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CRA SCR

The Journal of the Canadian Rheumatology Association

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EDITORIAL

Overheard at the Office

By Philip A. Baer, MDCM, FRCPC, FACR

"Ooh I heard it through the grapevine
And I'm just about to lose my mind."
— from "I heard it through the grapevine" by Marvin Gaye

I run a small solo office practice with just my secretary, me, and our patients physically present. From my own inner office, in between patients, it is not uncommon for me to pick up snippets of my secretary's conversations on the phone. While not hearing both sides does put me at a disadvantage, I sometimes can't help wondering what in the world is going on. Some recent examples are below:

The PMR Lab Test

A patient called the office. The patient has PMR[1] and had a lab form from me for blood tests every 8 weeks monitoring CBC[2], ESR[3] and CRP[4]. In the box labelled "clinical details (e.g., diagnosis)", I had used my lab form template listing "PMR", and on the line below "Repeat every 8 weeks." This has never been an issue on any of my lab requisitions created in the last decade, since I started using an EMR[5]. However, it apparently mystified the lab, as the patient reported that the lab employees had spent a long time looking through their manual of tests, where they could not find a test called "PMR"! My secretary sorted that out, but this might explain why the occasional lab has delivered serial RF[6] testing which I never ordered, likely based on the abbreviation "RA"[7] appearing in the same "clinical details" box.

The Eye Doctor

Another patient calls. She has had RA for 10 years, quite mild, and is on hydroxychloroquine (HCQ) with annual eye checkups for monitoring. In Ontario, being in the 18-64-year-old age group, she would not normally receive free eye care. However, I had completed the required form to have these examinations covered, which contains a box in which I must put the reason the patient qualifies. My template form states "On HCQ for [blank space] – requires annual eye monitoring." The blank is invariably filled in with either RA or SLE[8] as the diagnosis. The patient said the eye specialist wanted to know why she is on HCQ! This was bad for two reasons: the consultant evidently hadn't read the form (so were they doing the correct testing?), and my long-time patient doesn't seem to have absorbed what her rheumatologic diagnosis is.

The Lab Report

My secretary picks up the daily mail and returns with a paper lab report on one of our patients. This is from a major lab, which normally sends all my lab results electronically directly into my EMR. Rather curious that I would be getting a paper version, I find that it duplicates what I already have received digitally. It also tells me that the copy of the results I had requested to be forwarded to the patient's family physician could not be sent, as that doctor could not be identified based on the information I had provided. Interesting. I retrieved the electronic copy of the lab requisition and looked at the box specifying where copies were to be sent. That included the following information on the family doctor: first and last name, complete address, fax number and provincial billing number! I might add that the last name was a lot less common than Smith, Singh or Wong are in my community, so the information was perfectly adequate to identify one and only one physician. I had my secretary call the lab, both to put a stop to randomly getting unwanted paper reports, and to find out what more they needed to route copies of the results to the general practitioner (GP). The answer made no sense: they had recently upgraded their system, and now the GP was identifiable. I hope that's true.

No wonder the prevalence of physician burnout is on the rise. There isn't enough time in the day to deal with all these niggling issues. However, occasionally a recurring problem meets a pre-designed solution, giving me hope for a better future.

The Fourth COVID-19 Vaccine Dose

My patient on an advanced therapy for RA is seen in follow-up in the morning, having had three vaccine doses. As I tell every patient in this position, he qualifies for a fourth dose twelve weeks after receiving his third dose (that is the current rule in Ontario, at the time of this writing). Based on intensive work done by the ORA[9], led by Dr. Jane Purvis, we have established that patients do not require a letter from their rheumatologist to access this fourth dose. They just need to show their medication bottle or their pres-

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Overheard at the Office *continued from page 3*

cription list at the vaccination site. That position has been endorsed by our provincial Ministry of Health and the leadership of our major retail pharmacy companies. The patient says he is planning to get his vaccine at his local pharmacy which also supplies his RA medications. Great — there should be no problems.

The same afternoon, I hear my secretary talking to the same patient. His pharmacy, a store in a major chain, wants a letter from me before they will give him his shot. Well, I have a template for such letters, so I fax it over to the pharmacy so the patient will get what he needs. But I don't stop there: I also fax them the ORA one-pager on the correct fourth dose implementation protocol. And I contact Dr. Purvis and our ORA Executive Director with the pharmacy name and store number, address, telephone and fax numbers. Within the hour, I am assured that the relevant people at the Ministry of Health and at the pharmacy chain head office have been notified. Maybe that will help other patients and other rheumatologists avoid being faced with these situations. A small victory, but we need those occasionally to keep fighting the good fight on behalf of our patients.

Glossary:
1. PMR: Polymyalgia rheumatica
2. CBC: Complete blood count
3. ESR: Erythrocyte sedimentation rate
4. CRP: C-reactive protein
5. EMR: Electronic medical record
6. RF: Rheumatoid factor
7. RA: Rheumatoid arthritis
8. SLE: Systemic lupus erythematosus
9. ORA: Ontario Rheumatology Association

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Our Latest Patient Resources

By Trish Barbato, President and CEO, Arthritis Society

When you live with a chronic illness, having access to information and resources is important. At the Arthritis Society, we want to be able to benefit patients by providing them with new and updated information.

We're excited to announce some of our resources are now available in languages beyond English and French, which means more people will be able to access valuable information that could assist them on their patient journey. We have adapted our rheumatoid arthritis brochure into Simplified and Traditional Chinese, and into Arabic, with other languages to follow.

Living with a chronic illness can be difficult — not just on the body but also on the mind — so we've also created new meditation videos: an introductory one, and one for anxiety and stress.

It can also be difficult for patients to keep up with new treatments and the most current research, so we recently updated our content on biologics and biosimilars for the treatment of inflammatory arthritis, to help patients keep up with new treatments and the most current research.

Please share these resources with your patients and direct them to arthritis.ca/resources.

Arthritis™
SOCIETY

Passing the Torch

By Evelyn Sutton, Past-President, Canadian Rheumatology Association (CRA)

When I wrote the Presidential Address two years ago, I shared my experience of an April 2020, COVID-restricted wedding in Nova Scotia. Those were early days of the pandemic, before vaccines were developed, and public health was doing their best to stop the spread of a killer virus. So, the venue was outdoors, only five people total could be included (including bride, groom and officiant!), and there was no post-wedding reception/dinner celebration allowed. There had been some discussion about postponing the wedding until a time when restrictions eased and their families (Ontario-based) and friends could attend, but given no one could predict when that would be, the young couple decided that they would proceed as planned, and not let COVID derail their life plans. Since then, they have bought a house, given birth to a beautiful baby boy, and been able to visit, and be visited by, their Ontario-based families, navigating isolation protocols and even contracting COVID themselves (fortunately, the illness was mild, thanks to being fully vaccinated).

Kathleen Edwards, author of the book *Resilience*, writes "Resilience is accepting your new reality, even if it's less good than the one you had before. You can fight it, you can do nothing but scream about what you've lost, or you can accept that and try to put together something that's good." The CRA has embodied this definition of resilience and I suggest, together, we created something that is better than good. Individually and collectively, we had to change how we worked, played, relaxed and planned for the future. We have learned with and from each other, communicated evidence-based guidelines, shared strategies and developed new goals. Like the young married couple, we have kept our eye on what matters to us and worked together to plan a better future for current and future members.

I am delighted to hand the tiller over to Dr. Nigil Haroon who needs no introduction. He will be well supported by the hardworking CRA staff who, under Dr. Ahmad Zbib's superb guidance, supported our entire organization and me. I used to tell my children that we won the lottery by being born in Canada. I still believe that and being a member of the CRA is part of that prize. Best wishes to all of you and, once again (fourth time wishing this), I hope to see you in person in Quebec City next year!

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Presidential Address

By Nigil Haroon, President, Canadian Rheumatology Association (CRA)

Thank you, Evelyn, for your vision and leadership that has taken the CRA to new heights. Despite going through the worst pandemic of our lifetime, over the past two years, you took us through two virtual conventions and an incredibly productive and engaging couple of years. This was only possible because of your abilities as our leader. We have immensely benefited from your firm decision-making skills, collaborative and receptive nature, honesty, and willingness to adapt. What was most noted was your integrity as a leader, the emphasis on making sure everyone is heard, your strong focus on justice, equity, diversity and inclusivity, and the emphasis on sustainability. Your impact on the CRA is evident from the direction it has taken under your leadership. I have immensely benefited working alongside you and learning from you. Thank you for everything you have done and continue to do.

I completed my rheumatology training in 2007 in India and moved to Canada in 2008. Since then, I have been a member of the CRA and through the years have worked closely with many of you. You welcomed me with open arms, and in addition to interacting and learning from the incredible skills and knowledge of its members, the CRA provided numerous opportunities for personal growth. For that I am ever grateful.

During my term as CRA President, I will focus on membership engagement, increasing opportunities for your own personal and professional development, and leading the CRA's mission to enable your pursuit of excellence in rheumatic disease education, research and care that ultimately benefits our patients. I have no doubt that we will continue this journey to excellence, thanks to the incredible energy of our members who continue to support us generously through active engagement and participation in the important work of our committees. My greatest strength is the CRA staff team who work tirelessly to serve this great organization. I am so fortunate to be working with the most committed and skilled colleagues one can dream of. Under the leadership of Dr. Ahmad Zbib, the CRA staff has truly transformed our operations, and we are winning praise from many in the not-for-profit world. Thank you, Ahmad, Virginia, Claire, Mona, Sue, Madalyn and Sandra for the focus, organization and passion that you bring to the CRA. I look forward to working with you and serving the members of the CRA.

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The CRA's 2022 Distinguished Rheumatologist: Dr. John G. Hanly

Why did you become a rheumatologist? What or who influenced you along the way to do so?
My reasons for deciding to become a rheumatologist are in large part due to the influence of Professor Barry Bresnihan, with whom I worked for two years (1982-1984) in Dublin, Ireland. He was my role model, and his mentorship has sustained me throughout my career. Steadfast in his commitment to advancing care for patients with rheumatic diseases through research, he overcame significant professional challenges in his own career. Moreover, he inspired a cadre of rheumatology fellows to pursue an academic career track and most went on to establish independent research programs in Ireland or abroad. On a personal note, he was also great fun to be with and treated me as an equal despite the gap in seniority.

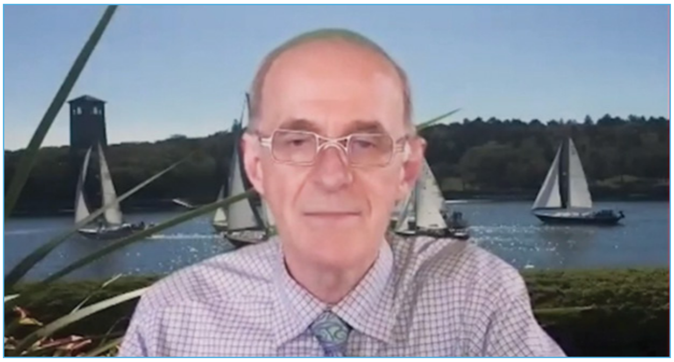
Born in Ireland and having obtained your medical degree from the National University of Ireland in 1978, you began your medical career in Dublin where you pursued a two-year Rheumatology Research Fellowship with Professor Barry Bresnihan in Dublin. This was focused on the clinical efficacy and immunomodulatory effects of total lymphoid irradiation in patients with severe rheumatoid arthritis. In 1984, you emigrated to Canada and undertook clinical fellowships in rheumatology and immunology at the University of Toronto and McMaster University.

a) From where did your passion and interest for rheumatology stem?
There are many attractive features to our specialty, both from a clinical and scientific perspective. These include the diversity in the types and severity of clinical disease, the opportunity to link basic science observations to the patient and the eventual translation of basic science to meaningful therapies, as a few examples.

b) Can you tell us more about your professional journey from Ireland to Canada and why you made the decision to move to Canada?
When I left Ireland in 1984 it was customary to pursue subspecialty training outside the country, either in the UK or in North America. My twin brother, who is a respirologist, had relocated to Canada a couple of years earlier, so that was one reason. The other was that there were opportunities for both my wife (also a physician) and me, in Canada, at McMaster University and the University of Toronto, respectively.

