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Spotlight on:

Rheumatology in the Here and Now

Editorial

Connecting the Dots: Thinking Fast, the Pavlovian Reflex, and Delays in Diagnosing Axial Spondyloarthropathy

What's the CRA Doing For You?

New Planetary Health Task Force

CIORA

CIORA Research Projects of the Past, Present, and Future

Top Six Things

Top Takeaways from the 12th International Conference on Reproduction, Pregnancy and Rheumatic Diseases

Joint Communiqué

Patient Perspective: Embracing Resilience

Canadian Heroes in Rheumatology: Dr. Claire Bombardier

CRUS Update: The Next Chapter in Canadian Rheumatology Ultrasound

CPD for the Busy Rheumatologist: Mini-Practice Audit Model (mPAM): Overcoming the "Fear" of Chart Audits

Awards, Appointments, and Accolades

Celebrating Drs. May Choi, Jordi Pardo Pardo, Alan Rosenberg, and Murray Urowitz

Regional News

Updates from Ontario

Northern (High)lights

A Thousand Faces of Inequity

Long COVID: What We Know and the Way Forward

Arthritis Society Canada Announces Funding for Stars Career Development Awards in 2024

Rising Star: Dr. Arielle Mendel

Rheumatology Residency Training During the COVID-19 Pandemic

Finding Rheum to Grow During the Pandemic

Training in the Time of COVID-19

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* Alberta, Saskatchewan, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario (EAP), Prince Edward Island, and Non-Insured Health Benefits (NIHB). Please refer to the respective listings for coverage information and restrictions.

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EDITORIAL

Connecting the Dots: Thinking Fast, the Pavlovian Reflex, and Delays in Diagnosing Axial Spondyloarthropathy

By Philip A. Baer, MDCM, FRCPC, FACR

Axial spondyloarthropathy (AxSpA) is unfortunately characterized by delays in diagnosis estimated to still be in the range of 5-9 years, despite decades of fruitful work developing classification and diagnostic criteria, and the widespread availability of HLA-B27 testing and magnetic resonance imaging (MRI). While studies indicate that the prevalence of AxSpA is close to that of rheumatoid arthritis (RA), I still note that I can count my RA patients by the hundreds, but my AxSpA patients only by the tens. Where are the missing patients? Perhaps their symptoms are so mild they escape medical attention, or are handled by self-management, or these patients look to chiropractors, physiotherapists, physiatrists, osteopaths, and other practitioners for relief.

Meanwhile, I note a recent trend of referrals arriving to evaluate patients over age 50 regarding incidental radiographic findings of "sacroiliitis" with the query being whether they might have AxSpA.

Two such patients were seen recently on consecutive days. One was a 67-year-old woman with diabetes and a lumbar spine X-ray report stating "sacroiliac (SI) joint sclerosis and spurring are seen bilaterally. Radiologist opinion: Significant degenerative changes around the SI joints bilaterally. Ankylosing spondylitis should be considered or sacroiliitis." When I saw her, she had a history of numerous work-related back injuries, with chronic mechanical pain and absolutely no evidence of AxSpA. For good measure, a negative human leukocyte antigen B27 (HLA-B27) test accompanied the referral.

The next day, I saw a 68-year-old man with referral for "recently increasing back pain and stiffness. X-rays show DISH (diffuse idiopathic skeletal hyperostosis). Could they have ankylosing spondylitis (AS)?" No HLA-B27 test provided this time, and the X-ray report indicated "DISH, lumbar degenerative disc disease (DDD), and mild SI joint degenerative spurring and sclerosis. No specific evidence of AS." The patient stated he was prediabetic, though glucose and A1c levels were all normal. The history indicated that, for the last two years, but not before, he has noted a very mild chronic tightness in the mid and lower back, worse after exertion, such as gardening and bending over, for about a day or so. He did not require any medication or other treatment for it. Examination showed mildly restricted spinal motion. Final diagnosis: DISH.

There seems to be a Pavlovian reflex active here, where the mention of sacroiliitis on an X-ray report triggers an automatic rheumatology referral. The presence of the word "degenerative" immediately before sacroiliitis" does not appear to negate this reflex. This is all very similar to receiving referrals for what is clearly osteoarthritis (OA), accompanied by lab work demonstrating another unfortunate rheumatology reflex, with anti-nuclear antibodies (ANA), rheumatoid factor (RF), and sometimes extractable nuclear antigen (ENA), anti-double-stranded DNA antibodies (anti-dsDNA) and complement studies all having been inappropriately ordered. We can speculate on the root causes of these reflexes: lack of education on musculoskeletal (MSK) disorders throughout medical training, practitioner burnout, and the fee-for-service treadmill of primary care are common thoughts.

In the end, we have a problem of resource mismatch and misallocation. As a rheumatologist, my doors are open to AxSpA patients for whom we have a panoply of advanced therapies ("The right patient getting the right treatment at the right time"). At the same time, instead, my referrals are now commonly older patients with mechanical low back pain and degenerative findings in the SI joints ("The wrong patient seeing the wrong consultant," while taking up a scarce rheumatology consult slot). While relatively a trivial issue in an individual practice, this is the same issue that results in emergency departments being backed up with patients requiring admission, while up to 20% of in-patients in Canadian hospitals do not require acute care but are waiting for alternate levels of care.

Conditioned reflexes and "thinking fast" are fundamental principles of psychology and behavioural economics, respectively. "Thinking, Fast and Slow" is a superb book by Daniel Kahneman covering his Nobel Prize-winning work with Amos Tversky, which explains human behaviour in many common situations. Thinking fast relies on heuristics and generally means

Continued on page 5

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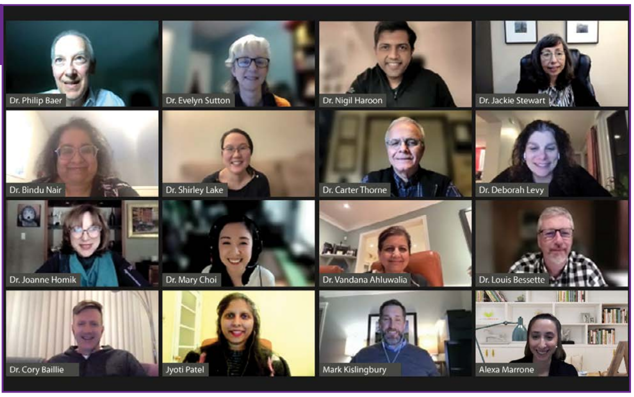

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CIORA Research Projects of the Past, Present, and Future

The Canadian Initiative for Outcomes in Rheumatology cAre (CIORA) hosted a webinar featuring six CIORA projects from the Past, Present, and Future. Investigators discussed their findings, next steps, and how their research impacted rheumatology care and their careers. The webinar is available on demand in the CRA Portal.

Dr. Laëtitia Michou presented her 2014 CIORA Grant: Measuring the Impact of an Innovative Educational Intervention in Inflammatory Arthritis: A Natural Evolution of the *Centre Hospitalier Universitaire (CHU) de Québec's* multidisciplinary Information Session.

This study aimed to determine whether patients with active rheumatoid arthritis (RA), either starting on or changing biological or targeted synthetic disease-modifying antirheumatic drugs (b- or tsDMARDs), demonstrate better self-management safety skills three months after receiving an educational intervention compared to usual care.

Between October 2015 and October 2018, this open-label, randomized-controlled trial included 107 RA patients who were on treatment or in whom b- or tsDMARD therapy was changed. Group 1 received initial additional intervention with an educational DVD and one teleconference. Group 2 received usual care and was offered the intervention after three months. At each visit, the patients completed the BioSecure questionnaire measuring self-care safety skills, a behavioural intention questionnaire, and the Beliefs about Medicines Questionnaire (BMQ).

No significant difference was observed in the Biosecure score at three months. After pooling the first three-months data in Group 1 and the last three-months data in Group 2, the mean score of the BioSecure questionnaire increased to 7.10±0.92 after the group received the educational intervention ($p<0.0001$). The rate of appropriate behavioural intention increased from 76% at baseline to 85% at six months. There was no change in the BMQ.

Conclusion:

An educational DVD followed by a teleconference seems to improve the self-care safety skills of RA patients in practical situations.

