A “SMARTER” APPROACH TO ARTHRITIS CARE

Clinician-scientists developing new approach to treating joint pain

Back, knee and shoulder pain are among the most common reasons for a visit to the doctor’s office. In addition to pain, loss of sleep, reduced productivity and depression often result from a frustrating waiting game, when it may take months, even years to get an effective care plan, especially for patients suffering from arthritis.

“There’s nothing more frustrating for these patients than to wait months to see a spinal surgeon, only to be told that surgery is not the answer,” says Arthritis Program Spinal Surgeon Dr. Raja Rampersaud.

Dr. Rampersaud is spearheading the ISAEC study (Inter-professional Spine Assessment and Education Clinics). ISAEC is a model of care in which patients receive rapid low back pain assessment (less than two weeks on average), education and evidence-based management plans. It is designed to decrease the prevalence of unmanageable chronic low back pain, reduce unnecessary diagnostic imaging as well as unnecessary specialist referral. Patients are assessed by a chiropractor or physiotherapist who has been trained as an ISAEC Advanced Practice Clinician. A physician spine specialist provides ongoing clinical support and oversight of the advanced practitioners. ISAEC clinicians are located in the three program cities: Hamilton, Thunder Bay and Toronto.

Empowering patients

In a separate project, patients can use an “arthritis care” app that asks 5 to ten easy questions that help their healthcare provider personalize their care.

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USING a point-of-care algorithm, the tool helps the family physician identify which patients would benefit from exercise and lifestyle interventions such as physical therapy and weight loss, or those patients who should be referred to an orthopaedic surgeon.

SMART goals

Using the “SMART” goals approach: specific, measurable, attainable, realistic and timely; the module is designed to provide the patients with reminders and cues to support their treatment plans.

"Instead of waiting in pain and anxiety for months to see a specialist, patients can be starting their own treatment plans with information and tools that they need," explains Dr. Rampersaud. "It increases their confidence to manage their own condition."

"It also enables more effective interaction with their healthcare providers," he adds.

Changing the health system

From a health economics perspective, the ISAEC model has shown that there is a 33 per cent reduction in unnecessary MRI procedures. "We have shown this with 200 doctors. Imagine what the savings would be if this were rolled out to Ontario’s 8,000 family physicians.”

UHN is a proven leader in bringing new innovations and practice models to the healthcare system.

With over 4.5 million Canadians affected by the disease, arthritis is one of Canada’s most costly chronic conditions. Effective treatments can be elusive, leaving both physicians and their patients grasping for answers.

Now donors are stepping up to advance research in this area. For example, former TD Canada Trust CEO Ed Clark has made a $2 million donation to help launch a pioneering new enterprise: the Arthritis Health System Innovation Change Lab. Dedicated to developing new models of arthritis care, the lab is building on the collaborative nature of UHN’s Arthritis Program.

Project goals include developing a multidisciplinary team that includes front-line healthcare providers, innovators in health services and informatics, as well as administrative, business and policy leaders.

Co-directors Dr. Christian Veillette and Dr. Raja Rampersaud will oversee the creation of this focused initiative, utilizing information accrued from a variety of research endeavours to evaluate and implement effective system changes.

Including staffing requirements and infrastructure support, total funding of $10 million has been identified to complete the lab. "Thanks to Ed Clark’s support, we are well on the way to building an indispensible resource,” enthuses Dr. Rampersaud, "making fundamental improvements that dramatically improve arthritis research, education and patient care.”
RESEARCH

RESEARCHERS DISCOVER PROCESS LINKED TO JOINT EROSION

Osteoarthritis (OA) is characterized by the erosion of joint cartilage (the tough elastic material that protects the ends of bones). This damage is caused by inflammation, which can lead to joint stiffness and swelling that can be debilitating. The mechanisms responsible for joint inflammation and cartilage destruction in OA are not fully known; however, a recent study led by Arthritis Program Scientist, Dr. Mohit Kapoor, has revealed one of the processes responsible.