In addition to your clinical and teaching activities you are also a respected clinical investigator. As a researcher you have received continuous peer-reviewed funding from the Canadian Institutes of Health Research (CIHR) since 2002. Your focus has been the study of pathogenic mechanisms of systemic lupus erythematosus and their clinical outcomes. Your most significant contributions have related to the effects of lupus on the brain and other parts of the nervous system. Your publication record on neuropsychiatric lupus is internationally recognized. Can you tell us more about your research and its impact on our understanding of SLE and its implications for patients?
My decision to focus on nervous system lupus in the early part of my career was somewhat fortuitous and assisted by the support of colleagues during my training and at my home institution in Halifax. Early work contributed to our understanding of pathogenetic mechanisms and the clinical course of cognitive dysfunction, one of the most common forms of nervous system lupus. In the last 20 years I have been able to extend this work to a large, international inception cohort of SLE patients. This effort has received long-term funding from CIHR, resulted in several high-profile publications and fostered many collaborations with colleagues across Canada and the world. The messages for patients are that only 30% of all nervous system events in SLE patients are attributable to lupus, the outcome of these events is frequently very good, and we are steadily advancing our understanding of how lupus affects the brain and other parts of the nervous system.

On an international level, you are Past Chair of the Systemic Lupus International Collaborating Clinics (SLICC), an international research network of lupus investigators in 16 countries. Through your ongoing membership of national and international networks involved in clinical studies of



Dr. Hanly receiving the CRA Distinguished Rheumatologist Award during the virtual gala in February 2022.

lupus, you continue to be a productive contributor to this field. How has international collaboration helped shape the field of rheumatology, and specifically SLE, here and elsewhere?
SLE is a relatively rare disease, so collaborative research is important to achieve success. The Canadian centers involved in SLICC have contributed substantially through leadership of the organization, championing individual research projects and patient recruitment. Over the past 30 years the collective success of SLICC has greatly exceeded what any individual SLICC center could have achieved in isolation. Knowledge gained has been translated to improvements in SLE patient care.

What is the greatest professional and organizational challenge you have faced, and how did you address/overcome this challenge?
All clinician researchers are challenged to protect their time for research while fulfilling their other clinical and academic responsibilities. The goodwill of local colleagues, a supportive academic environment and a steadfast belief and commitment to the mission are key to success.

What major changes to the landscape of rheumatology have you witnessed over the course of your career?
The emergence of new diagnostic and therapeutic modalities in the advancement of clinical care, and the value of research collaboration as a key component to scientific advancement and success.

What do you foresee as challenges to Canadian rheumatologists in the future and what can individual rheumatologists and the CRA do to meet these challenges?
In clinical practice, the administrative burden involved in securing access to new medications for patients is ever increasing. Clinician-researcher positions in academic rheumatology centers have not kept pace with expanding rheumatology resources and "hard" funding for such positions is diminishing. The CRA is the profession's advocate to address both issues.

You are the recipient of numerous awards in recognition of your achievements in lupus research, including the ACR Edmund L. Dubois Memorial Award, the CRA Distinguished Investigator Award and the Ira Goldstein Honoree Award from New York University. Furthermore, you have also been designated a Master by both the CRA and ACR. What was your first thought when you learned that you would be receiving the CRA Distinguished Rheumatologist Award?
I was flattered, grateful and humbled to receive the award. It was an honour to join the list of outstanding rheumatologists who had previously received the award.

What do you believe are the qualities of a distinguished rheumatologist?
I hope that the designation would apply to one who has contributed to advancing the care of patients with rheumatic diseases.

What is your favourite food or cuisine?
My wife's!

What are your dream vacation destinations?
Safari in Kenya and visiting New Zealand.

How many cups of coffee does it take to make a productive day?
Two

We understand you have an identical twin who is also a distinguished physician, now in Canada. How were your career paths intertwined and how did you help each other to achieve professional success?
The bond between identical twins is special and probably unique among siblings. My brother and I have both pursued an academic career track in medicine, albeit in different specialties. We have had shared experiences navigating this route and been able to advise each other at different junctures — be that in the academic or political spheres. We are both married to wonderful and inspiring spouses who are also academic physicians and have enjoyed great success in their own careers. My brother and I continue to share similar interests outside of work — gardening, fly fishing and rugby (enduring life-long supporters of Munster Rugby and Ireland).

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The CRA's 2022 Distinguished Rheumatologist: Dr. Lori Tucker

Why did you become a rheumatologist? What or who influenced you along the way to do so?

I think I might have been destined to be a rheumatologist, actually! Prior to attending medical school, I spent a year in a wonderful immunology lab, run by Dr. Matthew Scharff at Albert Einstein College of Medicine, where I learned about monoclonal antibodies, cellular immunology, and was fortunate to be part of a fantastic model of translational research. After medical school, when I started my pediatric training in Boston, the new Department Head was Dr. Jane Schaller, a true pioneer in pediatric rheumatology. This was the first time I even learned that pediatric rheumatology could be a career choice, and I found myself drawn to the combination of complex diagnostics, immunology, and chronic disease management. I also really loved the team aspect of care; I love working with nursing, physiotherapy, occupational therapy, social work all together. It was the perfect fit for me.

You are clinical professor in pediatrics and Division Head of Pediatric Rheumatology at the University of British Columbia and BC Children's Hospital, as well as Clinical Investigator at the BC Children's Hospital Research Institute. In addition to this, you're one of the founding members and Past-President of the Canadian Alliance of Pediatric Rheumatology Investigators, the Canadian national network for pediatric rheumatology research.

a) From where did your passion for pediatric rheumatology stem?

My passion for pediatric rheumatology comes from the children and their families. I have always loved the "solving the puzzle" aspect of pediatric rheumatology diagnostics and using my knowledge to help families understand what is wrong with their child and how to make it better. I feel it is a privilege to help children with rheumatic diseases grow and develop to their best capacity, and I love the long-term care aspect of what we do. I also love working as part of a team — most of the best clinical care and research have resulted from the amazing teams I have been privileged to work with.

b) Can you tell us more about CAPRI? What led to its founding and how has it impacted Canadian rheumatology?

The pediatric rheumatology community in Canada has always been a close, collegial, and friendly group. When I moved to Canada, I felt so welcomed here. In 2011, we all came together at a seminal meeting in Vancouver, led by Ciaran Duffy, and agreed that we should do collaborative Canadian pediatric rheumatology research as a group. From that meeting, CAPRI — the Canadian Alliance of Pediatric Rheumatology Investigators — was born. As a fully volunteer group, inclusive of all pediatric rheumatologists and those engaged in significant pediatric rheumatology research in Canada, we have been incredibly successful in obtaining grant funding and completing a series of national projects. I would say the largest impact we have had is in demonstrating our ability to do multicentre projects in a collaborative way. We have capitalized on some of our members' tremendous talents in epidemiology, bench science, and clinical science, in an environment where everyone's contributions are valued. I am personally excited to see a younger generation of Canadian pediatric rheumatologists coming together in CAPRI to work in this same way, and I can say, we're in good hands with this new generation!

You have co-led the two largest multicentre longitudinal research studies on juvenile idiopathic arthritis (JIA) in Canada over the past 15 years, ReACCh-Out, and LEAP (short for Linking Exercise, Physical Activity, and Pathophysiology in Canadian Children with Juvenile Idiopathic Arthritis) and were instrumental in the development of the national longitudinal CAPRI JIA Registry. You have also established a clinical program in auto-inflammatory diseases at BC Children's Hospital serving the province of BC, which incorporates translational research in every clinical encounter.

a) Can you tell us more about your research work and how it has shaped the pediatric rheumatology landscape?

I have been incredibly fortunate to be part of a national group of pediatric rheumatology investigators who have worked incredibly well together to study children with JIA in Canada. The dream, when we first applied for funding for the ReACCh-Out research team project, was to establish a longitudinal registry to collect detailed information about children diagnosed with JIA from every corner of Canada — and we have been successful in doing this. This initial project set the stage for future work, and our group developed methods of multicentre data collection and sample collection that have been used in subsequent important projects. Our ReACCH-Out results have shown that with current treatments, the majority of children in Canada newly diagnosed with JIA have well-controlled disease within six months, and we have been able to understand predictors of severe disease, trajectories of pain and quality of life, and factors associated with risks of flares. Through work done with children with JIA and parents, we have identified outcomes of specific interest to them, have used our data to develop prediction methods for these outcomes, and are now embarking on an ambitious trial of using these prediction methods in clinical shared decision-making across Canada. The skills, passion, and hard work of so many pediatric rheumatologists across the country in moving this research along into real clinical change is truly wonderful to see.

I also want to recognize that the initial work of ReACCh-Out, with Ciaran Duffy, Kiem Oen, Rae Yeung, led to other really important projects obtaining funding — Alan Rosenberg and BBOP (Biologically Based Predictors of JIA), and Rae Yeung and Susa Benseler with UCAN-CAN DU (Understanding Childhood Arthritis Network). These projects provide on-going collaborative research, Canadian-led, in pediatric rheumatology.

Dr. Tucker receiving the CRA Distinguished Rheumatologist Award during the virtual gala in February 2022.

In addition to your clinical and research activities, you have worked tirelessly in patient advocacy and in strengthening clinical team/parent/patient partnerships as the Medical Advisor and Board member for Cassie and Friends: A Society for Children with Arthritis and Rheumatic Diseases. This national parent and patient-run organization has become the strongest voice for pediatric rheumatology in Canada, raising funds for direct patient needs and research, providing on-line information and education sessions, and developing parent and youth support programs. Why was getting involved in patient advocacy important to you? Can you provide a concrete example of how Cassie and Friends has improved pediatric rheumatology care for patients?

I have always believed that our patients count on us to speak up on their behalf, and with them, for equitable access to care that will lead to the best outcomes. This is one of our responsibilities as pediatric specialists. I am interested in how we, as physicians, the medical experts, can work with government, administration and others to improve care. And, when you work with children with rheumatic diseases, you learn very quickly that basic awareness of these diseases and their challenges is very low, making it difficult to get attention for them.

Children with arthritis and other rheumatic diseases and their families, never really had a strong visible public voice in Canada, and there was no group solely dedicated to issues important to our patients. Cassie and Friends is now that group. Started as a provincial-based group in BC, it is now national. It is absolutely breathtaking to see Cassie and Friends viewed as the credible voice for pediatric rheumatic disease in Canada — with the clinic teams, research funders, government, and media. Pediatric rheumatologists across the country are working with their own teams and Cassie and Friends on local and national projects. We now have a dynamic youth program, providing youth with rheumatic disease a way to meet others and develop support programs, participate and drive research. The virtual education programming that Cassie and Friends have done since the start of the pandemic is incredible, and so many of our families use the education “library” at the point of need. I love working with Cassie and Friends, because I see the impact of our work every day in the clinic, talking to families.