Connecting the Dots: Thinking Fast, the Pavlovian Reflex, and Delays in Diagnosing Axial Spondyloarthropathy

(continued from page 3)

not thinking at all, leading to reflex responses such as sacroiliitis = rheumatology referral. The conditioned reflex described by Pavlov in his dogs operates very similarly, such that a ringing bell can trigger salivation in anticipation of being fed, in the absence of any food. Pavlov won the Nobel Prize in Medicine in 1904 for his work. Interestingly, it is controversial whether Pavlov really used a bell in his experiments. Per Wikipedia, the bell imagery is attributed to one of Pavlov's rivals and contemporaries, the Russian neurologist Vladimir Bechterev (or Bechterew). Completing the circle, Bechterev was one of the first clinicians to describe ankylosing spondylitis in 1893[1], which formerly carried the eponym Bechterew's disease. Surely, he could never have imagined how much difficulty we would still be experiencing, over a century later, in diagnosing this condition and the spectrum of AxSpA disorders.

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New Planetary Health Task Force

The Canadian Rheumatology Association (CRA) is working to address the environmental concerns highlighted by its members with a new Planetary Health Task Force. In the past year, members and their communities have been affected by floods and the record-breaking wildfire season.

Chaired by CRA Vice-President Dr. Stephanie Tom, the CRA Planetary Health Task Force members are Drs. Sasha Bernatsky, Claire Barber, Beth Hazel, Philip Baer, Fergus To, and Molly Dushnicky.

The Task Force's mandate is to support members to incorporate planetary health principles into their practices. Research has shown that the healthcare sector has a comparable and likely even higher carbon footprint than the aviation industry in Canada and globally.

"Given the impact of environment on human health, we have a natural role to play as health advocates," says Dr. Tom, citing examples of Yellowknife Hospital's evacuation due to wildfires and patients' interstitial lung disease (ILD) exacerbations this past summer. "These environmental changes really challenge our healthcare systems' resilience and our ability as physicians to provide longitudinal patient care."

The Task Force will build on the work done by the Ontario Rheumatology Association (ORA) which created the world's first rheumatology sustainability toolkit, (available at *ontariorheum.ca/planetary-health-rheumatology-toolkit-now-available*), which is an easy-to-read implementation guide to greening rheumatology practice spaces, including clinics and infusion centres. There is already a separate toolkit for those who work in hospitals and long-term care settings.

The CRA aims to develop an updated bilingual toolkit to be shared more widely among the national rheumatology community for feedback and ideas.

"Ultimately, planetary health in medicine is about the triple bottom line," says Dr. Tom. "Ensuring quality patient care, concern for the environment, and cost savings to the system and even individual clinics."

Some examples of addressing our healthcare carbon footprint include adopting Choosing Wisely principles, deprescribing, streamlining personal protective equipment (PPE) use, sharps containers and polyvinyl chloride (PVC) plastics recycling, and incorporating relevant patient risk factors during assessments.

The Planetary Health Task Force looks forward to engaging and supporting members in greening their workspaces. Updates on the work of the Task Force will be shared as they become available. If you have any questions, feedback, or ideas, please email *info@rheum.ca*.

NORTHERN (HIGH)LIGHTS

A Thousand Faces of Inequity

By Stephanie Keeling, MD, MSc, FRCPC; Antonio Avina-Zubieta, MD, MSc, PhD, FRCPC; Sasha Bernatsky, MD, PhD; Ann Clarke, MD; Heather Coates; Paul R. Fortin, MD, MPH, FRCPC; Lourdes Gonzalez Arreola; Cheryl Koehn; Alexandra Legge, MD, MSc, FRCPC; Kelly Lendvoy; Leanne Mielczarek; Christine Peschken, MD, MSc, FRCPC; Zahi Touma, MD, PhD, FACP, FACR; and Evelyne Vinet, MD, PhD

Canadians striving to live well with systemic lupus erythematosus (SLE) often struggle to access potentially life-changing medications, depending on where they live and medication insurance coverage. Despite advocacy attempts by rheumatologists and the lupus community, change is slow, causing huge negative impacts on the healthcare system, economy, and the lives of those affected.

SLE affects 1 in 2,000 Canadians with greater female predilection (1 in 1,000)[1] and affects more Black, Indigenous, and people of colour (BIPOC) compared to white people. Many national and international lupus registries have reported on the need to urgently reduce disease activity to avoid long-term damage while acknowledging the need to limit the total steroid burden due to associated damage.[2,3]

Health Canada's approval of Benlysta™ (belimumab) in 2011 was heralded as a game-changer, especially for those who had exhausted all SLE treatments. Unfortunately, a negative recommendation from the Canadian Agency for Drugs and Technologies in Health (CADTH) for SLE in 2011 and 2018 (re-submission) meant that for a long time, public formularies across Canada did not list this drug except as an exceptional drug in Quebec and for a time in Alberta.

Hope was rekindled with the 2021 Health Canada approval of Saphnelo™ (anifrolumab), which received CADTH approval and in recent months was listed on the public formulary in Alberta, Quebec and Ontario as well as on the Non-insured Health Benefits for First Nations and Inuit (NIHB). Moreover, a new listing of belimumab for the indication of lupus nephritis is currently under review in many provinces after receiving a positive CADTH review. Other than Quebec, however, belimumab is not available to Canadians with SLE under public coverage unless Glaxo Smith Kline pursues a re-submission to CADTH for a third time and obtains a positive review.

Optimism grows that public coverage and, therefore, access to these biologics will increase across Canada in the coming year; however, this may also serve to emphasize the disparity amongst those who will still be ineligible. A 2021 survey on access to healthcare and pharmaceuticals during the pandemic confirmed that 21% of Canadian adults do not have any private prescription insurance to cover medication costs, with higher percentages in seniors, immigrants, and racialized persons.[4] Many people with lupus fall into this category. Moreover, differing coverage criteria between provinces mean that when someone lucky enough to be on a lupus biologic in Quebec moves to British Columbia, they may lose medication coverage and disease control. The short- and long-term implications for patients are significant.

Beyond lack of public coverage, other reasons for disparities in coverage include no compassionate or bridging programs, limited co-pay by pharmaceutical companies (maximum 50%), and tight criteria by private insurers and public formularies, which limit drug eligibility. The latter reflects the ongoing complacency that payers have regarding steroids in lupus patients — that, contrary to recently published guidelines, lower doses remain acceptable long term, a situation that would never be accepted by rheumatologists for inflammatory arthritis patients. Even standard-of-care lupus medications such as mycophenolate mofetil have restricted access in particular provinces (e.g. Alberta) which exacerbates this inequity.

Advocacy at all levels is needed to raise awareness of disparities in health outcomes between BIPOC and white people and address the inequity in access to new medications for Canadians with lupus. Lupus Canada took this issue to Parliament Hill in December 2023, emphasizing the need for equitable drug access for lupus patients.

> *"Lupus is an under-recognized chronic autoimmune disease that requires attention from the Canadian government, as well as key decision-makers. Publicly funded lupus-specific treatments will save lives, generate long-term health care savings and ultimately increase the quality of lives of those who are managing this debilitating disease."*
>
> – Leanne Mielczarek, Executive Director, Lupus Canada

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NORTHERN (HIGH)LIGHTS

Long COVID: What We Know and the Way Forward

By Mark Bonta, MD, FRCPC

What exactly is Long COVID or the Post-COVID condition? Not only have we failed to standardize the name that describes the constellation of symptoms that develop or linger after a COVID-19 infection, but diagnostic criteria vary worldwide.[1] In Canada, we describe the “Post-COVID-19 condition”, with 18 symptoms in patients who may have had COVID-19 (formal testing is not required).[2] Regardless of the name, similarities include fatigue, multisystem physical symptoms, mental health symptoms, and sleep impairment.[3,4]

Interestingly, this complex of disabling physical and mental symptoms has existed for decades prior to COVID-19. From Post-Ebola Syndrome (West Africa)[5] to Chronic Fatigue Syndrome (North America), these conditions describe people with Medically Unexplained Physical Symptoms (MUPS). Central sensitization, the purported mechanism responsible for chronic pain, has gained traction as a likely etiology, in part, for MUPS.[6] Somatic Symptom Disorder, used by psychiatrists, is an umbrella term for physical symptoms that impair function in other facets of life. Somatic Symptom Disorders include conditions with known pathophysiology, while also including MUPS patients.[7] Simple scoring systems can be used to quantify the degree of impairment experienced by the patient and allow one to monitor their somatic symptom burden over time, useful for trending longitudinal changes. The Symptom Severity Scale (SSS)[8] used in fibromyalgia research is an example.