In a study published in the *Annals of Rheumatic Diseases*, Dr. Kapoor and his team used an experimental model of osteoarthritis. They discovered that PPARD — a factor that governs genes that respond to inflammation and joint destruction — is critical to keep the disease under control. When PPARD function was lost, joint inflammation and cartilage destruction increased. These two effects, when combined, accelerated the progression and severity of osteoarthritis.

This study suggests that medications capable of promoting PPARD function may be effective for osteoarthritis. These anti-inflammatory drugs are already approved for treating diseases like diabetes. As such, they represent an accessible option for improving the quality of life for people with OA.

Dr. Mohit Kapoor and his team have discovered one of the processes responsible for inflammation.

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system. The Arthritis Program is a prime example. Building on the initial success of the ISAEC study, specialists in the Arthritis Program will help expand this approach to knee and shoulder pain.

“We are eliminating the shotgun approach to treating joint pain,” says Dr. Rampersaud. He and Orthopaedic Surgeon Dr. Christian Veillette are co-directing the Arthritis Health System Innovation Change Lab (see sidebar on page 2).

Dr. Veillette is leading the development of information technology to capture patient data. His aim is to harness the data they have collected to track patient behaviour. Ultimately, health-care professionals will be able to monitor patients to see if they are complying with their regimens, and if not, work with these patients to change the care plan.

For patients who do require surgery to treat their conditions, Dr. Rampersaud believes this new approach will reduce their waiting times.

To support the work of Drs. Rampersaud and Veillette and their colleagues in the Orthopaedic Surgery Program, please contact Anette Larsson at anette.larsson@uhn.ca or 416 603 5800 x4059.

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A new study published in the *Annals of Internal Medicine* has revealed that people diagnosed with Ankylosing Spondylitis (AS), the most common form of inflammatory arthritis affecting the spine, have a higher risk of dying from a heart attack or stroke than the general population.

*Patients with ankylosing spondylitis have increased cardiovascular and cerebrovascular mortality: a population-based study,* links AS with a 35 per cent higher risk of dying from heart attack and a 60 percent increased risk of dying from stroke than those without AS.

"We performed what we believe to be the first large population-based study on this subject matter," says Dr. Nigil Haroon, the study’s senior author and staff rheumatologist in the Arthritis Program at Toronto Western Hospital. Commencing in 1995, the study included over 21,000 AS patients and 86,000 controls without AS, to determine the level of mortality risk AS patients face.

**Knowledge gap**

"There was a knowledge gap when it came to our understanding of the relationship between AS in connection to cardiovascular and cerebrovascular mortality," explains Dr. Haroon. "Unlike rheumatoid arthritis, where manifestations are clearly present through joint pain in the feet, hands, and knees, for example, with AS, most of the inflammation exists within the bone and spine—places we cannot see. We know that cardiovascular mortality is higher in chronic inflammatory disease; resultantly, there has been increasing interest in studying this in relation to AS."

Specifically, because the disease process of AS starts at a relatively younger age (15-45 years) in comparison to other forms of arthritis, this further underscores the importance of understanding all of the additional health risks.

"Patients with AS will have the disease for the next twenty to thirty years," explains Dr. Haroon. "Even though it is very uncommon for patients at this age to have a heart attack or a stroke, this is a long time for inflammation to have an effect on blood vessels. As patients age, the risk of stroke and heart attack increases and the effects of AS can accelerate the onset of these conditions."

"We should be very vigilant about other traditional risk factors — smoking, high cholesterol, diabetes, and lack of exercise," notes Dr. Haroon. "These need to be closely monitored and addressed in patients with AS so that their risk of heart disease and stroke is decreased."

Traditionally, patients with AS have been prescribed non-steroidal anti-inflammatory drugs to treat their symptoms. New treatments known as biologics, a type of medication meant to block certain proteins which underlie the inflammation in AS, have been shown to reduce symptoms and halt the progression of the disease. Dr. Haroon believes biologics may also have a role to play in reducing the onset of cardiovascular disease in patients with AS.
"If we believe that biologics control inflammation, and inflammation is responsible for cardiovascular disease, biologics should have a positive effect on reducing the incidence of an event," he says. "We don’t have large population-based data to study this yet, but hopefully we will soon."