What major changes to the landscape of pediatric rheumatology have you witnessed over the course of your career?

There are several, but the most impactful is the introduction of methotrexate and subsequently biologics to the treatment of JIA. The changes in treatment of children with JIA, driven by scientific knowledge, have completely transformed the outcomes of most children with these diseases. Our photos from Arthritis Camp in BC from 25 years ago show children using crutches and wheelchairs, growth limited from use of steroids, whereas today we see healthy, well-appearing kids.

One other fascinating change is the evolution and expansion of our understanding of auto-inflammatory diseases, driven by basic and translational research. Pediatric rheumatologists now have a whole new set of diseases to diagnose and treat, and there are new things to learn every day.

What do you foresee as challenges to Canadian pediatric rheumatologists in the future and what can individual rheumatologists and the CRA do to meet these challenges?

Our challenges in pediatric rheumatology are related to improving care for children and youth with rheumatic diseases in Canada, and increasing our research capacity and output, and translating these new insights into better care. We still see children referred for rheumatologic diagnosis and care late in their disease onset, and there are still serious problems with access to care and needed treatment for many children with rheumatic diseases.

What was your first thought when you learned that you would be receiving the CRA Distinguished Rheumatologist Award?

I was shocked, surprised, and very honoured, to be honest. I value my pediatric colleagues and collaborators as work partners and friends, and it means so much to me to be recognized by the rheumatology community for the work I have done over the years. I also have so much respect for the work that the CRA does, with rheumatologist volunteers, on behalf of our profession and our patients. This makes the honour even more special to me, coming from this organization that holds a special place in my heart.

You are marooned on a desert island? What book would you like to have on hand with you?

I would want to have a sketchbook, pencils and drawing pens.

If you had an extra hour in the day, how would you spend it?

In sunny weather — a bike ride in Vancouver. In rainy weather (always have to be prepared in Raincouver) — knitting or baking.

What is your favourite food or cuisine?

I will never turn down ice cream, and I love a complex, interesting dessert.

What is your dream vacation destination?

Hiking in Patagonia.

How many cups of coffee does it take to make a productive day?

I might be a Vancouver coffee snob — it’s not just the number of cups but the quality.

Two cups, and my preference is not Starbucks, but either my own home brew or a cup from one of the many local coffee shops around my home.

Lori Tucker, MD, FRCPC,
Clinical Professor in Pediatrics,
Division Head, Division of Rheumatology,
Department of Pediatrics
Clinical Investigator,
BC Children’s Hospital Research Institute
BC Children’s Hospital and University of British Columbia
Vancouver, British Columbia

The CRA's 2022 Emerging Investigator: Dr. Jessica Widdifield

You are a Scientist at the Sunnybrook Research Institute in the Holland Bone & Joint Research Program, and ICES, as well as an Assistant Professor at the Institute for Health Policy, Management and Evaluation (IHPME), where you also teach courses on introductory and advanced health services research methods in the Clinical Epidemiology and Health Services Research programs. You lead an innovative and successful research program, focused on outcomes and health services research in rheumatic and musculoskeletal diseases (RMDs). What's more, you already have over 60 publications providing real-world evidence to enhance patient care, patient outcomes, and health system efficiency and sustainability for RMDs across the care continuum. Can you tell us more about your research?

The overall objective of my research program is to contribute to knowledge to inform strategies for optimizing care and outcomes for patients with RMDs, and to strengthen health system capacity to optimally manage these conditions. My research takes a population health approach leveraging rich and diverse secondary data sources (health records) and my contributions have focused on four key areas of activities.

One area focuses on quantifying changes in the population-level burden of RMDs over time and health system capacity to meet growing patient demands for these patients. Within this area of research, I have also quantified changes in the rheumatology workforce over time, changes in the population-level and practice-level encounters with rheumatologists over time (i.e. patient volumes), geographic variation in the supply of and access to rheumatologists, and assessed differences between male and female rheumatologists in terms of clinical activity and remuneration.

My second research area focuses on evaluating patient outcomes, including outcomes of disease (such as mortality), outcomes of interventions (such as pharmacoepidemiological assessments), and outcomes of care — the latter of which I have a focused interest in demonstrating the value of early access to and retention in rheumatology care on improving outcomes.

My third area of research focuses on quality measurement, as it's important to monitor that care provided to patients with RMDs is safe, effective, timely, efficient (using resources to achieve the best possible value), equitable, and patient-centered. Of these six domains of quality care, I prioritize evaluations on monitoring timeliness of care and treatment of inflammatory arthritis, as long wait times for rheumatology care are one of the strongest signals to demonstrate the lack of health system capacity to meet patient demands

My fourth area of research works in synergy with efforts distilled across the other three areas of activities, where I contribute to enhancing research capacity and advancing the science for using secondary data (both health administrative data and electronic medical records [EMRs]) for research and quality measurement activities. These secondary data sources can play an important role in guiding population health management and evaluations of care and outcomes, but there are uncertainties surrounding the data quality (validity and reliability) as these data were not originally collected for research purposes. Therefore, the use of these data requires careful and ongoing evaluation.

It sounds like a lot, but I am fortunate to have a lot of great collaborators to tackle these areas with me.

Your research has made important contributions to advancing the understanding of rheumatology workforce changes, and the population-level burden of disease, health determinants, outcomes of care, healthcare delivery and quality of care for patients with RMDs. What do you foresee as changes to the Canadian rheumatology landscape in the next decade? Do you think the rheumatology manpower shortage will be solved? If so, how?

From a health human resources planning perspective, I am concerned that the issues adversely affecting the rheumatology workforce will only amplify with time. Considering that we already have a deficit of rheumatologists, taking into account Canada's ongoing rapid population growth from immigration and an aging population, and that the training of a rheumatologist is approximately a nine-year education process (including medical school), unless investments happen today to allow expansion of rheumatology training programs, in 10 years we will still be experiencing a deficit. However, the rheumatology community is resilient, so I do not want to sound too pessimistic. Collectively, if we prioritize efforts that invest in strategies to strengthen rheumatology workforce capacity, I have a more positive outlook. These efforts will need to focus

Dr. Widdifield receiving the CRA Distinguished Investigator Award during the virtual gala in February 2022.

on: 1) increasing recruitment of clinical full-time equivalent rheumatologists (e.g., increasing exposure to rheumatology in medical school, increasing rheumatology residency spots, ethically recruiting international medical graduates); 2) improving the regional distribution of rheumatology care across Canada; 3) enhancing retention of rheumatologists within the workforce; 4) promoting and enhancing workforce capacity with interdisciplinary healthcare providers (e.g., government, regional, and local funding supports to expand interdisciplinary models of care to support rheumatology practices); 5) funding research to provide data about how to more efficiently utilize the rheumatology workforce and to better plan for the future healthcare needs of Canada's population; and 6) supporting equity, diversity and inclusion in rheumatology (e.g., developing and implementing programs to enable all to thrive, rectifying gender-based inequities in pay schedules).

From a rheumatology research and practice perspective, I think environmental sustainability may take a more prominent role within the rheumatology landscape in the next decade. The health sector uses considerable energy; consumes large quantities of plastics, paper and other resources; and produces significant amounts of waste. It's increasingly recognized that we need to reduce the environmental impacts of the health sector, so that we do not compromise our ability to meet the needs of future generations. I think in the coming years, it will become much more commonplace to apply an environmental sustainability lens to every day practices. For example, researchers will increasingly embed environmental costs and benefits as an outcome measure or a dimension of quality. We are going to see standard metrics and research methods for assessing the environmental effects of health system activities. Clinical guidelines, and care practices will begin to incorporate environmental sustainability into clinical decision-making (e.g., encouraging the use of telemedicine for stable patients to reduce the carbon footprint of transportation, adopting "pharmEcovigilance" and sustainable use of pharmaceuticals to reduce environmental contamination such as proper disposal of leftover drugs, adoption of sustainable packaging for pharmaceutical products). We may even see granting agencies and funding reviewers (maybe even ethics review boards) scrutinize study protocols for ethically responsible practices (e.g., are all study visits necessary or could patient-reported outcomes be collected electronically?). Identifying and reducing administrative waste, and operational waste (such as unnecessary repeat testing/imaging and other redundancies/inefficiencies) will all be increasingly important during the next decade.

There is a saying that success is the sum of small efforts, repeated day in and day out. For whatever is on the horizon, I have no doubt that the rheumatology community will collectively pitch in to address the issues affecting the sustainability of the workforce, and also champion the environmental sustainability movement — whereby patients, caregivers, and researchers, see the world that surrounds us as an integral whole.

At this year's CRA Annual Scientific Meeting Emerging Investigator Address, you presented research findings on the pandemic's impact on patients and rheumatologists. What other areas of research are you currently working on now?

My attention is now focusing on the Rheumatology EMR database at ICES. Over the past few years, we have been aggregating EMR data from Ontario rheumatologists into a centralized database. There was a lot of administrative work to get this project off the ground, with privacy and legal matters to attend to, preparing the infrastructure to securely house the data, and finalizing the process for extracting and acquiring rheumatology EMR data into a central data repository. Once the EMR data arrives, it needs to be processed, de-identified, and data variables mapped across individual practices into a common data model/schema, with a data dictionary to reflect the data content and structure. Then detailed data quality assessments are undertaken to inform which research questions can be feasibly and accurately addressed using the data. Recruitment of rheumatologists to participate (in sharing a copy of their practice data) is being done in phases and expansion of participants is underway. This novel data source will provide tremendous opportunities for collaborative research activities with the larger rheumatology community to really harness the power of using EMR data for research and quality measurement and improvement activities.

What has been your proudest professional accomplishment to date?

It's difficult to single out my proudest moment, as different accomplishments have impacted me in different meaningful ways. Being awarded a Banting Postdoc Award brought me to tears, so that was definitely the most emotional accomplishment, as a CIHR peer review panel felt I was deserving to continue my training towards an independent research career. That gave me a much-needed confidence boost (at a time when I needed it the most). Receiving a Stars Career Development Award from the Arthritis Society was also an important milestone. Starting out as a new investigator can be overwhelming, constantly being pulled in different directions, as other internal and external forces may be directly or indirectly influencing research activities we undertake. The Stars Award helped me to prioritize my research program. And of course, I am deeply honoured to be the recipient of the 2022 CRA's Emerging Investigator Award. To be recognized by my peers for my contributions to rheumatic disease research in Canada is very special.

Jessica Widdifield, PhD
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CRA Great Debate 2022: Be It Resolved That the Rheumatology Healthcare Provider is Responsible for Prescribing and Monitoring Physical Activity

By Volodko Bakowsky, MD, FRCPC, on behalf of Arthur Bookman, MD, FRCPC; Marie Clements-Baker, MD, FRCPC; Claire LeBlanc, MD, FRCPC; and Laura Passalent, PT, BScPT, MHSc, ACPAC

There was great anticipation and enthusiasm that the CRA Great Debate would once again be held in front of a live audience. The debaters had all signed on with this expectation. We were vaccinating ourselves out of the pandemic and life was going to be getting better… except it didn't really work out that way. A variant called Omicron disrupted the world and threw a wrench in our meeting plans. "Live" reverted once again to "virtual."