A 2018 survey of Canadian rheumatologists identified that half of them would potentially refuse consultations for fibromyalgia.[9] The terms "difficult patients" and "heartsink" have been coined and have become synonymous with MUPS. Studies have highlighted a gender bias in treating pain. The list goes on, and all the while we wait with bated breath for a Long COVID clinic to open and accept all our referrals, solving our problems. We need to set aside our biases and preferences and recognize that we do have tools to help these patients.

Collectively, we must appreciate the impact that MUPS has across multiple domains, such as societal burden, strain on the healthcare system, economic impact, and family strain, and start helping the 1.5 million Canadians (at last count) living with MUPS,[10] instead of shrugging our shoulders and saying, "there’s nothing objectively wrong with you" and referring onwards.

First, we can sit down, listen to our patients, and empathize with them.[11] As we recognize with someone who presents debilitated from acute polyarthritis due to rheumatoid arthritis, our patients with MUPS are also suffering. Empathize with them. Remind them they are not alone, as many other Canadians are experiencing similar symptoms. Wonderful resources (CAN-COV Database, *www.DrRicArseneau.ca*) abound that provide evidence-based interventions, along with a host of patient-specific information resources.

Secondly, we can use our diagnostic acumen to ensure that a medical condition with known pathophysiology is not at play. By trusting our medical judgment and intuition, we can recognize when to shift our questioning to features of central sensitivity syndromes and minimize over-investigating. Moreover, we can modify our history-taking to include features associated with the development of MUPS[12] (i.e., physical trauma, sexual trauma) and screen our patients for mental health conditions which are far more prevalent than in those without MUPS.[13]

Third, we can advocate for our patients to have access to a clinical milieu purposed to suit their needs. Interprofessional management, with close collaboration between experts in both mental and physical health working together instead of in silos, is something that we can all advocate for.

Finally, we can draw on the chronic pain literature to acknowledge the mind-body duality and apply evidence-based strategies to improve physical function and quality of life.[14] Prescribing Cognitive Behavioural Therapy (CBT), mindfulness-based relaxation, diaphragmatic breathing, and psychosocial counselling are evidence-based.[15] Working with our patients and empowering them to take ownership over their symptoms and commit to a longitudinal journey of self-management can go a long way.

In the perpetual evolution of medicine, novel avenues for treatment, healing, and potential cures continually emerge, demanding our unwavering attention. It is incumbent upon us, as physicians, to vigilantly assess these advancements and adapt our approaches accordingly. Such a task requires a collective commitment from us, our patients, and healthcare administrators alike. We must uphold and enrich the sanctity and depth inherent in clinical practice. Through generous listening, we nurture genuine, reciprocal relationships, fostering a shared sense of purpose between clinicians and patients that transcends the confines of standardized guidelines or algorithms.

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Arthritis Society Canada Announces Funding for Stars Career Development Awards in 2024

Arthritis Society Canada announced the recipients of the 6th annual Stars Career Development Awards on January 16th. The Stars Career Development Awards offer robust support for the early career progression of promising researchers in the arthritis community. This program rewards emerging academics with a three-year funding commitment of up to $375,000 from Arthritis Society Canada, matched with an additional three years of funding by the researcher's host institution.

"We are thrilled to recognize and support the outstanding work of researchers dedicated to improving the lives of those people living with arthritis," said Dr. Siân Bevan, Chief Science Officer at Arthritis Society Canada. "The Stars Career Development Awards reflect our ongoing commitment to championing the best and brightest minds and leading ground-breaking research that will make a meaningful impact on the understanding and treatment of this devastating disease."

This year's recipients are:

- Dr. May Choi, University of Calgary —
  Using artificial intelligence to design new blood tests for autoimmune muscle diseases associated with inflammatory arthritis
- Dr. Nikolas Knowles, University of Waterloo —
  Improving early detection and treatment of shoulder osteoarthritis

To learn more about their research projects, visit *arthritis.ca/researchers/competition-results.*

Rising Star: Dr. Arielle Mendel

"IT'S UP TO YOU. . . to become a rheumatologist. . . or get them to us!!!" This mantra was recited after every rheumatology lecture taught by Drs. Andy Thompson, Gina and Sherry Rohekar, Janet Pope, and Nicole Le Riche, during my first semester of medical school more than fourteen years ago. After some weeks of this exercise, I began to feel heaviness and pain in my right arm and hand every evening when I returned home from class. I was sure that my right hand was swollen compared to my left. I could see veins popping out! Convinced that I had rheumatoid arthritis, or worse — fibromyalgia! — I went to an urgent care clinic. Of course, the doctor told me there was nothing wrong with my arm or hand. It took a few more weeks for me to be convinced, but my mysterious arm pain gradually disappeared (I also started carrying my bag on the other shoulder). Believe it or not, I emerged from my medical student syndrome (+/- being brainwashed per the above) SOLD on rheumatology! When I applied to the Canadian Rheumatology Association (CRA) summer studentship, I was over the moon when Dr. Lori Albert had a spot for me in her clinic. With this and each additional passing observership and elective, I became more interested in rheumatology, and, thanks to my PGY1 training at Sunnybrook (and Dr. Shirley Lake), the field of quality and patient safety.

During my rheumatology residency at McGill, I realized that I loved treating severe systemic rheumatic diseases, such as lupus and vasculitis (fortunately, this time, without developing a psychosomatic malar rash or foot drop). I returned to Toronto to do a fellowship in vasculitis and a Masters in Quality Improvement and Patient Safety. I was fortunate to be funded by The Arthritis Society and the *Association des Médecins Rhumatologues du Quebec* for my project to improve timely glucocorticoid tapering in vasculitis. I had truly exceptional vasculitis training with Drs. Christian Pagnoux and Simon Carette, and I am indebted to them for their clinical wisdom and encouragement through my projects.

The first few months of the pandemic marked the end of my fellowship and the start of my assistant professor position at McGill University. The teak furniture I inherited from my parents (z″l) had now travelled with me from Montreal→London→Montreal→ London→ Toronto→ Montreal→ Toronto→ Montreal. I set to work living up to the job description in my McGill faculty appointment letter: clinician in the lupus and vasculitis clinic, quality lead in my division, and . . . scientist. Since then, with immense help from my mentors, I am grateful to have obtained a research salary award from the *Fonds de Recherche Quebec Santé (FRQS)* and start-up funds from CIORA to study the safety and effectiveness of rituximab biosimilars in ANCA-associated vasculitis, along with my outstanding vasculitis colleagues across Canada. I would like to thank my mentors (Drs. Sasha Bernatsky, Évelyne Vinet, Inés Colmegna, Paul Fortin, Christian Pagnoux), my first research role model Dr. Gillian Hawker, and the wonderful rheumatology research stars I look up to from my own "generation" (Drs. Nancy Maltez, May Choi, Sabrina Hoa, Lauren King, Valérie Leclair). Surrounded by my loving family, friends, and mentors, I look forward to helping my patients and collaborating with the incredible clinicians and scientists in my life.

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Rheumatology Residency Training During the COVID-19 Pandemic

By Adam Kovacs-Litman, MD, FRCPC

While coronavirus disease 2019 (COVID-19) hasn't disappeared, we are no longer in the throes of a pandemic. At the time of this writing, there have been more than 4.9 million Canadian cases of COVID-19 and 58,000 deaths. There are still over 5,000 incident weekly cases of COVID-19 across Canada, but this is more manageable compared with the highs of the early pandemic.[1] Travel restrictions, quarantines, isolation, and widespread testing are no longer a major part of our COVID-19 response. With widespread adoption of vaccinations, COVID-19 has become less deadly and something we're more used to living with.[2]

I completed my rheumatology residency at the University of Toronto (U of T) in June 2023. My residency experiences in rheumatology and internal medicine (also at U of T) were marked by the COVID-19 pandemic. My internal medicine residency was punctuated with what felt like mandatory electives in COVID-19 care. I recall the fear and uncertainty among residents in the pre-vaccine pandemic era following the first Canadian case of COVID-19 diagnosed at Sunnybrook Health Sciences Centre.[3] Later, I recall admitting countless patients with COVID-19 on internal medicine call shifts, carefully donning and doffing personal protective equipment. I recall rotating through the Intensive Care Units of Toronto Western and Toronto General Hospitals and becoming used to the routine of proning and un-proning young, intubated patients requiring extracorporeal membrane oxygenation.[4] More selfishly, I recall being frustrated when my away-rheumatology electives were cancelled and many of us were redeployed from elective rotations to fill critical gaps in patient coverage related to resident illness and burnout.

