

Research

Challenges in diagnosing early osteoarthritis

Osteoarthritis (commonly referred to as "OA") is the most common form of arthritis disease worldwide. It is a painful, usually slow progressing disease that affects the joints, particularly the hips and knees. As the disease progresses one's ability to move their joints through a full range of motion decreases and pain increases.

The most common myth about OA is that it is a disease of older persons. Nothing could be further from the truth. Any person over the age of 15 is at risk of developing OA and some people in their 90s don't have any OA. So, OA is not inevitable.

In this issue:

The next two issues of JointHealthTM monthly are co-written by Jay Fiddler and Otto Kamensek, members of the Arthritis Research Centre of Canada's Consumer Advisory Board, and Cheryl Koehn, President of Arthritis Consumer Experts. They will highlight just three of the thousands of topics presented at the American College of Rheumatology (ACR) 2004 Annual Scientific Meeting. The topics covered in this issue are:

Research

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Arthritis Consumer Experts

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Currently, approximately 3 million people in Canada have OA. Pain causes fatigue and reduces one's energy needed to carry out daily activities, both physical and mental. Work – whether inside or outside the home – and interpersonal relationships with family and friends, co-workers and clients are affected by fatigue. No matter what one's activity use to be, it decreases as pain and fatigue increase. With all of this, one's self-esteem is affected as well. A great deal of research is being done to develop new treatments for OA. As with every other type of arthritis, starting treatment early is often the best way to have the most benefit. So, being able to diagnosis OA early is key to decreasing pain, joint damage, and improving and maintaining a quality of life with family, work and the community in the future.

Early diagnosis is a challenge for medical experts as highlighted at the American College of Rheumatology Annual Scientific Meeting, November 2004, in San Antonio, Texas. This meeting is the premier arthritis science meeting of the year, attracting medical experts from around the world. Dr. John Esdaile, Scientific Director of the Arthritis Research Centre of Canada, was invited to present on the challenges involved in early diagnosis of OA. His talk focused on a very important theme: identifying and treating OA as early as possible is critical in providing an effective, holistic treatment plan that helps to maintain joint health. This is a challenge for both health care professionals and for people living with early OA.

Dr. Esdaile highlighted that very often, people living with early OA do not go to their family doctor to report the pain and physical limitations. The complaints can be intermittent and seem too mild to "bother" the doctor about. The person affected may attribute the complaints to a temporary sprain or strain rather than the early warning sign of a real arthritis. This is especially true for people who view themselves as being

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"too young" to have arthritis. Compounding this is that often family doctors do see a great many patients with a lot of sprains and strains have no way of separating these from the complaints of early OA until the OA is fairly well established and joint damage is already done.

Unfortunately, for OA involving the hip and knee one cannot see with the naked eye the early damage caused from arthritis. If doctors knew what and how to look for symptoms of early OA, a prevention and/or treatment plan could be started much earlier in a person's life – possibly before OA joint damage occurs.

An important point from Dr. Esdaile's presentation was that consumers/patients should be taking an active role in maintaining their joint health by reporting changes they notice in their physical abilities to their family doctor. One example of a symptom that people do not tell their doctor about is groin or upper thigh pain. Often, groin pain is an early symptom of osteoarthritis, but many doctors and their patients write it off as some sort of strain or injury.

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Dr. Esdaile reported that scientists are looking for ways to separate the people who really have only strains and sprains from those with similar complaints who have early OA. Areas of active research for tests include the following:

- Blood and urine tests that might detect early OA. These include: (1) biomarkers (a distinctive, usually biochemical “pointer” found in the body) which result from the release of small fragments of cartilage or bone, some normal and some abnormal, which are caused by the earliest changes of OA. Some of these tests may also predict who will get OA that will progress rapidly; (2) Early OA may be linked to an increase in inflammation. Tests, such as C-reactive protein, a marker for inflammation, may increase in OA; (3) Early OA may release substances that interact with the body’s immune system. This system then produces antibodies or immune cells that react with cartilage. The resultant antibodies or immune cells can be measured.
- Radiology tests to “see” the OA earlier than conventional X-Rays, as unfortunately by the time a regular X-ray is abnormal considerable OA damage has been done. These include: (1) Scintigraphy (a two dimensional scan or picture with a chemical that is attracted to bone) that shows damage to the bone just below the joint cartilage. This change occurs early in OA; (2) MRI (magnetic resonance imaging) can find early change to the cartilage and the bone that are due to OA; (3) d-GEMRIC MRI is the very newest type of MRI, and is currently in use only in research laboratories. But, it can find cartilage, which appears normal on a regular MRI, that is actually showing early chemical change that will lead to OA.
There are also the beginnings of research into

new treatments to slow the progress of OA. These include the popular over the counter drug, glucosamine, as well as doxycycline, diacerein (available in Europe) and vitamin D. None have been definitively proven to work, but these and other novel agents are under intensive study.