The debaters all shared an interest in exercise and fitness. Unsurprisingly, each one of them wanted to debate in favour of the motion. However, after a combination of cajoling and thinly veiled threats from the debate chair, the general good nature of the debaters shone through and allowed for mutually satisfactory final teams. On the "for" side" were Laura Passalent and Dr. Claire LeBlanc, and on the "against" side were Drs. Art Bookman and Marie Clements-Baker. Pre-meeting, the Las Vegas bookies had the "for" side listed as 3:1 favourites.

Advanced Clinician Practitioner in Arthritis Care (ACPAC)-certified physiotherapist Laura Passalent started off the debate in favour of the motion. She outlined the 2018 European Alliance of Associations for Rheumatology (EULAR) recommendations for physical activity for people with arthritis and followed this up with several systematic reviews demonstrating the beneficial effect that physical activity has on many of the symptoms that our patients with rheumatic disease suffer from. Her final point was that most rheumatology practitioners are already assessing and recommending physical activity for their patients and emphasized that patients are more likely to adhere to recommendations when their rheumatology practitioners are involved in physical activity prescription and monitoring.

Next up was distinguished professor, Art Bookman. He painstakingly had tabulated the total amount of time in a rheumatology residency allocated to exercise rehabilitation education. The computational analysis came back with the result of ZILCH! He further pointed out that rheumatology "thought leaders" such as Philip "Darth Vader" Baer and Janet "Cat Woman" Pope possess many talents, but anything resembling credibility in the domain of exercise therapy is not among them. Although there are some rheumatology healthcare providers, such as ACPAC-certified therapists, who do indeed possess the necessary expertise, there are far too few of them to satisfy demand, which would result in a care gap that cannot be filled by rheumatologists.

The second speaker for the "for" side was Claire LeBlanc. She first went over the ways that exercise has been shown to be beneficial for the treatment of pediatric rheumatologic disorders. She then shredded the nihilism of the "negative nellies" with the message that barriers are not insurmountable, and "Behaviour change is more likely with our support!" She closed her thesis by wearing a hockey helmet and mouth guard, an image that I suspect cannot be unseen.

"New Granny" Marie Clements-Baker had the anchor leg of the debate. She pointed out that half of rheumatologists in a recent survey reported that they are burned out. Furthermore, the leading factor contributing to burnout was reported to be "too many bureaucratic tasks." While she agreed that regional programs should support physical activity, no one should be asking rheumatologists to do it!

With all the arguments in, it was time to go ahead with the vote. In a moment of great surprise to the debate chair, as well as the Las Vegas bookies, the motion was voted down "like a boss!" The good sport and collegiality of the debaters, however, was a dead draw.

Claire summed up the spirit of the debate best when she said, "These last two years have been so difficult for everyone, I just wanted so badly to make people laugh and give them a moment of joy." I think in that regard, the "exercise" was a success!

Volodko Bakowsky, MD, FRCPC
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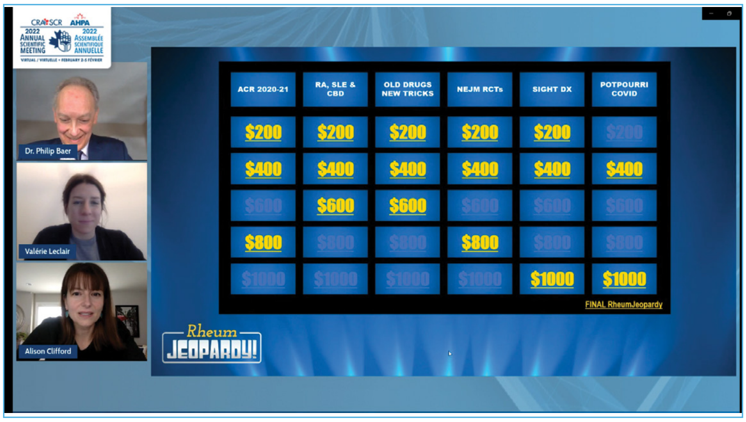
RheumJeopardy 2022

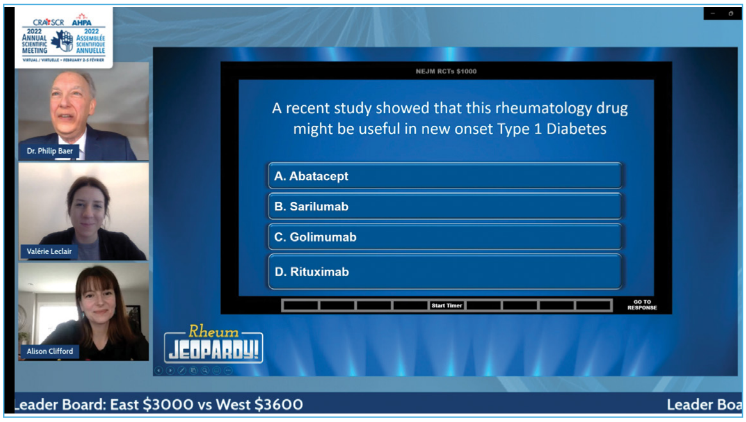
By Philip A. Baer, MDCM, FRCPC, FACR

For the seventh consecutive year, *RheumJeopardy* returned as a plenary session at the 2022 CRA ASM. The virtual format again required some adjustments to work on the HOPIN meeting platform, but the essence of the game experience was preserved. I moderated from my home office with the expert technical assistance of the team from MKEM. After a 0-0 tie in the 2021 edition, Dr. Alexandra Legge returned as Chair and scorekeeper. We maintained the traditional East versus West format, with Toronto the dividing line again this year. Our team captains were Dr. Valérie Leclair from Montreal and Dr. Alison Clifford from Edmonton. As in 2021, only the members of the team whose captain had selected a question voted on the answer, which had the effect of lowering the potential scores. The team captains selected the Final Jeopardy wagers and answered the Final Jeopardy question on their own.



ACR 2020-21	RA, SLE & CBD	OLD DRUGS NEW TRICKS	NEJM RCTs	SIGHT DX	POTPOURRI COVID
$200	$200	$200	$200	$200	$200
$400	$400	$400	$400	$400	$400
$600	$600	$600	$600	$600	$600
$800	$800	$800	$800	$800	$800
$1000	$1000	$1000	$1000	$1000	$1000

FINAL RheumJeopardy



NEJM RCTs $1000

A recent study showed that this rheumatology drug might be useful in new onset Type 1 Diabetes

A. Abatacept

B. Sarilumab

C. Golimumab

D. Rituximab

Leader Board: East $3000 vs West $3600

Leader Boa

The session drew a large audience of enthusiastic participants, with 299 meeting delegates participating live. After a practice question related to the worst Jeopardy score ever (-$7,400), 14 questions were selected in the main game. They proved to be challenging, but our teams were more than up to the task. Potpourri/COVID and Sight Diagnoses were the most popular categories. The CRA Education Committee contributed three questions on Competency by Design (CBD), and two were selected. One stumper related to the frequency of joint infection after steroid injections. The answer selected was 1 in 10,000, whereas the Danish study cited found an incidence of 1 in 1,250.

In honour of Dr. Simon Carette presenting the Dunlop-Dottridge Lecture on "Vasculitis: What Have We Learned in the Past 50 Years?", four *RheumJeopardy* questions dealt with various types of vasculitis: giant cell arteritis (GCA), granulomatosis (GPA), systemic lupus erythematosus (SLE) vasculitis and anti-neutrophil cytoplasmic antibodies (ANCA)-associated vasculitis.

At the end of the main Jeopardy round, the score favoured West with 5,200 over East with 3,700. Both captains broke with tradition, perhaps related to the score, and did not elect to wager everything on the Final Jeopardy question. The category was "WHO Award Winners", rather than the traditional "Famous Canadian Rheumatologists." In keeping with the meeting theme of "Towards Equity: Rheum for Everyone," the question focused on women overlooked in scientific history. Rosalind Franklin, who played a key role in the discovery of the structure of deoxyribonucleic acid (DNA), and Lise Meitner, who was a pioneer in nuclear fission, were potential answer choices. However, the correct answer was Henrietta Lacks, whose cervical cancer cells were used without her permission to develop the HeLa line of immortalized cells which have been used for 70 years in scientific research, and whose unauthorized use remains the subject of current lawsuits.

That question stumped both team captains. East had wagered 66% of their score, while West with the lead had wagered only 33%. That left West as the winning team with 3,467 versus East's score of 1,267. That means Dr. Alison Clifford will likely chair *RheumJeopardy* in 2023 in Quebec City if the ASM Scientific Committee grants us a place on the agenda. Let's hope so!

Philip A. Baer, MDCM, FRCPC, FACR
Editor-in-chief, CRAJ
Scarborough, Ontario

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* Comparative clinical significance is unknown

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‡ Prescription and physician data were obtained from eXel™ support program enrolment forms collected from June 2014 to November 2018 and from the PfizerFlex Patient Support Program which replaced the eXel™ program from 2018 onwards

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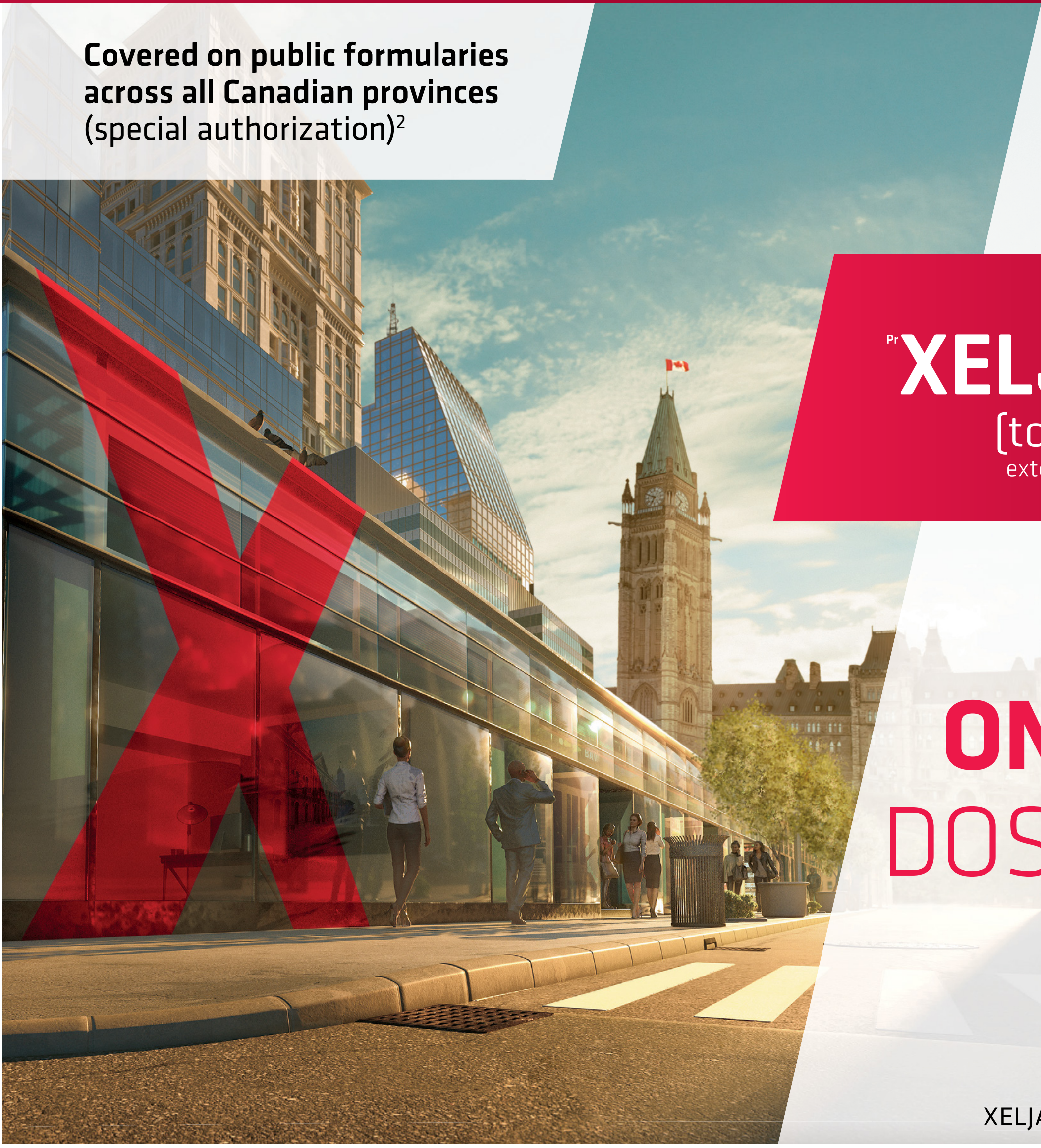