As I began my rheumatology residency, I felt more insulated from the front lines of providing COVID-19 care, but the pandemic continued to affect my training in other ways. One of the concerns I've heard levied is the fear that rheumatologists who trained during the COVID-19 pandemic may lack core rheumatology physical examination skills. While many clinics converted to virtual care, I'm grateful that rheumatology clinics across U of T hospitals maintained predominantly in-person visits across all stages of the pandemic. The pandemic did however necessitate changes in educational design. Virtual teaching sessions over Zoom became the norm, and even major rheumatology conferences such as the Canadian Rheumatology Association Annual Scientific Meeting adopted virtual or hybrid formats. Rheumatology residents increasingly turned to burgeoning and excellent online educational materials such as Dr. Raj Carmona's *rheumtutor.com*, Dr. Andy Thompson's *rheuminfo.com*, Dr. Ahmed Omar's *rheumguide.ca*, and Dr. Lori Albert's *rheumexamatlas.com*, to name a few. While virtual learning is not without limitations, I am of the view that the COVID-19 pandemic catalyzed transformational educational change for the better. Having access to learning-on-demand improved my educational journey and not having to commute for every teaching session bolstered my wellness, which is especially important in light of the high rates of burnout among rheumatology practitioners at all levels.[5,6] As our focus shifts to moving beyond the COVID-19 pandemic, I hope that those involved in educational design recall not just the challenges of the pandemic, but the benefits of incorporating hybrid and virtual teaching on an ongoing basis.

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Finding Rheum to Grow During the Pandemic

By Gemma Cramarossa, BHSc, MD, FRCPC

The COVID-19 pandemic shaped many aspects of my rheumatology training experience. From reduced in-person clinical exposure to virtual academic half-days to the added stress of redeployment, there were many challenges along the way. Despite these obstacles, the faculty in the rheumatology division and my fellow trainees enriched my learning experience and helped me confidently enter rheumatology practice after graduation.

The earlier days of the pandemic were the most chaotic. Every academic hospital in Toronto had different guidelines about virtual versus in-person care. As such, at any given time, trainees based at different hospitals had vastly differing clinic experiences. Many of us worried about having adequate practice with joint injections and the musculoskeletal physical exam, a crucial part of our specialty. In comparison to residents in many other internal medicine subspecialties, this was a unique concern for rheumatology trainees.

When we matched to rheumatology, most of us thought our internal medicine days were behind us, but we were mistaken. With the pandemic came delayed Royal College exams and redeployment to work on the wards caring for admitted COVID-19 patients. We had studied for so long with uncertainty about when and how our Royal College Exams would be administered, and it was a relief to finally write the exam and focus on our rheumatology training. However, the real possibility of redeployment loomed over us as well. Working on the COVID ward itself was a good experience, but with redeployment came lost exposure to rheumatology. What if my only opportunity to aspirate an elbow happened while I was redeployed? What if I missed a rare opportunity to see a new presentation of Adult-Onset Still's Disease? Still, we stepped up to do our part and put our rheumatology skills to use as the team's tocilizumab experts and managers of all steroid tapers.

At the core of the Canadian rheumatology community is a sense of camaraderie. Since our specialty is smaller, cohorts get to know each other well through not only training, but also by attending local, national and international conferences. While many of these opportunities were still offered virtually, the level of engagement was much lower. Socializing within programs and departments was discouraged to prevent the spread of illness. The possibility of becoming ill carried with it potential negative consequences to not only our own health, but that of our colleagues, families, and our vulnerable immunocompromised patients. As trainees, we looked forward to the warmer months when we could organize socially distanced activities like picnics in the park after academic half-days. The first in-person rheumatology department event without masks was our annual Research Day in June 2022, my last month of training. It was comical when staff rheumatologists didn't recognize us without our masks on!

Overall, training during the pandemic taught me how to be more flexible, innovative and resilient. I feel so grateful to have trained with the amazing cohort of rheumatologists who experienced the highs and lows with me.

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Training in the Time of COVID-19

By Gabriel Jeyasingham, MD, FRCPC

The coronavirus 2019 (COVID-19) pandemic was isolating and full of unknowns. As internal medicine residents, my colleagues and I had the unique experience of being thrust into wildfire to manage so-called "COVID-19 wards" in early 2020, before sufficient availability of vaccines. I then found myself in a rheumatology training program at Western University in London, Ontario, from 2020-2022. The training experience is still fresh in my mind.

The pandemic's social impacts are easy to appreciate. I recall an awkward gathering for a graduating resident where all of us mask-ridden residents and faculty posed for a photograph six feet apart. Evening learning events, commonplace in previous years, were shuttered. Having spent most days holed up in clinic or my apartment, I left the city of London mostly unexplored upon graduation.

Some experiences remained intact, through a virtual scope. Academic half days, conferences, and even our inpatient rheumatology consultation service — all virtual. Most appointments in the clinic were conducted over the phone at the start of my rheumatology training. On select occasions, the hospital allowed patients to come to the clinic for severe flares of their disease or if they requested corticosteroid injections. In a specialty where the physical examination is of paramount importance, I had initial concerns about underexposure. Rheumatology training programs across the country had also recently adopted a competency-based medical education (CBME) framework, in which regular direct observation of residents was mandatory. It was difficult to meet this requirement with virtual care at the forefront.

These concerns later resolved as clinics slowly re-opened, but another issue soon became apparent. Patients flooded our schedules, and our workforce dropped off as variants of COVID-19 emerged. Colleagues sick with COVID-19 had to self-isolate, and rotating residents from other specialties were redeployed from our clinics back to the inpatient wards. We were short-staffed. My program preserved my training experience by protecting rheumatology residents from redeployment, but those of us who remained in outpatient clinics faced significant challenges managing patient volumes. After a long rheumatology residency, I took several months' time off to relax before starting my independent practice.

There were some unexpected benefits to the pandemic. Residency during this time was a chance to forge kinship with colleagues and mentors; we were united against a common enemy (or rather, pathogen). This strong collegial network has supported me early in my career as a rheumatologist. Virtual care continues to have its uses, providing needed flexibility in the daily operations of clinical practice. A deep appreciation of the tribulations of residency, forged from first-hand experience, will ground my role as an educator for medical students and residents moving forward.

Despite the pandemic's chaos, I finished residency with sufficient confidence in my clinical acumen and an awareness of gaps in skills or knowledge that could be filled over time. I cannot address all the ways the pandemic influenced my trajectory as a rheumatologist; some of it might still remain in my subconscious. It was, quite simply, a once-in-a-lifetime experience.

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Top Takeaways from the 12th International Conference on Reproduction, Pregnancy and Rheumatic Diseases

By Stephanie Keeling, MD, MSc, FRCPC, on behalf of Neda Amiri, MD, MHSc, FRCPC; Maeve Gamble, MD, FRCPC; Stephanie Garner, MD, FRCPC; Shahin Jamal, MD, MSc, FRCPC; Dharini Mahendira, MD, MScCH, FRCPC; Viktoria Pavlova, MD, FRCPC; Natalia Pittman, MD, MSc, FRCPC; and Jodie Reis, MD, FRCPC

A strong Canadian contingent of rheumatologists attended the 12th International Conference on Reproduction, Pregnancy and Rheumatic Diseases in early September 2023 just steps away from Paddington station and Platform 9¾ in London, England. This collaborative meeting including specialists and allied health professionals provided in-depth and updated information on the health of women in the peripartum period with important reflections on the impact of policy changes on women's health.

We have summarized key takeaways from the important aspects of women's health.

