect of chondroitin sulfate.

Several studies have also shown that MRI can quantitatively and reliably assess the volume and cartilage thickness in addition to joint structural changes in subchondral bone, menisci, and synovium, according to the authors.

“MRI provides you with direct visualization of the cartilage,” said Dr. Pelletier, director of the osteoarthritis research unit at the University of Montreal Hospital Research Centre. “And the beauty of MRI is that it provides assessment of progression of change not only in cartilage, but also in many other tissues of the joint, like the subchondral bone and the synovium.”

“In addition, the pronounced reduction in OA cartilage loss found in patients treated with chondroitin sulfate was also associated with a reduction in the size of BML. This finding is most interesting as BML are believed to be associated with the progression of OA cartilage lesions,” according to a number of studies, said Dr. Pelletier.

The study also showed that patients being treated with nonsteroidal anti-inflammatory drugs in addition to chondroitin sulfate showed a significant reduction in synovial membrane thickness (1.3 plus or minus 0.3 mm in 6 months vs. 1.6 plus or minus 0.3 mm with placebo), and a lower incidence of joint swelling compared with the placebo

group (0% in chondroitin sulfate vs. 11.4% in placebo). The finding “is interesting with practical clinical impact, and definitely needs future exploration,” the authors wrote.

Dr. Pelletier and his colleagues recruited 69 patients of both sexes between 40 and 80 years of age from rheumatology clinics in Quebec province. All patients had clinical signs of synovitis.

The study had two phases. For the double-blind phase, the patients were randomly assigned to once-daily placebo or 800 mg of chondroitin sulfate for 6 months. During the following 6 months, or the open-label phase, both study groups received 800 mg of chondroitin sulfate daily.

Cartilage volume and BML were assessed by MRI at baseline, 6 months, and 12 months. Synovial membrane thickness was assessed at baseline and 6 months.

Patients who took a daily oral dose of chondroitin sulfate had a significant reduction in cartilage volume loss at 6 months (–2.87%) and 12 months (–3.71%) in the global knee, compared with the placebo group (–4.67% at 6 months and –6.12% at 12 months).

There were no differences in BML during the first 6 months of the study. But at 12 months, reductions in BML were observed in the chondroitin sulfate group (–0.57%), especially in the lateral compartment (–0.13%) and the lateral condyle (–0.43). The additional 6 months needed to see the difference in BML between the groups could suggest that “BML are consequential to cartilage degradation and thus reducing cartilage lesions could lead to fewer BML. Alternatively, BML were shown to be involved

in an inflammatory/catabolic process on which chondroitin sulfate could act directly, leading to structural repair,” according to the study authors.

No significant differences in disease symptoms were measured by visual analog scale and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaires. “The main aim of the study was not the symptoms. The main goal was to find out whether chondroitin sulfate can reduce progression of knee OA,” said Dr. Pelletier.

The study had a number of limitations, including its small sample size. In addition, the system used did not allow the detection of the cartilage in the patella, the researchers reported. They added that long-term studies are needed to find the impact of chondroitin sulfate in disease symptoms.

Whether the quantitative MRI technique will eventually replace x-ray technology in such studies is unclear, said Dr. Pelletier. “That’s for regulatory bodies to decide,” he said.

“But it’s quite clear that MRI is the technology of the future. It’s very helpful, because you can truly speed up drug development in the field of OA and with less expense, using a smaller number of patients and in a shorter period of time.”

Dr. Jean-Pierre Pelletier and Dr. Johanne Martel-Pelletier are consultants for and shareholders in ArthroLab and ArthroVision. Jean-Pierre Raynauld is a consultant for ArthroVision. Dr. André Beaulieu, Dr. Louis Bassette, and Dr. Frédéric Morin received honoraria from ArthroLab. François Abram is an employee of ArthroVision. Marc Dorais is a consultant for ArthroVision. Dr. Altman had no relevant financial conflicts of interest. ■