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Maladaptive Sleep Beliefs and Attitudes Are Associated with Insomnia Among Individuals with Arthritis

By Deborah Da Costa, MA, PhD; and Emilie McGuire

Sleep disturbances, including difficulty initiating sleep, maintaining sleep, and/or early morning awakenings, are all types of insomnia, reported in up to 70% of persons with arthritis.[1] Rigid beliefs and unrealistic expectations about sleep are viewed as important to the maintenance of insomnia.[2,3] In the general population and in other clinical populations, individuals with insomnia exhibit higher levels of unhelpful sleep beliefs compared to good sleepers.[4,5] Cognitive behavioural therapy for insomnia (CBT-I) has been shown to reduce dysfunctional beliefs about sleep, and improve insomnia symptoms.[6]

Little is known about the presence and types of maladaptive sleep beliefs among individuals with arthritis. To guide the tailoring of an internet-delivered CBT-I intervention, we examined unhelpful sleep beliefs and their association to insomnia severity among persons with arthritis. A total of 254 individuals with arthritis recruited via social media and arthritis patient organizations (mean age 61.6, SD 13.2, 84.3% women) completed an online survey assessing sociodemographics, disease-related factors, depression, and stress. The Insomnia Severity Index (ISI)[7] and the 10-item Dysfunctional Beliefs About Sleep Scale (DBAS)[8] were also administered. DBAS scores were significantly higher for individuals with inflammatory arthritis (IA) with clinical insomnia and subthreshold insomnia compared to those with no insomnia symptoms. The top three most commonly rated dysfunctional sleep beliefs among individuals with arthritis experiencing clinical insomnia were as follows: 1) I am concerned that chronic insomnia may have serious consequences on my physical health; 2) After a poor night's sleep, I know that it will interfere with my daily activities on the next day; and 3) When I feel tired, have no energy or just seem to not function well during the day, it is generally because I did not sleep well the night before.

After adjusting for relevant sociodemographic, disease-related, and psychosocial factors, higher DBAS scores remained independently associated with higher ISI scores, explaining an additional 15% of the variance.

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Dysfunctional sleep beliefs are associated with the severity of insomnia in individuals with arthritis. Individuals with arthritis experiencing clinical insomnia report unhelpful beliefs in particular both about the immediate and the long-term negative consequences of insomnia. Given that changes to unhelpful sleep beliefs following CBT-I are associated with improved sleep, it is imperative to address these rigid sleep beliefs in order to improve the effectiveness of behavioural interventions for individuals with arthritis.

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Book Review

The Rheumatology Handbook for Clinicians (3rd edition)

Lori Albert, ed. Brush Education Inc., 2022, 480 pages

Reviewed by Philip A. Baer, MDCM, FRCPC, FACR

While you can look up anything and everything online, a trusted guide to rheumatology diagnosis and therapy with a Canadian lens remains a needed and valuable tool for all healthcare professionals, irrespective of professional field of practice or experience level. Building upon the success of the prior two editions, the latest edition of the Handbook is endorsed by the CRA and remains a pocket-sized guide to our fascinating field. Seven sections cover common presentations of rheumatic diseases, rheumatologic manifestations of other diseases, investigative testing in rheumatology, therapeutics, rheumatologic emergencies, physical examination, and joint injection and aspiration techniques. The latter section, with its clear photos and emphasis on joint landmarks, will appeal to anyone who remains comfortable with performing joint procedures without imaging guidance.

The authors are a who's who of Canadian rheumatology leaders. All but one is an academic physician: the sole exception being Dr. Michael Blackmore, a community rheumatologist in Toronto, who wrote a comprehensive summary of rheumatologic manifestations of HIV disease.

Close to half the book appropriately covers the approach to diagnosis and the rheumatology physical examination. As we all know, the patient history is by far the most important aspect to get right, and 90% of the time, we have homed in on the correct diagnosis before examining the patient. Physical examination is divided into the screening musculoskeletal (MSK) examination and the detailed examination of specific joints, all well illustrated and of great value to non-rheumatologists in particular. The third largest section covers diagnostic testing and should be required reading in all primary care training programs, as this subject engenders the greatest handwringing among practicing rheumatologists bombarded with referrals for weakly positive RF and ANA tests, often ordered inappropriately.

COVID-19 is covered, and other updated sections include new therapeutics, and emerging conditions such as immune-mediated adverse effects of cancer immunotherapy.

All chapters feature bulleted lists of key points, tables of relevant information, and clear diagrams illustrating such things as classification criteria, patterns of joint involvement, and organ manifestations of different syndromes.

Whether you keep the handbook in your pocket (for those still wearing a traditional white lab coat), next to your computer on your desk, or on your bookshelf, I know you will find it to be an excellent resource for yourself, your trainees, the arthritis health professionals you work with, and particularly your non-rheumatologist colleagues in primary care.

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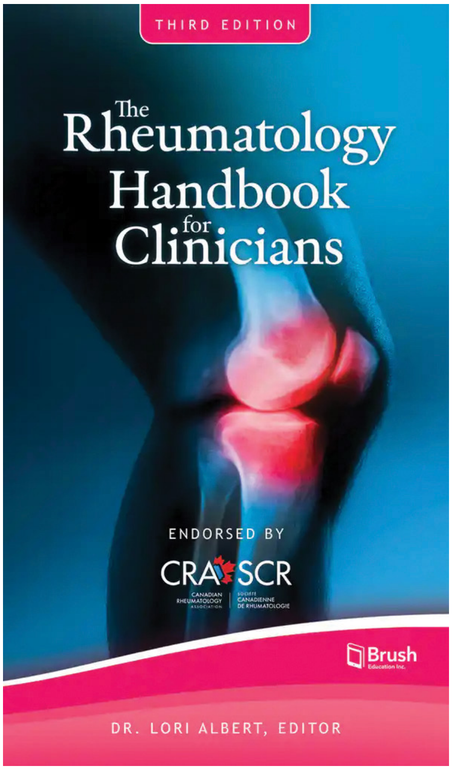

Visit *https://utpdistribution.com/9781550599039/rheumatolgy-handbook-for-clinicians/* to order a copy of the book. Use the code **CRA20** at checkout to receive a 20% discount off the purchase price.

The ebook is also available from all major ebook retailers, including Kindle, Kobo, and Apple Books.

Can We Individualize the Prevention of Hydroxychloroquine-induced Retinopathy?

By Ruud H.J. Verstegen, MD, PhD; and Deborah M. Levy, MD, MS, FRCPC

Patient Case:

A 15-year-old female presents with a two-month history of joint pain and fatigue. Over the past two weeks, she developed a malar rash and, on examination, has a painless palatal ulcer, mild bifrontal alopecia and two swollen joints. Investigations demonstrate lymphopenia, mild anemia and hypocomplementemia. She is anti-nuclear antibody (ANA) positive (high titre) and positive for anti-Sm antibodies. The remainder of her investigations are negative, and a diagnosis of systemic lupus erythematosus (SLE) is made. Hydroxychloroquine (HCQ) is initiated at the first visit following a discussion of possible adverse effects including retinal toxicity. The patient and her caregiver want to know what should be done to prevent retinopathy, given that she may require this medication for many years, if not decades.

Introduction

HCQ, originally used for the treatment and prophylaxis of malaria, has been used in SLE since the early 1950s because of its excellent safety profile and multiple benefits including improved disease control, survival and decreased damage accrual. Long-term HCQ maintenance has been standard of care since the landmark study by The Canadian Hydroxychloroquine Study group demonstrated an increased risk of disease flare after HCQ discontinuation.[1]

Retinopathy

HCQ has a favourable safety profile with gastrointestinal symptoms including decreased appetite, nausea, abdominal pain, and diarrhea commonly cited.[2] Retinopathy following prolonged treatment with chloroquine and hydroxychloroquine was described in 1959 and 1967, respectively.[3,4] It was initially thought to occur rarely, but more recently a prevalence of 7.5% by more sensitive techniques such as spectral-domain optical coherence imaging (SD-OCT) was observed.[5]

HCQ retinopathy is irreversible and specific treatment is currently lacking. Also, severe toxicity at diagnosis can further progress for at least three years after treatment discontinuation, whereas those with early and moderate toxicity generally have no progression.[6] Therefore, annual SD-OCT screening should start five years after treatment initiation, or earlier in the presence of additional risk factors.[7]

Prevention of Hydroxychloroquine-induced Retinopathy

The identification of risk factors has helped to develop strategies for prevention. Melles and Marmor showed that the risk of HCQ retinopathy is associated with higher HCQ doses (>5.0 mg/kg/day [actual body weight]), prolonged treatment duration (>10 years), cumulative HCQ dose, chronic kidney disease (estimated glomerular filtration rate [eGFR] <60 mL/min per 1.73 m^2) and concomitant treatment with tamoxifen.[5] Based on these data, the current recommendations are to use a HCQ dose of 5 mg/kg actual body weight per day (no absolute daily maximum).[7,8] At this dose, the risk of HCQ retinopathy is <2% within the first 10 years of treatment.[5] Compared to prior guidelines that recommended a dose of 6.5 mg/kg ideal body weight per day (maximum 400 mg/day), the new dosing regimen results in lower drug exposure in patients with a low-normal BMI, which may decrease treatment efficacy. In contrast, patients with a BMI >25 will have a relatively higher HCQ exposure than before, which has been shown to result in increased HCQ blood concentrations,[9] and thus may increase toxicity. Besides these general dosing recommendations, there is no clear guidance on HCQ dosing for patients with concurrent renal disease and those treated with tamoxifen.[8]

Precision Therapeutics

Therapeutic drug monitoring (TDM) and pharmacogenetic testing (PGx) may allow for treatment individualization and reduce risks for adverse drug reactions, while optimizing treatment efficacy. TDM is the practice where drug concentration measurements in serum or blood are performed to guide pharmacotherapeutic management, whereas PGx guides treatment decisions by identifying targeted genetic variants that are associated with specific clinical outcomes.