The Arthritis Research Centre of Canada is currently conducting a number of projects for research into osteoarthritis. Dr. Jolanda Cibere from the Arthritis Research Centre is collaborating with scientists at McGill, the University of Toronto, the UBC Centre for Hip Health and the University of Queensland to study early knee and hip OA. This study involves developing a standardized way of evaluating

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the hip and knee, standardized procedures for xray and MRI (magnetic resonance imaging) tests, and measurement of the blood and urine markers described above. The overall goal of the study is to provide scientifically sound ways to detect osteoarthritis early and determine which people will get more severe OA so that the new therapies being tested can be used early to halt or reverse joint damage.

While it may be a ways down the road, it is exciting to think that research being done in Canada may make joint replacements due to osteoarthritis a thing of the past.

To learn more about this and other research projects at the Arthritis Research Centre of Canada, go to www.arthritisresearch.ca. To read about osteoarthritis research in Canada,

click on OsteoArthritis & You, in the lower right corner. This newsletter is produced four times each year and is available both on-line and in print version, both in English and French.

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Feedback

ACE Consumer/Patient Survey on NSAID Use in Canada

Thank you to everyone who participated in the NSAID survey in the October/November issue. We received over 100 responses over a two week period. The results will be shared with you and the arthritis community in the February 2005 issue of JointHealth™ monthly.

Listening to You

We hope you find this information of use. Please tell us what you think by writing or email us at info@arthritisconsumerexperts.org. Through your ongoing and active participation, ACE can make its work more relevant to all Canadians living with arthritis.

Update your email or postal address

Please let us know of any changes by contacting ACE at info@arthritisconsumerexperts.org. This will ensure that you continue to receive your free email or print copy of JointHealth™ monthly.

Feedback - Community FAQs

Are there any new medications for rheumatoid arthritis?

The most common question asked at ACE Plan to Win with Inflammatory Arthritis workshops is, **Are there any new medications available to treat inflammatory arthritis?** We are pleased to provide you with a “yes”.

Since our last Plan to Win with Inflammatory workshop in Fall 2004, one new biologic response modifier received Health Canada approval, and one other that was already on the market received two new indications – meaning, the medication was already approved for one type of disease, but received additional approval for use in two other diseases.

Product name (brand name)	Date of Health Canada approval	Used to treat
adalimumab (Humira®)	September 24, 2004	rheumatoid arthritis
etanercept (Enbrel®)	September 29, 2003	juvenile rheumatoid arthritis (new indication)
etanercept (Enbrel®)	January 8, 2004	psoriatic arthritis (new indication)

One other biologic response modifier, infliximab (Remicade®), is currently under review by Health Canada for use in ankylosing spondylitis. If approved, this would be the first new treatment for ankylosing spondylitis to be developed in decades – very promising news.

Adult Still's disease

Adult Still's disease (or "Still's disease) is a rare form of inflammatory arthritis, so much so that even rheumatologists can have a difficult time making the diagnosis. At the American College of Rheumatology Annual 2004 Scientific Meeting an entire workshop was devoted to the topic. The workshop, led by Dr. John Cush from the University of Texas, provided an excellent overview on a disease that affects only 1 or 2 people per million every year – the vast majority being young adults aged between 16 and 35.

Interestingly, finding one's way to a diagnosis of Still's disease is not about finding a specific or defining symptom. Rather, it is a process of ruling out other illnesses or diseases, thus leaving Still's disease alone on the list of possibilities. But even though diagnosing this rare disease is a process of elimination, there is a group or "constellation" of common signs and symptoms that lead the physician to suspect Still's disease.

Dr. Cush provided the workshop attendees with a list of the major external signs and symptoms he sees in his patients with Still's disease. The most significant and common symptom is a fever of 39°C or higher that occurs once a day (or occasionally, twice a day) at about the same time each day. After the fever peaks, it returns to below normal. Dr. Cush stated that although "rarely is a fever pattern diagnostic", it is in the case of a few illnesses, including Still's disease, and close attention should be paid to this finding.

Another characteristic finding is the pink salmon coloured rash that often appears with the fever spike and is most commonly found on the chest, abdomen and back. It is so typical of Still's disease that it is called a Still's rash.

Other common signs and symptoms are:

- sore throat
- joint pain and swelling
- chest pain on deep breathing
- weight loss
- muscle pain
- swelling of the lymph glands, liver or spleen).

As one can imagine, with this many symptoms for the physician to investigate, it is easy to understand why a number of other diseases have to be ruled out in order to accurately diagnosis Still's disease.

Also, certain laboratory tests are helpful. Common abnormalities include:

- a very high white blood cell count

- anemia (a low red blood cell count)
- very high markers of inflammation, especially ferritin.