"WE KNOW THAT CARDIOVASCULAR MORTALITY IS HIGHER IN CHRONIC INFLAMMATORY DISEASE."

Other possible studies include examining early markers of cardiovascular disease to screen and treat modifiable risk factors in patients with AS.

“For example, you could conduct ultrasound studies to see if atherosclerotic blocks are developing in the major blood vessels,” explains Dr. Haroon. “We are also considering studying the effect of TNF inhibitor treatment (a type of biologic therapy), on decreasing the risk of mortality. Overall, our study suggests that large multicentre trials assessing whether TNF inhibitors are preventing or delaying the onset of vascular disease are warranted.”

To support the work of Dr. Haroon and his colleagues in the Rheumatology Program, please contact Anette Larsson at anette.larsson@uhn.ca or 416 603 5800 x4059.

ARTHRITIS PROGRAM RHEUMATOLOGIST NAMED “MENTOR OF THE YEAR”.

Dr. Dafna Gladman has received a special honour from the Royal College of Physicians and Surgeons of Canada. Named the 2015 Mentor of Year, Dr. Gladman has been recognized for her leadership in the treatment of psoriatic arthritis and lupus. The award was established to recognize Fellows of the Royal College in good standing who have had a significant impact on the career development of students, residents and/or Fellows.

Dr. Gladman is Deputy Director of the Centre for Prognosis Studies in the Rheumatic Diseases at Toronto Western Hospital, Director of the Psoriatic Arthritis Program, University Health Network, and co-director of the University of Toronto Lupus Clinic. She is also a professor of medicine at the University of Toronto, and senior scientist at the Toronto Western Research Institute. She has researched both systemic lupus erythematosus and psoriatic arthritis with emphasis on database development, prognosis studies, genetic markers for disease susceptibility and expression, assessment instruments and quality-of-life measures. She has also been involved in clinical trials in these conditions.

“We are tremendously proud of Dr. Gladman to be recognized by her peers in this way,” said Arthritis Program Medical Director Dr. Nizar Mahomed.
NEWS

AN ENDURING TRIBUTE FROM A GRATEFUL PATIENT

A former CBC producer has included a touching tribute to his orthopaedic surgeon in a recently published memoir.

*The Man Who Learned to Walk Three Times* chronicles the life of Peter Kavanagh, a veteran of the Canadian media.

As an infant in the 1950s, Peter was infected with paralytic polio. He suffered permanent paralysis in the lower part of his left leg, which prevented it from growing properly. Throughout his childhood, he experienced many painful and experimental procedures to even out his legs. After leg braces, surgeries, even a full body cast, Mr. Kavanagh has had to learn how to walk three times over the course of his life.

After becoming a patient of orthopaedic surgeon Dr. Khalid Syed, Peter finally realized his lifelong dream of learning how to walk on legs that are the same length, in a body that can stand straight. Praising Dr. Syed as “brilliant”, Peter described his patient experience as remarkable.

After reading the book in one evening, Dr. Syed was both gratified and humbled.

“It is an incredible feeling and hugely satisfying. He has thanked all of us by writing his memoir and describing his wonderful experience with us in the immortal written word,” comments Dr. Syed.

OSTEOARTHRITIS PATIENT STARTS STEM CELL TRIAL

Manon Casal is the newest participant to test the safety of MSCs in early knee osteoarthritis. She has been suffering from pain in her knees for longer than she can remember. “I drive a school bus for work and the pressure on my knees is so painful,” she explains.

Manon has tried every current treatment available for her condition, but has found little relief from the discomfort and loss of mobility. She began the clinical trial in July 2015. The study will follow her progress for five years. “If it works, my knees will be rejuvenated, with no pain,” Manon states.