Although HCQ concentrations have been studied for at least 30 years, this test has not seen widespread clinical implementation. There is a large variability in the HCQ blood concentrations achieved for a specific dose,[10] which in part can be explained by (partial) non-adherence in combination with the long half-life (i.e., 30-60 days). Garg et al. recently published a meta-analysis of 17 studies that have explored the optimal HCQ blood concentration in SLE.[11] They found a strong association between low HCQ blood concentrations and non-adherence. In addition, among 1,223 individuals, those with HCQ blood concentrations ≥ 750 ng/mL had a 58% lower risk of active disease, as well as a Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) score that was 3.2 points lower.[11]

In 2020, Petri et al. published their work on the association between HCQ blood concentrations and the development of retinopathy in SLE.[12] Of 537 patients, 23 developed retinopathy (4.3%). Looking at those who had developed retinopathy, more than half had a HCQ blood concentration in the highest tertile (mean >1,177 ng/mL or maximum >1,753 ng/mL). Unfortunately, this study did not relate blood concentration to the time of HCQ administration (i.e., peak, trough).

Although the available studies provide an important basis to further explore the relationship between HCQ dosing, drug disposition, clinical efficacy, and retinopathy risk, there is significant overlap between the HCQ blood concentrations found in patients with and without a favourable outcome, making it difficult to establish a target drug concentration and interpret individual HCQ blood concentrations. In addition, these results cannot be applied to the pediatric population as data are absent in children (i.e., <12 years old), and very limited in adolescents (12-18 years old).

The individual variation in pharmacokinetics as well as an individual sensitivity to develop HCQ retinopathy may be genetically determined. As of yet, pharmacogenomic studies involving this topic are limited, but variants in CYP2D6, CYP2C8, CYP3A4 and CYP3A5 may contribute to individual pharmacokinetic differences and the risk for adverse drug reactions.[13, 14] In addition, one variant in ABCA4 may be protective of HCQ retinopathy.[15]

Conclusion

Hydroxychloroquine is a hallmark SLE treatment that is usually well tolerated. However, irreversible HCQ retinopathy is an important adverse drug reaction that requires optimal efforts at prevention. Recent dosing recommendations may decrease the rate of retinopathy in some patients, but also impact treatment efficacy. TDM and PGx are promising approaches to individualize HCQ treatment in the future; however, currently, insufficient data exist to guide clinical decision making, and prospective studies to demonstrate their role are needed.

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Bright New Ideas to Help People with Arthritis: Arthritis Society Selects Inaugural Ideator Awards Recipients

Winners of the inaugural Arthritis Society Ideator Awards. From left to right: Michelle Laflamme and Alex Fuentes of Emovi; Matthew Rosato of PROVA Innovations; Lianna Genovese of Guided Hands; and Dr. Linda Li of OPERAS.

Pitches were made, the judges deliberated, and four Canadian innovators were honoured at the Arthritis Society's inaugural Arthritis Ideator Awards in April.

The $50,000 grant awarded to each winner will help them bring to life their solutions for fighting the fire of arthritis.

OPERAS was selected as the winner of the Olga Munari Arthritis Ideator Award. It's an app-based program that empowers active self-care for people with rheumatoid arthritis, capturing information on the go, and providing trends on symptoms, disease activity and treatments.

"With OPERAS, people with arthritis can monitor their disease, keep track of medications, create action plans, and collect and display physical activity data through an integrated physical activity tracker. It gives a detailed picture to help users lead healthier, pain-free lives," says creator Dr. Linda Li.

Part of the grant will be used to get the word out about the app (please tell your patients about it) and to expand it to people with osteoarthritis.

"Arthritis is a huge challenge looking for bold solutions and we want to support bright minds as they create those solutions," says Trish Barbato, President and CEO of the Arthritis Society. "We are embracing innovation like never before, because we believe it is key to changing the lives of the six million Canadians living with arthritis."

The other recipients of Arthritis Society Ideator Awards were:

KneeKG: A dynamic tool, developed by Michelle Laflamme and Alex Fuentes, for diagnosing knee osteoarthritis by examining biomechanical markers while the knee is in motion, enabling custom treatment plans.

PROVA Innovations: "Smart" in-soles, developed by Matthew Rosato, that aid in gait rehabilitation for people with early- and mid-stage knee and hip osteoarthritis.

Guided Hands: An assistive device, developed by Lianna Genovese, that guides hand movements to enable people with limited hand mobility to write, draw and access technology.

For more information about the winning innovations the Arthritis Society is investing in, visit arthritis.ca/ideatorprogram.

Canadian Heroes in Rheumatology: Mary Pack

By Kam Shojania, MD, FRCPC

Mary Pack's first exposure to arthritis was when she worked as a homeschool teacher in British Columbia (BC) in the 1940s. She taught children who were too disabled to go to school, and many of her students had long-term joint damage due to juvenile arthritis. Mary's mother also had severe arthritis. She was moved by the suffering of people with arthritis and, in 1944, began a 5-year advocacy mission for research into the cause and treatment of arthritis. She was determined to help her students and all people with arthritis.

Using her considerable charisma and intelligence, she pulled together a dedicated group of physicians, allied healthcare providers and patients to lobby the government for support. She was the founder of the Canadian Arthritis and Rheumatism Society's (CARS — now the Arthritis Society) first Division in 1948 in BC, and was a key fundraiser and organizer of the Vancouver Arthritis Centre (built in 1969 and renamed the Mary Pack Arthritis Centre in 1994). In 1949, the BC Ministry of Health provided CARS a $25,000 grant to deliver services to people with arthritis in BC. Physiotherapists were hired and equipment was purchased for mobile units to bring care to people with arthritis at home. Mary helped institute a mobile service where rheumatologists and occupational therapists would drive or fly to distant communities to provide care. By the end of 1973, the Division had 65 professional staff. Mary's legacy lives on as the Mary Pack Arthritis Program continues to provide specialized services for people with arthritis in Vancouver, Victoria, Penticton, Cranbrook and 38 small towns across British Columbia. The program also hosts quaternary clinics for rare rheumatic diseases, combined clinics and a young adult transition clinic.

In 1974, Mary Pack published "Never Surrender," a passionate story of the birth and development of the Canadian Arthritis and Rheumatism Society, ending with the construction of our unique Arthritis Centre in Vancouver. Typically for Mary, the profits from the sale of this book were invested back into arthritis research.

A tribute to Mary Pack was written by Harold S. Robinson, Head of Rheumatology, in the 1970s:

> *"This edifice she did build so well moved on toward the third millennium, never completely constant, always demanding renewal and re-dedication of purpose; buffeted by the winds of change in people, governments and educational institutions; unchanging however, in its commitment to people afflicted with rheumatic disease."*
>
> — HSR, 1994

Mary's handprints can be seen in the concrete foundation of her building. Mary truly has left her mark on arthritis care in BC and in Canada. She is a rheumatology hero.

Kam Shojania, MD, FRCPC
Medical Director, Mary Pack Arthritis Program
Head, Division of Rheumatology, Vancouver General Hospital
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Patient Perspective: Kelsey Chomistek

At age 15, I started feeling sore and began limping each morning. As a competitive dancer who trained seven days a week, I initially dismissed the pain and fatigue. I thought I was twisting my ankles, and that my busy schedule was making me tired. My dance instructors said my technique was declining and that I was growing disinterested — despite arriving early before each class to practice. They also put me on a high-protein diet to gain weight.

At Alberta Children's Hospital, I learned why I was struggling: I was diagnosed with rheumatoid factor positive polyarticular juvenile idiopathic arthritis.

It was incredibly challenging to be given this diagnosis as a teenager. I spent the first day of every school year getting an infusion in the medical day unit. I was often too exhausted to attend social events, I was always late for school, and the side effects of my medications made me sick on the weekends. I continued to compete, managing my arthritis symptoms by taping my ankles, using ice and heat packs, taking breaks in class, reducing my dance schedule, and starting medications (prednisone, naproxen, methotrexate, and etanercept).

One year after my diagnosis, my dance studio notified me by email that I could no longer be a member of the studio if I was unable to meet their requirements. As a dancer since age four, I was devastated. I felt like I had lost a piece of my identity and felt suddenly isolated from my peers. I was able to graduate high school with distinction despite a significant number of absences due to medical appointments, and I started my undergraduate degree in health sciences. My degree became my next challenge, as I tried to navigate a rigorous program and an uncontrolled disease. During my second year, I had a synovectomy of my right wrist due to persistent inflammation and pain. I vividly remember the professor who stated that I would have to take a 0 on my midterm because my surgery was scheduled for the same day as my exam. I recall crying in the library as I tried to write notes to study for my final exams two weeks post-operatively. I did poorly on my exams that year, and my grades continued to decline, as I struggled to complete the following semester with a wrist that was taking longer than anticipated to heal. I was told I could either transfer out of my program or risk being kicked out of university due to being placed on academic probation.

This was the second experience where I felt like my arthritis had taken something from me — my lifelong dream of becoming a physician. I reluctantly transferred programs, and during the summer of my third year, I had a synovectomy of my left ankle less than 24 hours after writing my Medical College Admission Test (MCAT).

Following my undergraduate degree, I started a Master of Science in Medical Sciences, working with Dr. Heinrike Schmeling and Dr. Cheryl Barnabe, supervisory committee, and team at the Alberta Children's Hospital to develop a self-management program for adolescents with juvenile arthritis. This project was important to me because I wanted to make the transition to living with a chronic illness easier for patients and families. I wanted patients to have the skills required to manage their disease and to learn to advocate for themselves to minimize the challenges that I had faced. As I continued my degree, I slowly lost my ability to walk, as I wore down the cartilage in my left ankle and eventually needed a knee scooter to mobilize due to the pain. Losing my ability to walk remains one of the hardest experiences that I have had to face since my diagnosis. As a previously healthy and active individual, I simply never imagined that I would need to decide between an ankle replacement or ankle fusion and have to live with the consequences of my decision. I opted for a total left ankle replacement, and at age 23, I learned how to walk again for the second time. I used the time recovering from my surgery to submit my medical school applications. In 2020, I received a different kind of email. I was accepted into medical school at the University of Calgary.