1. Abortion

The impact of overturning Roe vs. Wade (Dobbs Abortion Policy) was shared by American rheumatology colleagues with reports of more live babies, travel for abortion, and increased rate of tubal ligations and salpingectomies. Implications on American practice included re-thinking the safety of prescribing methotrexate and mycophenolate mofetil (MMF) without concomitant contraception. A helpful tool known as the MMF REMS (Risk Evaluation and Mitigation Strategy) was presented providing a possible strategy for MMF use in rheumatology clinics. *(www.mycophenolaterems.com/Resources/Docs/PatientResourceKit.pdf)*

Important questions about how well-informed patients are, based on how much we counsel them around pregnancy and fetal risks when prescribing teratogenic medications, were discussed.

Another unintended consequence of the changing abortion policies could be the future challenge of conducting much-needed medication trials in pregnancy without access to safe and timely legal abortion.

2. Contraception

Studies in the past five years have shown lower contraception use and counselling in rheumatology patients, with a disconnect between what patients and rheumatologists respectively expect in contraception counselling. Reasons include lack of time, discomfort with the subject, limitations in knowledge about contraception and being out of scope of rheumatology practice. Importantly, the lack of data on contraception safety and efficacy in rheumatic disease patients was once again emphasized.

3. Fertility

Studies confirmed that men with rheumatic diseases have similar concerns to women around how their disease impacts sexual and reproductive health. Men with physical limitations were more likely to find their disease affecting their sexual practices. Infertility continued to be an area of concern for patients. We noted that rheumatologists have limited information about infertility treatments — this is an unmet educational need that can help our patients. The potential for tumor necrosis factor (TNF) inhibition to ensure successful pregnancy outcomes in obstetric antiphospholipid antibody syndrome (APS) through the impact on normal placentation and spiral artery remodelling was presented, covering the first 45 patients in the IMPACT study and a case report presenting a successful pregnancy in this context.

4. Guidelines/Medications/Counselling

The new 2023 American College of Rheumatology (ACR)/ European Alliance of Associations for Rheumatology (EULAR) Antiphospholipid Antibody Syndrome classification criteria featuring a weighted point system, expanded domains (macro- and micro-vascular, obstetrical, cardiac valve and hematologic) were presented with certain antiphospholipid antibodies (APLAs) receiving higher points (e.g. persistently positive lupus anticoagulant), demonstrating improved specificity (99%) and strong sensitivity (84%) compared to the 2006 revised

Canadian Contingent from left to right: Shahin Jamal, Maeve Gamble, Dharini Mahendira, Sarah Troster, Neda Amiri, Stephanie Garner, Viktoria Pavlova, Jodie Reis, Stephanie Keeling, and Natalia Pittman.

Sapporo classification criteria. Updates to the British Society for Rheumatology guidelines for prescribing drugs in pregnancy and breastfeeding included changes to the timing of non-steroidal anti-inflammatory drug (NSAID) use, no restrictions on paternal exposures and continued confirmation of the safety of anti-TNFs over other available advanced therapies. Rituximab was recognized as having limited evidence overall but low probability of harm and could be used in breastfeeding, with ongoing questioning of a potential impact on neonatal development limiting a conclusive safety statement. Updated EULAR Points-to-Consider are expected for 2024. The need to talk "early and often" about sexual dysfunction for women and men with rheumatic diseases was emphasized as part of the American College of Rheumatology guidelines (2020).

5. Pediatric Considerations

While vaccinations are globally recognized as effective and important, the issue of live vaccination schedules in infants exposed to biologic disease-modifying antirheumatic drugs (DMARDs) in utero was acknowledged as complex. A suggested approach included assessing which specific bDMARD was used to account for differences in persistence in the infant, structure, timing of pregnancy exposure, specific vaccine(s), and risk of infection. Rotavirus vaccine can be administered to babies who have been exposed to anti-TNF biologics in utero according to ACR February 2023 updated guidelines. Non-live vaccines were felt to be safe with no suggested change in the infant vaccine schedule. Despite increased use in pregnancy, breast-feeding rates were low in anti-TNF exposed mothers even though biologic DMARDs are largely inactivated by digestive enzymes with poor systemic absorption.

6. Disease-Specific Considerations

In patients with systemic lupus erythematosus (SLE) and/or antiphospholipid syndrome, monitoring of complement levels early and throughout pregnancy was recommended due to the association with poor pregnancy outcomes. The administration of ASA 162 mg daily starting at 11-14 weeks gestational age was recommended in women with SLE to reduce the risk of preeclampsia.

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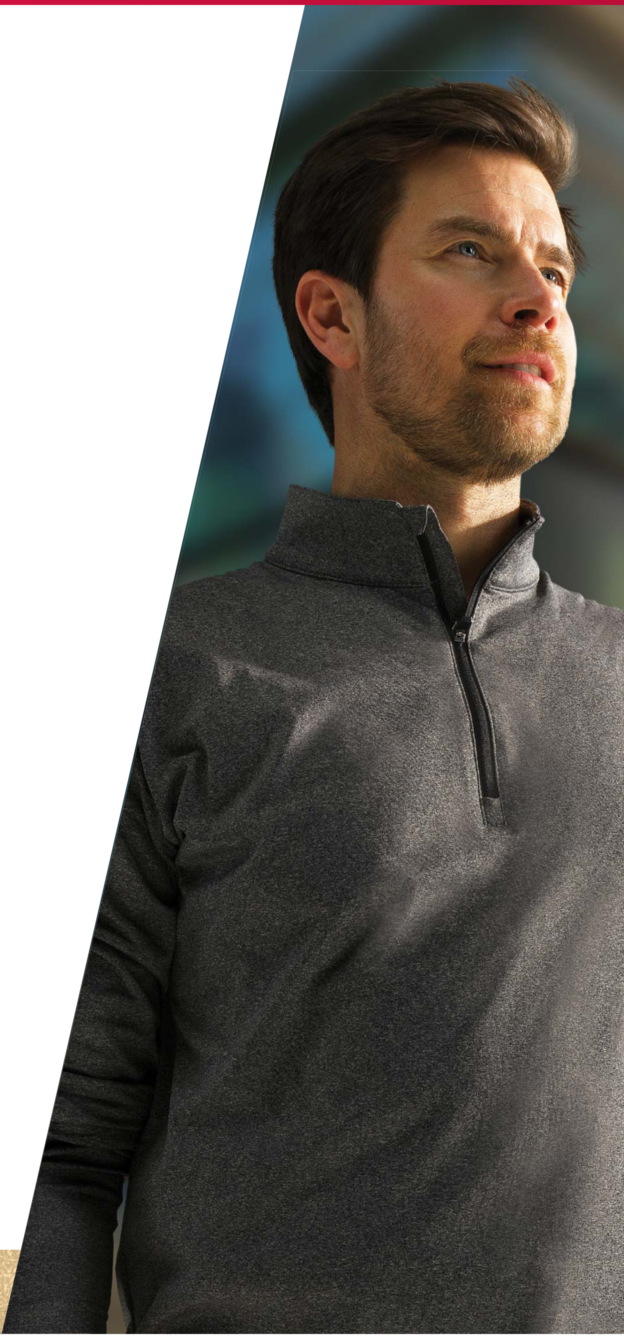

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A Vexing Case of Inflammation

By Jason An, MD, MSc, FRCPC; and Dilan Dissanayake, MD, PhD, FRCPC

Case Presentation

A 78-year-old male was referred to rheumatology for suspected relapsing polychondritis. His past medical history was significant for myelodysplastic syndrome (MDS) confirmed on bone marrow biopsy by hematology.

He first noticed redness, pain, and swelling of the nose and right ear four months prior. He visited numerous walk-in clinics and had not responded to multiple courses of antibiotics. He responded to a short course of steroids, however, the symptoms recurred upon tapering.

There were also numerous other unexplained symptoms in the preceding months. These included recurrent fevers of up to 39^0C, a 15-pound unintentional weight loss, bilateral painful red eyes, mouth dryness, and pain in multiple joints of the hands. He noticed painful bumps in the forearms (Figure 1), and a diffuse rash that did not respond to cortisone creams. A thorough infection work-up was negative.

His physical exam revealed red, warm, swollen, and painful pinnae of both ears with sparing of the lobes (Figure 2). There was painful swelling distributed across six metacarpophalangeal and proximal interphalangeal joints of both hands. There were bright red subcutaneous nodules over the forearms and diffuse maculopapular rash over the torso. Faint inspiratory crackles were audible at both lung bases.