The trial involves 12 patients between the ages of 40 and 65 with moderate to severe osteoarthritis in their knees.
DONOR SUPPORT FUELS CAMPAIGN TO CURE ARTHRITIS

Gift from Lou and Marisa Rocca to advance lupus care

On May 21, 2015 the Lupus Clinic at Toronto Western Hospital celebrated a generous gift from Lou and Marisa Rocca, establishing the Lou and Marisa Rocca Family Lupus Clinical Suite.

"For the patients in our clinic, the advances made through this gift will translate into improved outcomes and quality-of-life," says Dr. Murray Urowitz, Director of the Lupus Clinic. "With support from the Rocca Family, we can make further investments in equipment and human resources to help increase our understanding of this debilitating disease and find better treatments that will bring about new options for improving patient care."

Grateful team thanks Gabi Weisfeld

Thankful to the team in the Arthritis Program, grateful patient Gabi Weisfeld has been supporting the Campaign to Cure Arthritis with gifts to the orthopaedics and rheumatology programs.

Gabi was presented with a silver Upper Canada Medical—a special honour conferred by Toronto General & Western Hospital Foundation to recognize generous donors.

L-R: Anette Larsson, Marisa Rocca, Lou Rocca, their children, Alessandro & Ellana, celebrate the opening of The Lou and Marisa Rocca Family Lupus Clinical Suite with Dr. Murray Urowitz and UHN Physician-in-Chief Dr. Ed Cole.

L-R: Dr. Rod Davey, Dr. Nizar Mahomed, Dr. Wayne Marshall and Dr. Dafna Gladman present Gabi Weisfeld (seated) with an Upper Canada Medal in recognition of her support.
Arthritis Program Medical Director, Dr. Nizar Mahomed and Arthritis Scientist Dr. Mohit Kapoor have authored a book, *Osteoarthritis: Pathogenesis, Diagnosis, Available Treatments, Drug Safety, Regenerative and Precision Medicine*, compiling the opinions of global experts in the field, written in a style that is accessible for patients and relevant for those with an interest or expertise in osteoarthritis.

"Patients in their 50s and 60s are living much more active lifestyles and show no sign of slowing down until they are hit with the joint pain and stiffness that makes activities increasingly difficult and eventually impossible," says Dr. Mahomed.

"My goal is to get them back to skiing, bike riding, hiking – whatever it is they love doing – as quickly as I can."

Depending on which joint is affected, recently diagnosed patients can read about how the disease is identified, the assessment process, as well as treatment options, which include surgical interventions.

**PATIENTS CAN READ ABOUT HOW OSTEOARTHRITIS IS IDENTIFIED AND MANAGED.**

The book also offers several chapters on the use of medical imaging, biomarkers, regenerative medicine and precision medicine – treatment that will be available in the not-so-distant future.

"Anyone who is living with osteoarthritis or who specializes in this area of medicine now has a go-to guide to help make sense of the information available,” says Dr. Kapoor.

"This book provides a common ground for both doctors and patients to learn about osteoarthritis and a jumping off point to discuss the best treatments or management options we have available."

*Osteoarthritis: Pathogenesis, Diagnosis, Available Treatments, Drug Safety, Regenerative and Precision Medicine* can be purchased on Springer.com and Amazon.ca.

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**ABOUT THE ARTHRITIS PROGRAM AT UNIVERSITY HEALTH NETWORK**

The Arthritis Program is the premier and largest multidisciplinary arthritis program in Canada. It has the largest division of arthritis clinical researchers in North America. Its Rheumatology division is ranked #1 in North America. Each year, more than 80,000 patients receive innovative and compassionate care from the program’s leading multidisciplinary arthritis team. The Arthritis Program is based at Toronto Western Hospital which along with Toronto General, Princess Margaret and Toronto Rehabilitation Institute, are part of University Health Network. All four are research hospitals affiliated with the University of Toronto.

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Donate online and get an instant tax receipt!

www.cureforarthritis.ca

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**ARTHRITIS EXPERTS PUBLISH COMPREHENSIVE MEDICAL TEXTBOOK**