Now at age 27, I have spent 13 years living with inflamed joints, pain, stiffness, limited range of motion, and fatigue. My subtype has been treatment-resistant and has resulted in erosive changes and irreversible joint damage. My disease has remained poorly controlled during my medical training, and it continues to be challenging as I pursue my career and learn how to navigate balancing my health, countless appointments, career, and personal responsibilities. The hardest part of living with a chronic illness is that it is an invisible disease. It is difficult for people to truly

Update from the Canadian Academy of Sport and Exercise Medicine

Choosing Wisely: Pediatric Sport and Exercise Medicine Recommendations

By Kristin Houghton, MD, MSc, FRCPC, Dip Sports Med

Choosing Wisely Canada (CWC) is the national voice for reducing unnecessary tests and treatments in Canada. A small working group (Laura Purcell, Erika Persson, Kristin Houghton) created by the Canadian Academy of Sport and Exercise Medicine (CASEM) developed a list of pediatric-specific sport and exercise medicine recommendations based on existing research, experience and common practice patterns. These recommendations identify tests and treatments commonly used in pediatric musculoskeletal assessments which are not supported by evidence and could expose patients to harm. Pediatric rheumatologists frequently see children with non-inflammatory musculoskeletal pain and are encouraged to adopt these CWC recommendations as part of routine practice. The list includes imaging recommendations for Osgood Schlatter's disease, shoulder and knee injuries, back pain, scoliosis, spondylolysis, distal radial buckle fractures, minor head injury/concussion, and management of chronic pain syndromes. This list launched on April 12, 2022 on the Choosing Wisely and CASEM websites.[1,2] (*choosingwiselycanada.org/recommendation/sport-and-exercise-medicine-for-steve/#pediatric-sport-and-exercise-medicine*)

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Patient Perspective: Kelsey Chomistek

continued from previous page

understand the symptoms I am experiencing when I look like an otherwise healthy young adult. It is also difficult to reconcile the feeling that who I am as an individual isn't being accurately portrayed due to my physical limitations and fatigue. I became involved in the arthritis community because I wanted to raise awareness, to show others what it really means to live with a chronic illness, and to share my experience with families to make this diagnosis easier to manage. I am co-founder of the Teen Arthritis & Autoinflammatory Group (TAG), and in partnership with Cassie and Friends Society, we have expanded TAG across Canada to provide peer support for adolescents diagnosed with pediatric rheumatic diseases.

I am currently in my last year of medical school and one of my teenaged patients had also lost their ability to walk. On the last day of my rotation, they were able to bend their knees without pain for the first time. For the first time since my diagnosis, I cried because arthritis had given me back something even more meaningful in life — the opportunity to truly understand what my patients are going through and help them realize that they are not alone.

Kelsey Chomistek, MSc
Medical Student
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Dr. Dafna Gladman – *Women Who Lead Honoree*

Congratulations to Dafna Gladman on being honoured by The National Psoriasis Foundation at their Commit to Cure Gala in June 2022, as one of three exceptional women recognized for their contributions to the community impacted by psoriasis and psoriatic arthritis.

Dr. Gladman is Professor of Medicine at the University of Toronto, and Senior Scientist at the Krembil Research Institute and Schroeder Arthritis Institute. She is Deputy Director of the Centre for Prognosis Studies in The Rheumatic Diseases; Director, Psoriatic Arthritis Program, University Health Network; and co-Director of the University of Toronto Lupus Clinic. Dr. Gladman's research focuses on psoriatic arthritis (PsA) and systemic lupus erythematosus, with emphasis on database development, prognosis studies, genetic markers, assessment instruments, and quality of life measures. The Toronto PsA Clinic was established in 1978 and is the largest PsA longitudinal cohort in the world. Dr. Gladman's laboratory research program involves genetic and biomarker studies of PsA, making this a truly translational research program.

Dr. Gladman has over 900 peer-reviewed publications, 141 chapters and invited publications and over 1,250 published abstracts. Dr. Gladman established the International Psoriasis and Arthritis Research Team (IPART) and is Past-President of the international Group for Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA), and a Co-Principal Investigator with the SpondyloARthritis Research Consortium of Canada (SPARCC).

Dr. Gladman has received numerous awards including the Verna Wright Prize for outstanding contribution to the field of psoriatic arthritis, the Carol Nachman Prize for outstanding research activities in the field of rheumatology, and the American College of Rheumatology Clinician Investigator Award. Dr. Gladman is a Master of the American College of Rheumatology and the Canadian Rheumatology Association, and she has been elected to the Canadian Academy of Science.

Dr. Gladman has served on the National Psoriasis Foundation (NPF) Medical Board twice, and is a member of the NPF Task Force on COVID-19. She has frequently served as an NPF grant reviewer. Dr. Gladman has 2 children, 11 grandchildren and a great-grandson.

CRA Master Awards

Newly created in 2019, the CRA Master designation is one of the highest honours bestowed by the Canadian Rheumatology Association, honouring outstanding contributions to the field of rheumatology through clinical care, education, research and leadership over an entire career. The following are the 2022 CRA Masters awardees:

Dr. David Cabral

CRA Master

David Cabral is a Pediatric Rheumatologist and Clinical Professor at BC Children's Hospital (BCCH) and the University of British Columbia (UBC). He joined Dr. Ross Petty's Vancouver team from Australia in 1991. He cofounded the Young Adult Rheumatic Disease (YARD) "transition" clinic in 1992. He was Division Head from 2004-2021. He has wide research interests and has participated in, or helped establish, a number of research registries. For the past 10 years he has been the Principal Investigator for the Pediatric Vasculitis initiative (PedVas) for which he has established a patient registry, biobank and international network of investigators. In 2012, he helped establish a basic science research laboratory for pediatric rheumatology within the BCCH Research Institute. He was the recipient of the Ross Petty/Arthritis Society Research Chair in Pediatric Rheumatology at UBC in 2015.

Dr. Rayfel Schneider

CRA Master

Dr. Schneider has been Program Director and Head of the Division of Paediatric Rheumatology at the Hospital for Sick Children and the University of Toronto, and most recently Vice-Chair (Education) of the Department of Paediatrics. Under his leadership the training program established a substantial international footprint. He has made important contributions to the care of patients with systemic juvenile idiopathic arthritis (JIA), with studies of prognosis and the development of international clinical trials and treatment guidelines. He has served on the American College of Rheumatology (ACR) Special Committee on Pediatric Rheumatology, as Vice-Chair of the Canadian Paediatric Rheumatology Association, was a founding member of the AMIGO Mentorship Program, and was a member of the Advisory Committee of the Pediatric Rheumatology Collaborative Study Group (PRCSG).

Dr. Rachel Shupak

CRA Master

On receiving this designation, Dr. Shupak writes: "I am deeply honoured to receive the CRA Master's Award for 2022. I have dedicated my academic career as a clinician-educator at St. Michael's Hospital, University of Toronto, to the care of complex patients with inflammatory multisystem diseases and to educating medical students, residents, rheumatology residents and allied health professionals. The Advanced Clinician Practitioner in Arthritis Care (ACPAC) program promotes inter-professional models of care with the aim to close the widening gap between the rising prevalence of arthritis and the inequity of delivery of arthritis care in Canada. I thank my outstanding colleagues for their unwavering support and collaboration that fostered the success of this program."

AWARDS, APPOINTMENTS, AND ACCOLADES

The *CRAJ* would like to recognize the contributions of its readers to the medical field and their local communities. To have any such awards, appointments, or accolades announced in an upcoming issue, please send recipient names, pertinent details, and a brief account of these honours to *JyotiP@sta.ca*. Picture submissions are greatly encouraged.

Arthritis Health Professions Association (AHPA) 2022 Award Winners

Chandra Farrer – *Extraordinary Service Award*

This award recognizes the contributions an AHPA member has made in advancing the mission, vision, and goals of our organization. This year's awardee is Chandra Farrer, in recognition of her extraordinary contributions as the Advocacy Co-Chair for the Advanced Clinician Practitioner in Arthritis Care (ACPAC) Special Interest Group (SIG) and for her role as Co-Chair of the Ontario Rheumatology Association's Northern Ontario Committee.

Chandra, as co-chair of these committees, articulates a clear and consistent vision to support the work of their innovative agendas. Chandra holds a Master of Science in Quality Improvement and Patient Safety but, more importantly, she demonstrates a professional mastery of this knowledge in quality improvement initiatives. She is organized, purposeful and thoughtful. She is a natural leader and is well respected by her peers. Chandra has dedicated many volunteer hours to her advocacy roles. This work supports the vision of the AHPA of improving the lives of people living with arthritis.

Chandra Farrer is an advanced practice physiotherapist who completed her ACPAC training in 2008, and has been working for 14 years in rheumatology. She completed her Master's in Quality Improvement and Patient Safety in 2017 at the University of Toronto. Her quality improvement projects include evaluation of rheumatology models of care, referral management, electronic patient record utilization and optimization, and improving communication for patient safety. She holds a clinical lecturer status in the Department of Physical Therapy and is a facilitator at the Centre for Quality Improvement and Patient Safety (C-QuIPS) at the University of Toronto. Chandra is co-chair of the Northern Subcommittee of the Ontario Rheumatology Association, with Dr. Sahil Koppikar, advocating for a model of care to improve access to rheumatologic care in Northern Ontario.

Sue MacQueen – *Lifetime Achievement Award*

This award is given to an individual who has demonstrated excellence through such characteristics as mentorship, initiative, quality innovation, leadership, enthusiasm, and ongoing commitment in rheumatology.

This year's awardee is Sue MacQueen, in recognition of her leadership, enthusiasm, and ongoing commitment to arthritis care. Sue is an arthritis care ambassador, an industry veteran, and has been a key contributor to an endless list of achievements: in administration with AHPA; in extended-role practitioner research and pediatric guideline development; clinical practice and education with the Arthritis Society; and as a subject matter expert within her community and the larger rheumatology community, ultimately benefiting many people with arthritis.

Sue graduated from the University of Western Ontario in 1980 with a BScPT and worked at Grand River Hospital in Kitchener as a staff physiotherapist until 1988, when she started working with the Arthritis Society's Arthritis Rehabilitation and Education Program (AREP) in Kitchener, Ontario. She has been active in the assessment and management of people living with arthritis, and has developed and presented educational programs for people with different types of arthritis and for healthcare professionals who wish to enhance their competency in arthritis care. In 2009, she completed the Advanced Clinician Practitioner in Arthritis Care (ACPAC) program through the University of Toronto and St Michael's Hospital. She provided ACPAC support in the Pediatric Rheumatology Clinic at the Children's Hospital in London and for local physicians and rheumatologists in Guelph and Kitchener-Waterloo from 2009-2021.

Sue has been a member of the AHPA for over 33 years and served as President of the organization from 2018-2020, during which time she was focused on the development of a strategic plan and promoting collaboration with the CRA and the Ontario Rheumatology Association (ORA). She was awarded the AHPA Extraordinary Service Award in 2021 and the AHPA Lifetime Achievement Award in 2022. This year, Sue was also awarded the Leadership and Advocacy Award from the Ontario Physiotherapy Association. Sue recently retired from AREP after 33 years

Julie Herrington – *AHPA Clinical Innovation Award*

This award was created to recognize AHPA members who have designed and implemented an innovative clinical project or related initiative that benefits the lives of Canadians living with arthritis. This award showcases clinical initiatives including those that assess, treat, educate, or otherwise support people living with arthritis in new and innovative ways. This year's recipient is Julie Herrington for her project entitled: "ACPAC Therapist Virtual Coaching of Young Adults as They Transition into Adult Rheumatology Care: An Adaptation of Care Due to the Covid-19 Pandemic."

Julie Herrington is an ACPAC-trained physiotherapist working with the Pediatric and Young Adult Rheumatology teams at McMaster Hospital in Hamilton, Ontario. The team environment at this centre has created opportunities for her to innovate and develop programs that support adolescents and young adults during their health care transition. The transition team supporting and developing this clinical innovation at McMaster Hospital includes CRA members Dr. Michelle Batthish (pediatric rheumatologist) and Dr. Mark Matsos (adult rheumatologist).

Susan Bartlett – *Carolyn Thomas Award*

This award is given to the first author of the best scientific abstract, and was established in honour of Carolyn Thomas, a founding member of the AHPA who supported research.