Other illnesses/diseases that share some or all of the symptoms listed above include:

- Infections such as hepatitis, rubella (German measles), mononucleosis, and HIV/AIDS
- Infective endocarditis (an infection of the heart valves)
- Tuberculosis
- Lyme disease (a type of arthritis which is transferred by deer ticks)
- Cancer (including leukemia and lymphoma)
- Connective tissue disease, such as SLE (lupus).

Dr. Cush spent a significant amount of time during the workshop reviewing the signs and symptoms and various lab tests that help the physician to make a correct diagnosis of Still's disease. Like other types of inflammatory arthritis (e.g., rheumatoid arthritis), a delay in diagnosis,

The most significant and common symptom is a fever of 39°C or higher that occurs once ... or twice a day ... at about the same time each day.

and thus treatment, may contribute to more severe joint damage, the need for joint surgery earlier on in the disease course, and greater disability.

Once a Still's diagnosis is in hand, the physician and patient can begin making decisions around medication treatment. Dr. Cush gave a brief overview on the types of medication that are used to treat Still's disease. He touched on the use of biologic response modifiers or "anti-TNF" medications such as etanercept (Enbrel®) and infliximab (Remicade®), but focused mainly on the role of IL-1 medications, [interluken-one, a substance involved in inflammation] such as anakinra (Kineret®) which is an IL-1 receptor antagonist. Given that Still's disease is quite rare, there have been only a few reports of individual cases about the use of IL-1 receptor antagonist. A randomized control trial (the most common type of research study investigating whether a medication works) has not yet been done.

Dr. Avril Fitzgerald, from the University of Calgary, presented a poster on Still's disease at the scientific meeting comparing 4 people treated with anakinra to two who were treated with an anti-TNF medication. The results: The four treated with anakinra did significantly better than the two treated with the anti-TNF, leading her to conclude that IL-1 is an important cause of the inflammation in Still's disease. Dr. Cush and other rheumatologists worldwide agree with this conclusion.

The big "take home messages" from the Still's disease workshop were:

- Through careful examination of numerous symptoms, physical examination results and tests, as well as a process of eliminating other potential illnesses or diseases, the skilled physician can diagnose Still's disease in a timely manner;
- Timely diagnosis is critical to helping patients and their physicians make decisions about a treatment plan and catch the disease early and thus minimize the chance of joint damage and resulting disability;
- IL-1 plays a major role in fueling Still's disease and anakinra may be a helpful medication for severe forms of the disease.

For more information on Still's disease, visit www.stillsdisease.org

What language do you read in?

JointHealth™ is produced in English and French. To sign up and receive a free copy delivered to your email inbox or home, please email or write your request to ACE.

JointHealth™ est publié en français et en anglais. Pour vous abonner et recevoir gratuitement un exemplaire par courriel ou par la poste, adressez votre demande à ACE par courriel ou par écrit.

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Arthritis Consumer Experts

Who we are

Arthritis Consumer Experts (ACE) provides research-based education, advocacy training, advocacy leadership and information to Canadians with arthritis. We help empower people living with all forms of arthritis to take control of their disease and to take action in health care and research decision making. ACE activities are guided by its members and led by people with arthritis, leading medical professionals and the ACE Advisory Board.

To learn more about ACE, visit our website at: www.arthritisconsumerexperts.org

Guiding principles and acknowledgement

Guiding Principles

Health care is a human right. Those in health care, especially those who stand to gain from the ill health of others, have a moral responsibility to examine what they do, its long-term consequences and to ensure that all may benefit. The support of this should be shared by government, citizens, and non-profit and for-profit organizations. This is not only equitable, but is the best means to balance the

influence of any specific constituency and a practical necessity. Any profit from our activities is re-invested in our core programs for Canadians with arthritis.

To completely insulate the agenda, the activities and the judgments of our organization from those of organizations supporting our work, we put forth our abiding principles:

- ACE only requests unrestricted grants from private and public organizations to support its core program.
- ACE employees do not receive equity interest or personal "in-kind" support of any kind from any health-related organization.
- ACE discloses all funding sources in all its activities.
- ACE identifies the source of all materials or documents used.
- ACE develops positions on health policy, products or services in collaboration with arthritis consumers, the academic community and health care providers and government free from concern or constraint of other organizations.
- ACE employees do not engage in any personal social activities with supporters.
- ACE does not promote any "brand", product or program on any of its materials or its web site, or during any of its educational programs or activities.

Thanks

ACE thanks the Arthritis Research Centre of Canada (ARC) for its scientific review of JointHealth™.



Acknowledgement

Over the past 12 months, ACE received unrestricted grants-in-aid from: Abbott Laboratories Ltd., Amgen Canada, Arthritis Foundation, AstraZeneca Canada Inc., Aventis Pharma, GlaxoSmithKline, Merck Frosst Canada, Northwest Rheumatism Society, Pfizer Canada, Sanofi-Synthelabo, Schering Canada and Sto:lo Nation Health Services.

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