Preliminary investigations revealed pancytopenia with hemoglobin 115 g/L (mean corpuscular volume 114), platelets 163×10^9/L, and leukocytes 4.1×10^9/L. He had elevated C-reactive protein (CRP) of 48 mg/L and erythrocyte sedimentation rate (ESR) of 43 mm/hr, and negative rheumatoid factor, antinuclear antibodies, and anti-neutrophil cytoplasmic antibodies. Biopsy of the subcutaneous nodules revealed leukocytoclastic vasculitis with neutrophilic infiltration.

The multisystem inflammation on a background of pancytopenia and MDS in an elderly male prompted suspicion of VEXAS (vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic) syndrome. Review of previous bone marrow aspirates with the hematopathologist revealed vacuoles within the myeloid cells (Figure 3). Single gene testing was significant for a somatic mutation (p.Met41Leu) in UBA1 at an allele fraction of 73%, confirming the diagnosis of VEXAS.

Introduction

In 2020, the first report of VEXAS syndrome represented a paradigm shift in our understanding of somatically acquired adult-onset systemic inflammatory disorders.[1] The condition is caused by variants in the X-linked UBA1 gene, which encodes one of the main E1 ubiquitin-activating enzymes of the human body. As with our patient, most pathogenic variants are due to missense changes of the amino acid methionine at position 41.

Epidemiology

Exome analysis of approximately 163,000 individuals in an electronic-health-system-based cohort revealed that nearly 1 in 13,000 patients possessed UBA1 variants, with all of these individuals retrospectively found to have features consistent with VEXAS syndrome.[2] The authors noted that this frequency is similar to the estimated prevalence of Behçet disease (1 in 10,000) and higher than other rheumatologic diagnoses such as granulomatosis with polyangiitis (1 in 18,000) and polyarteritis nodosa (1 in 33,000). As an acquired X-linked disease, it is primarily observed in males over the age of 50 years but has also been described in females in rare cases.[2-4]

Clinical Features

A challenge in identifying VEXAS syndrome is the marked heterogeneity in its presentation, which can mimic other rheumatologic conditions, including relapsing polychondritis, Sweet syndrome, polyarteritis nodosa, small vessel vasculitis, rheumatoid arthritis, seronegative spondyloarthritis and Behçet disease.[5,6]

Typical features include constitutional symptoms, such as fever, fatigue, and weight loss. Skin involvement is common and varied, including neutrophilic dermatoses, vasculitis, or nodular lesions. Pulmonary involvement (infiltrates, pleural effusions), ocular involvement (episcleritis, uveitis, scleritis) and/or arthritis/arthralgia can also occur in up to half of patients. A significant proportion of patients also present with nasal or auricular chondritis. Unprovoked arterial or venous thrombosis occurs in approximately a third of patients. Lymphadenopathy can be present in the hilar, mediastinal, cervical, axillary and inguinal areas. Less commonly involved organs are the heart (pericarditis, myocarditis), gastrointestinal tract (abdominal pain, diarrhea, bleeding), kidneys (proteinuria, microscopic hematuria), and nervous system (sensory neuropathy, mononeuritis multiplex).

Figure 1. Painful bumps in the forearms.

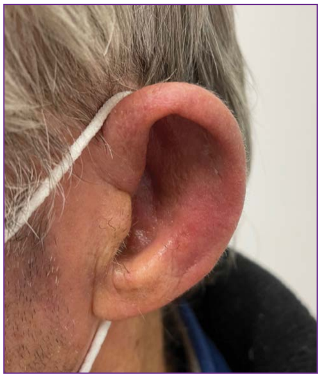

Figure 2. Painful, swollen, pinnae of the ears.

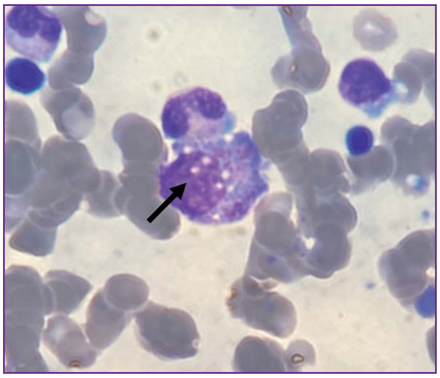

Figure 3. Vacuoles within the myeloid cells.

Bloodwork will commonly show cytopenias, including macrocytic anemia, lymphopenia, monocytopenia and/or thrombocytopenia, with at least 50% of patients also having features of myelodysplastic syndrome, with or without monoclonal gammopathy. ESR and CRP are typically elevated.

Diagnosis

VEXAS should be suspected in elderly males presenting with widespread inflammation in the context of macrocytic anemia and/or thrombocytopenia. Identification of cytoplasmic vacuoles in myeloid and erythroid precursors from bone marrow aspirates of such individuals are highly suggestive of VEXAS syndrome. Definitive diagnosis can be reached through genetic testing for variants in the UBA1 gene.

Therapeutic Approaches

Multidisciplinary management should be tailored to the disease features of the patient. Supportive treatment may include infection prophylaxis/vaccination and thrombosis prophylaxis as indicated. High-dose corticosteroids are often required, although inflammatory flares are common upon tapering. Conventional disease-modifying antirheumatic drugs and inhibitors of interleukin (IL)-1, IL-6, and Janus kinases have been used with varying success, though a large proportion of patients appear to become refractory over time.[7] Cytopenias may be treated with erythropoietin-stimulating agents and/or eltrombopag. The hypomethylating agent, azacytidine, has also showed promise for both cytopenias and inflammation in certain patients.[8,9] Allogeneic hematopoietic stem cell transplantation (HSCT) may be a curative option for patients with severe or treatment-refractory disease, though suitability for transplant can be limited by the age and overall health of the patient, particularly if there has been significant VEXAS-related major organ involvement. Early diagnosis is therefore crucial in order to limit inflammation and allow for the possibility of HSCT before the onset of extensive organ damage.

Back to the Case

The patient was promptly treated with a tapering regimen of prednisone 40mg daily and weekly methotrexate 25 mg subcutaneously as a steroid-sparing agent. He experienced a complete resolution in ear chondritis, and the partial response of arthritis, nodules, and diffuse rash. There were reductions in CRP to 24 mg/L, and ESR to 20 mm/hr. Cell counts remained low. One month later, the inflammatory manifestations recurred following tapering of corticosteroids below 20 mg. Ruxolitinib was considered but ultimately not accessible due to insurance limitations. After discussions with hematology, azacytidine was initiated, which allowed his prednisone to be tapered to 10 mg daily. Six months later, however, his MDS progressed, and he became transfusion-dependent. He presented to the ER with dyspnea and hypoxia and was admitted to intensive care for respiratory failure due to suspected pneumonia. Despite stopping all immunosuppressives, and administering intravenous antibiotics and vasopressors, the patient developed multiorgan failure and died.

Conclusion

VEXAS syndrome can mimic many other rheumatologic diagnoses, and should be considered in older adults with unexplained constitutional symptoms, cytopenias, and multi-system inflammation. Unfortunately, mortality rates remain high with a 5-year survival rate of 63%.[6] Further work is required to develop effective evidence-based treatment algorithms for this new condition.

A complete list of references used in the article is available online at *craj.ca.*

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Patient Perspective: Embracing Resilience

By Proton Rahman, MD

On a typical clinic day, my patients often comment on my health: "How are you doing, Doc? It looks like you're moving better today." Practicing in a relatively small city where there are only a few degrees of separation between you and your patients, there's no hiding the fact that I have arthritis. While I don't want to downplay the pain, immobility, and uncertainty of transient visual loss from panuveitis, there is a silver lining, as it has been a positive experience when interacting with my patients. The shared experience fosters a genuine connection and a more profound understanding of their journey, allowing me to commiserate over ongoing annoyances, such as the stress associated with merging into heavy traffic at selected intersections when you have limited cervical rotation.

On a more serious note, being able to share my university experience and advocate for learners as they navigate their academic terms holds a special significance for me. The greatest challenge I faced in living with spondylitis was as a student when my arthritis first appeared, and I was trying to juggle the stress and rigours of academia. I faced multiple setbacks in university and struggled to get back on track. I was rejected from medical schools on two occasions, only to be accepted on my third attempt but barred from applying for scholarships due to my chronic condition. So now, if the opportunity arises, I openly share these facts with my younger patients, as they find it reassuring that, although their illness can significantly impact their academic performance, it is still possible to overcome this challenge.