The recipient of the 2022 AHPA Carolyn Thomas Award is Susan Bartlett, PhD, for her work entitled "Riding Multiple Waves of Uncertainty: The Impact of COVID-19 on RA Patients in the Canadian Early Arthritis Cohort (CATCH)." Dr. Bartlett is a clinical psychologist and Professor of Medicine at McGill University in the Divisions of Clinical Epidemiology, Rheumatology, and Respiratory Medicine. She is co-founder of the McGill Centre for Health Measurement, a senior researcher with the Research Institute of the McGill University Health Centre, Arthritis Research Canada, and the Canadian Early Arthritis Cohort. Her studies focus on patient-centred research, measurement development, treatment adherence, and psychosocial factors that impact treatment outcomes. She is Chair of the AHPA Research Committee, the Association of Rheumatology Professionals Board, and the National Institute of Health (NIH) Patient-Reported Outcomes Measurement Information System (PROMIS) Board of Directors.

Karine Toupin-April – *Barbara Hanes Memorial Award*

Given to the primary author of the best abstract submitted by an occupational therapist, this award was established by the AHPA in honour of Barbara Hanes, who worked as an Occupational Therapy Director at the Arthritis Society, Ontario Division. She was active in teaching and a contributing author to the rheumatology textbook "Physical Therapy in Arthritis."

The recipient of the 2022 AHPA Barbara Hanes Memorial Award is Karine Toupin-April, PhD, for her abstract entitled "Acceptability and Usability of the JIA Option Map, a Web-Based Patient Decision Aid for Pain Management in Juvenile Idiopathic Arthritis." Dr. Toupin-April is an Associate Professor in the School of Rehabilitation Sciences and with the Department of Pediatrics at the University of Ottawa, and is affiliated with the Children's Hospital of Eastern Ontario Research Institute. Her research in pediatric and adult rheumatology includes developing patient-reported outcome measurements (PROMs), clinical practice guidelines, patient decision support interventions and self-management tools.

Viviane Ta – *Best Trainee Abstract Award*

This award is presented for the best trainee abstract submitted to and presented at the CRA/AHPA conference in each of three separate categories.

The recipient of the 2022 AHPA Trainee Award is Viviane Ta for her abstract entitled "Beliefs and Concerns about RA Medications May Predict Influenza Vaccine Hesitancy: Results from the Canadian Early Arthritis Cohort (CATCH)." Viviane is a PhD student in the Counselling Psychology program at McGill University. Her current research examines associations between medication beliefs, vaccination coverage, and treatment outcomes in early rheumatoid arthritis. She is passionate about improving the quality of life of adults with RA. Viviane is a member of the AHPA, and an Arthritis Research Canada and CATCH trainee.

Pr RINVOQ®
upadacitinib

Once-daily oral JAK-inhibitor therapy*

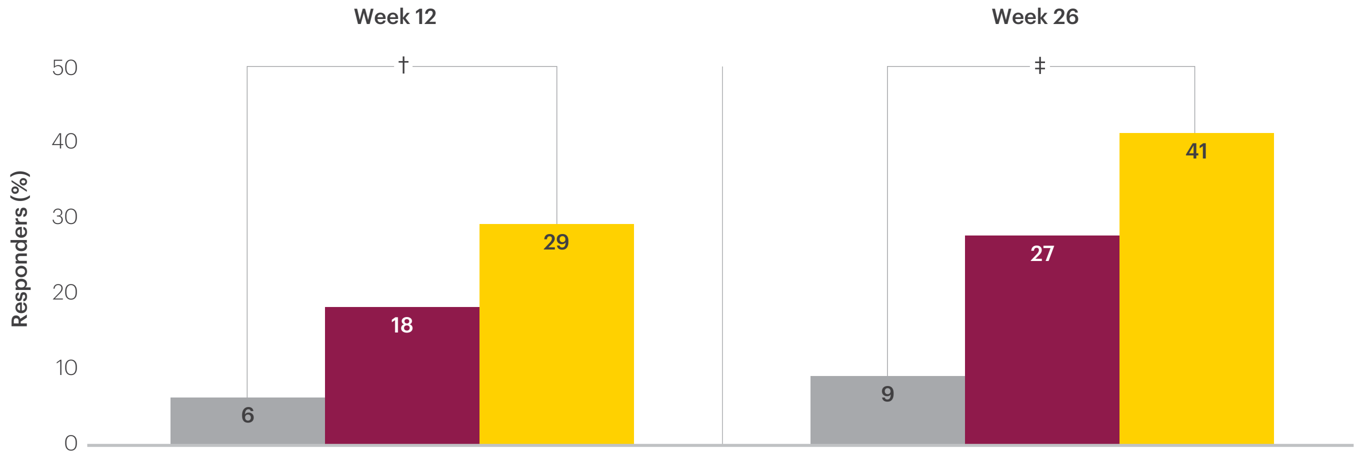
INDICATED IN RA and PsA NEW

RA

Clinical remission (DAS28-CRP <2.6; secondary endpoint) shown in the SELECT-COMPARE trial at Weeks 12 and 26 in MTX-IR patients*

From Week 14, non-responding patients on RINVOQ could be rescued to adalimumab, and non-responding patients on adalimumab or placebo could be rescued to RINVOQ in a blinded manner.

Clinical remission (DAS28-CRP <2.6)



Adapted from the Product Monograph

▬ Placebo + MTX
▬ Adalimumab 40 mg + MTX
▬ RINVOQ 15 mg + MTX

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* No conclusions can be drawn regarding the superiority of upadacitinib + MTX vs. adalimumab + MTX.
† *p*≤0.001 RINVOQ vs. placebo comparison; included in multiplicity adjustment for overall type I error control.
‡ *p*≤0.001 RINVOQ vs. placebo comparison; not included in multiplicity adjustment for overall type I error control.

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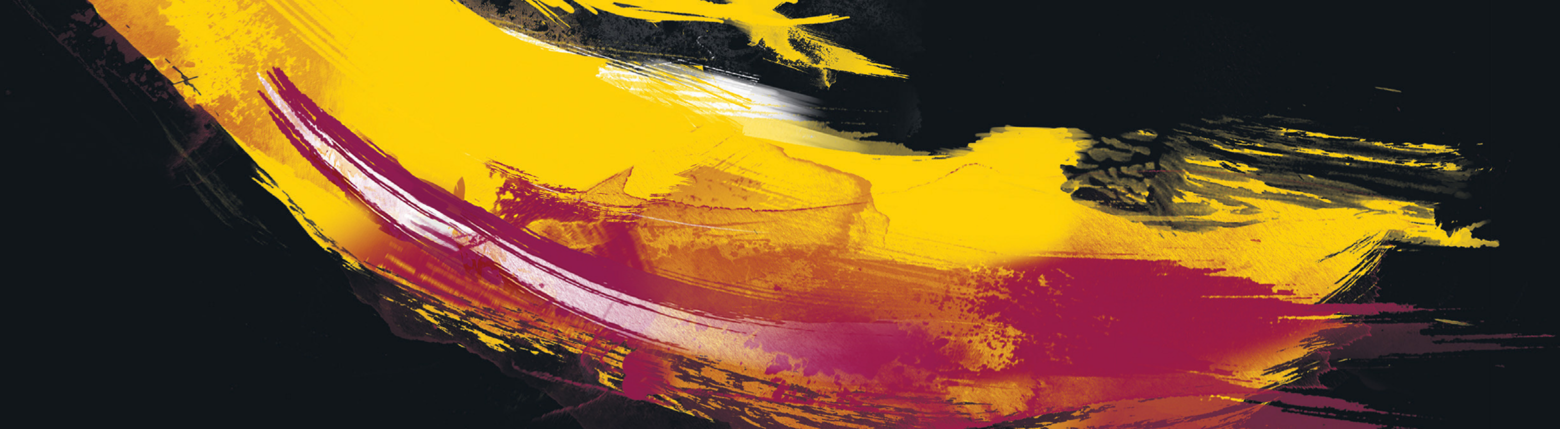

Reach for RINVOQ

RINVOQ (upadacitinib) is indicated for the treatment of:

- adults with moderately to severely active rheumatoid arthritis (RA) who have had an inadequate response or intolerance to MTX. RINVOQ may be used as monotherapy or in combination with MTX or other nonbiologic DMARDs.
- adults with active psoriatic arthritis (PsA) who have had an inadequate response or intolerance to MTX or other DMARDs. RINVOQ can be used as monotherapy or in combination with MTX.

Clinical use not discussed elsewhere in the piece

RINVOQ should not be used in combination with other Janus kinase (JAK) inhibitors, biologic DMARDs, or with potent immunosuppressants such as azathioprine and cyclosporine.

Caution should be used when treating geriatric patients with RINVOQ.

Most serious warnings and precautions

Serious infections: Patients treated with RINVOQ are at increased risk for developing serious infections that may lead to hospitalization or death. Most patients who developed these infections were taking concomitant immunosuppressants such as methotrexate or corticosteroids. If a serious infection develops, interrupt RINVOQ until the infection is controlled. Reported infections include active tuberculosis (TB), which may present with pulmonary or extrapulmonary disease; invasive fungal infections, including cryptococcosis and pneumocystosis; and bacterial, viral (including herpes zoster), and other infections due to opportunistic pathogens. Test patients for latent TB before RINVOQ use and during therapy. Consider treatment for latent infection prior to RINVOQ use. Do not initiate treatment in patients with active infections including chronic or localized infections. Carefully consider the risks and benefits of treatment prior to initiating therapy in patients with chronic or recurrent infections. Closely monitor patients for signs and symptoms of infection during and after treatment, including the possible development of TB in patients who tested negative for latent infection prior to initiating therapy.

Malignancies: Lymphoma and other malignancies have been observed in patients treated with RINVOQ.

Thrombosis: Thrombosis, including deep venous thrombosis, pulmonary embolism, and arterial thrombosis, has occurred in patients treated with JAK inhibitors, including RINVOQ, for inflammatory conditions. Consider the risks and benefits prior to treating patients who may be at increased risk. Patients with symptoms of thrombosis should discontinue RINVOQ treatment and should be promptly evaluated and treated appropriately.

Other relevant warnings and precautions

- Increases in lipid parameters, including total, low-density lipoprotein, and high-density lipoprotein cholesterol
- Gastrointestinal perforations
- Hematologic events
- Liver enzyme elevation
- Patients with active hepatitis B or C infection
- Patients with severe hepatic impairment
- Concomitant use with other potent immunosuppressants, biologic DMARDs, or other JAK inhibitors
- Immunizations
- Viral reactivation, including herpes (e.g., herpes zoster) and hepatitis B
- Malignancies
- Increases in creatine phosphokinase
- Monitoring and laboratory tests
- Pregnant women
- Women of reproductive potential
- Breast-feeding
- Geriatrics (≥65 years of age)
- Asian patients

For more information

Please consult the Product Monograph at rinvoq.ca/pm for important information relating to adverse reactions, drug interactions, and dosing information which have not been discussed in this piece. The Product Monograph is also available by calling us at 1-888-704-8271.

* Please see the Product Monograph for additional dosing and administration information.

JAK: Janus kinase; MTX: methotrexate; DMARD: disease-modifying antirheumatic drug; DAS28-CRP: 28-joint disease activity score using C-reactive protein; IR: inadequate responder.

Reference: RINVOQ Product Monograph. AbbVie Canada.

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