I firmly believe that all educational institutions, including medical schools, should enroll students that reflect our communities in terms of chronic illnesses and physical disabilities. To achieve this, administrators must be willing to make accommodations by looking beyond the traditional performance metrics and considering the students' medical journey. Rigidly adhering to a set cut-off for LCAT, MCAT, or GMAT is disadvantaging those who have faced the greatest health adversity, as their scores are more likely to be impacted by their illness.

So, I am reaching out to my colleagues (not just in rheumatology), urging them to consider supporting students with chronic illnesses so they attain their academic goals. To make this possible, you may need to push your institutions to be more flexible concerning their accommodation policies. This can be done fairly and transparently but will require time and effort.

Those with chronic illness/disability are continuously navigating multiple concurrent health challenges; it is like living through a life of exams — once you pass one hurdle, there is another! If adequately supported, I am confident that those with significant health challenges can succeed in their academic endeavours. So, timely support during their most challenging time can help bridge the gap caused by their chronic illness.

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Canadian Heroes in Rheumatology: Dr. Claire Bombardier

Dr. Claire Bombardier has enjoyed a very robust and fruitful career spanning fifty years. As Chief Resident at the Royal Victoria Hospital in Montreal in the early 1970s, she was a young 20-year-old woman in a predominantly male-led occupation. She had to demonstrate strength and perseverance. Upon completing medical school, she entered a new program at Stanford called the Clinical Scholar Program to study medical economics. She arrived in Toronto to find there wasn't a clinical epidemiology program there, just one being developed at McMaster (Hamilton). It was then that she decided she wanted to learn more about research design to connect to her economics background. There weren't any role models in the field, no females, and no clinical epidemiologists. Dr. Bombardier wanted to change this and became deeply committed to the mentorship of young researchers, clinical fellows, and students. She had a significant impact in mentoring trainees, especially women researchers and diverse high-quality personnel who now lead innovative education, practice, policy, and research programs in Canada and internationally, and who have achieved their own international success as clinician-scientists, researchers, and policy/decision makers.

Dr. Bombardier continues to prove her life-long commitment to ensuring that people with lived experience co-create health system innovation. Time and time again, it can be demonstrated that her work has had measurable impacts at the local, national, and international levels. Dr. Bombardier's achievements have been highlighted in previous volumes of the *Journal of the Canadian Rheumatology Association (CRAJ)*, including an interview in 2009 when she received the Canadian Rheumatology Association Distinguished Investigator Award (2009; 19(1):11-12) and in 2016 to announce her American College of Rheumatology Distinguished Clinician Scholar Award (2016; 26(4):5).

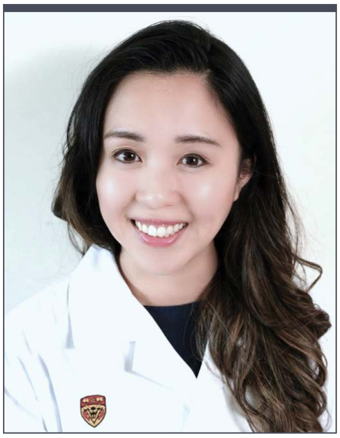
When asked about the highlights of her career, Dr. Bombardier has identified several, including the opportunity to work in developing countries through the World Bank Health Initiative and through the Rockefeller Foundation International Clinical Epidemiology Network (INCLEN). This led to her role in the creation of the clinical epidemiology program at the University of Toronto and her contributions to the development of the Institute for Work and Health. Dr. Bombardier has also accepted many academic and research leadership roles including a 13-year stint as the Division Director of Rheumatology at the University of Toronto, and 7 years as the Co-Scientific Director of the Canadian Arthritis Network, a National Centre of Excellence [2007-2014]. Dr. Bombardier has helped to position Canada as a leader in epidemiology, measurement, research synthesis, guideline development and dissemination, and knowledge transfer and exchange with a focus on arthritis and musculoskeletal diseases.

Most recently, Dr. Bombardier leads the Ontario Best Practices Research Initiative (OBRI) since 2005. The OBRI is a collaborative data platform that follows patients in routine care along their clinical path. This Ontario cohort has grown to include 86 rheumatologists and more than 4,000 patients and explores the safety and effectiveness of treatments for patients living with rheumatoid arthritis and psoriatic arthritis. Dr. Bombardier credits the success of these and many other initiatives to the contributions of cross-sector and interdisciplinary collaborators and partners.

Dr. Bombardier has been exceptionally prolific in her scientific writing. To cite an example of this, in preparation for her Tier I Canada Research Chair renewal, a bibliographic analysis of her publications for the previous five years compared her to local peers at the University of Toronto and to peers in Canada, the U.S. and Europe/Australia and concluded: "Dr. Bombardier continues to produce a sizable publication output and citation impact. In a sub-analysis of only investigator-driven papers (defined as first and last authored papers), Dr. Bombardier's papers yielded a much higher proportion of Top 10%

Continued on page 22

AWARDS, APPOINTMENTS, AND ACCOLADES



Dr. May Choi – *Named one of Avenue Calgary's Top 40 Under 40*

Dr. May Choi was listed as a 2023 Top 40 Under 40 by Calgary Avenue Magazine. This annual award recognizes the best and brightest community builders, leaders, and artists under the age of 40, who are excelling in their careers, giving back to the community, and raising the profile of Calgary. Dr. Choi was named Top 40 Under 40 because of her dedication to helping patients with autoimmune rheumatic diseases and her research achievements. She feels very grateful for this recognition and thanks her mentors, Drs. Marvin Fritzler, Ann Clarke, and Karen Costenbader, and her family for their guidance and support, as well as her late father, Dr. Vincent Choi, for inspiring her to follow in his footsteps.

Dr. Jordi Pardo Pardo – *Appointed Interim Chair of the Cochrane Governing Board*

Dr. Jordi Pardo Pardo has been appointed as Interim Chair of the Cochrane Governing Board at the last meeting in September 2023. Cochrane is an international non-profit network, which sets the gold standard for synthesizing health research findings to facilitate evidence-based health care. Cochrane Reviews, found in the Cochrane Library (*www.cochranelibrary.com*) are up to date, follow a rigorous scientific methodology, and are free from commercial conflicts of interest.

Jordi is the contact person for methodological support to the Canadian Rheumatology Association guidelines.

Canadian Heroes in Rheumatology: Dr. Claire Bombardier

(continued from page 21)

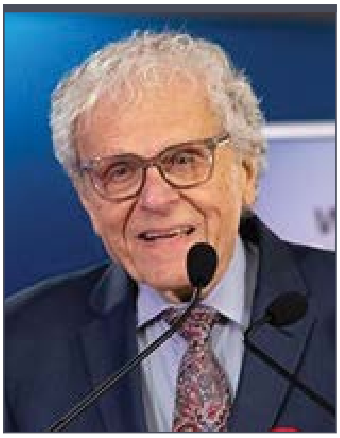
cited papers than her peers from University of Toronto, Canada, and the U.S., and was statistically similar to her European peers."

To date, Dr. Bombardier has published more than 400 highly cited papers, which include group consensus papers, independent investigator papers on measurement and methods, randomized controlled trials in high-impact journals, as well as the highly quoted report on "The Impact of Arthritis in Canada" (available at *www.arthritisalliance.ca/en/*). Most recently, her primary publications explore the real-world experiences of people living with inflammatory arthritis in usual care. Dr. Bombardier is ranked 19th in Canada and 567th among the top female scientists in the world by *Research.com* (as of 2023).

At the 2019 Arthritis Society Trailblazing Women in Arthritis gala, where Dr. Bombardier was presented with the inaugural award, she spoke of the important work ahead for professionals and those hoping to enter the fields of medicine, research, education, and policy: "I am so proud of how many powerful and influential women there are in our field now. But it's important to remember that we can never begin to think that those trails are now open and available to all. More women will need our help in the future. And, even more than this, individuals from other communities will need our help in overcoming and removing barriers. Canadians from diverse and under-represented groups, refugees, and newcomers, and those living with evident and non-evident disabilities need our support in accessing opportunities for training and practice. We must move to inclusion, accessibility, and equity by design; inclusive practices drive innovation and benefit everyone."

Dr. Alan Rosenberg – *Elected Fellow of the Canadian Academy of Health Sciences (CAHS)*

Dr. Alan Rosenberg, a pediatric rheumatologist at the University of Saskatchewan, has been elected a Fellow of the Canadian Academy of Health Sciences (CAHS). CAHS Fellows, representing a broad array of healthcare and health research disciplines, identify and evaluate health-related challenges and recommend strategic, actionable solutions. As a CAHS Fellow, Dr. Rosenberg will have the privilege of collaborating with esteemed colleagues to address major societal health concerns. He will contribute to highlighting child health and pediatric rheumatology issues, help conceptualize action plans, and ensure that recommended solutions emanating from CAHS are effectively implemented.



Dr. Murray Urowitz – *University Health Network (UHN) Global Impact Award*

Dr. Murray Urowitz made immense contributions to our understanding of the complex and life-threatening chronic autoimmune disease systemic lupus erythematosus (SLE), including how patients are treated and the way the disease is managed, resulting in patients living longer with a better quality of life. He discovered the increased cardiovascular mortality and steroid-related long-term consequences in patients with SLE.

Dr. Urowitz founded Canada's first Lupus Clinic in 1970 at the former Wellesley Hospital, relocating it to Toronto Western Hospital in the mid-1990s, where it still operates. He also led development of the first and largest lupus database in North America. As stated by Dr. Nigil Haroon, "His work has put Toronto and UHN on the map, and his contributions to research and education will continue to serve patients around the world through excellent and appropriate care."

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.

CRUS Update: The Next Chapter in Canadian Rheumatology Ultrasound

By Maria Bagovich, MD, FRCPC; Abe Chaiton, MD, FRCPC; and Lihi Eder, MD, PhD

We are thrilled to update you all on the recent activities of the Canadian Rheumatology Ultrasound Society (CRUS). Having the opportunity to be part of this dynamic group of rheumatologists has been a career highlight! CRUS promotes musculoskeletal ultrasound (MSUS) research and organizes practical educational courses for rheumatology practitioners from Canada and abroad.

Since 2009, we have seen the group grow and adapt through various challenges using innovation and collaboration as the key to success! CRUS's primary educational activity remains the basic course which teaches the fundamental principles of MSUS to rheumatologists. The course is held annually over two weekends in Toronto and includes didactic and hands-on learning, as well as virtual learning between the in-person sessions, as the learners submit scans to the tutors and receive feedback. Our world completely changed overnight in 2020 with the COVID-19 pandemic. With the help of Dr. Susan Barr (past president), Dr. Shirley Lake (basic course director), and Alyssa Long (project manager), we were able to adapt our basic course to an online platform. To evaluate the effectiveness of teaching, Dr. Shirley Lake has been leading an observational cohort study comparing learning outcomes from our online vs. historical in-person platforms.

Since 2022, our courses have gone back live; rising star Dr. Sahil Koppikar has helped elevate our basic course by assisting Dr. Lake in developing the CRUS basic course level 1 certificate.

Dr. Mo Bardi and Dr. Lihi Eder teaching.

CRUS group at basic course in Toronto.

CRUS also organizes an annual advanced course for those who are interested in expanding their knowledge in MSUS beyond basic skills. Our 2023 Ultrasound Guided Cadaveric Procedures course, held in Ottawa, was a success with Dr. Abe Chaiton, Dr. Johannes Roth, Dr. Mo Bardi, and Dr. Alessandra Bruns on Faculty. Ultrasound-guided procedures have been shown to improve the precision of local corticosteroid injections and improve patient satisfaction.

The learning never stops even for CRUS teachers! With her pedagogical prowess, Dr. Sibel Aydin (CRUS director) and Dr Lihi Eder (CRUS President) organized a teach-the-teachers event in Ottawa (September 2023). Dr. Emilio Filippucci from Italy, a world-class sonographer, shared his approach to teaching MSUS with current CRUS ultrasound tutors. One of the barriers to expanding the use of MSUS in Canada is the lack of tutors in many rheumatology programs. CRUS aims to train more rheumatologists who can serve as tutors across the country.

Another effort to improve education is being led by Dr. Samar Aboulenain. She is leading an educational research study using evidence-based cognitive load theory to optimize the MSUS CRUS learning experience (Scanning Flashcards Study).

One of the recognized gaps in the field of MSUS teaching is the lack of a standardized curriculum for ultrasound teaching for residents. Dr. Maria Powell, our resident representative extraordinaire, led a project that

CRUS executive and basic course faculty social.

involved many CRUS expert sonographers, resulting in Canada's first-ever consensus recommendations on MSUS training. Dr. Powell's project was presented in a plenary session at the 2023 ACR meeting in San Diego.

As you can see, research is a big part of CRUS; we honour the spirit of research with our annual CRUS research award. This year, we received six excellent applications from early career rheumatologists to study various aspects of MSUS use in various rheumatic conditions. Our winner is Dr. Thomas Hahn (mentored by Dr. Mo Bardi) whose study will focus on vessel wall thickness and pathology in Giant Cell Arteritis.

Furthermore, an article about CRUS would not be complete without mentioning our current President, Dr. Lihi Eder. Dr. Eder has been recognized globally for her expertise in psoriatic arthritis and as an advocate for rheumatology MSUS. Recently, Dr. Eder has worked with Dr. Sibel Aydin and Dr. Gurjit Kaeley in developing an MSUS scoring system for psoriatic arthritis and validating a handheld MSUS device (Clarius).

We are proud to share our joy of MSUS with a wider audience. The development of our open access CRUS Ultrasonography Guides (eBooks), led by Dr. Johannes Roth, has been a great online success via our Twitter (X) social media account *@crussurc*. Our free online resources can be accessed at *crus-surc.ca/educational-resources/*. We thank our CRUS executive members Dr. Bagovich, Dr. Bardi, Dr. Chaiton, Dr. Penney, Dr. Stein, Dr. Wilson, Dr. Aydin, Dr. Eder, Dr. Koppikar, Dr. Lake, Dr. Powell and Alyssa Benoit for all their contributions. We are grateful to AbbVie as a founding sponsor as well as Novartis, Eli Lilly Canada Inc, UCB Canada, Janssen, Amgen, Centurion, Esaote and General Electric for their ongoing support. As we look forward to our future, we are forever indebted to our founders (and past CRUS Presidents) Dr. Maggie Larché and Dr. Johannes Roth. We wish them both the greatest success in their new roles! Thank you all for sharing with us the joy of rheumatology MSUS! It's free to become a CRUS member, and we would love to have you join us at our next basic/advanced course — visit *crus-surc.ca/courses* for more information.

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CPD for the Busy Rheumatologist

Mini-Practice Audit Model (mPAM): Overcoming the "Fear" of Chart Audits

By Raheem B. Kherani, BSc (Pharm), MD, FRCPC, MHPE; Elizabeth M. Wooster, M.Ed, PhD(c); and Douglas L. Wooster, MD, FRCSC, FACS, DFSVS, RVT, RPVI

"So, is it as easy as they say to obtain section 3 credits?" inquires Dr. AKI Joint, a rheumatologist member of the Canadian Rheumatology Association (CRA). "I am starting to understand the purpose of the quality improvement cycle with plan-do-study-act (PDSA). It is even starting to make sense how knowledge translation may work in rheumatology, with all the advances that have happened, particularly in immunology. How do I apply this to my practice? I have heard that I could do a chart audit. But does that have to be as involved as the chart audit I did during my CRA Research Summer Studentship as a medical student? It must be more straightforward than that…"

An mPAM (mini-Practice Audit Model) is a focused audit based on individual practice patterns.[1] The individual formulates their own questions for their mini-audit. To complete the audit a limited number of patient charts are reviewed, usually 10-15 charts. The scoring system for the review allows objective analysis and identification of any gaps. The gaps can be directly mapped to specific actions (system, knowledge, skills, etc.) to implement guidelines in clinical practice (Figure 1).

Using the 2018 systemic lupus erythematosus (SLE) Guidelines (Box 1)[2], as an example, questions about cardiovascular risk assessment can be the basis of an mPAM. Using a 1-5 Likert scale, the defined questions are assessed. Approximately 10-15 charts are selected, and the results are collated (Figure 2). There is an opportunity to review lipid profiles and other cardiovascular risk assessments more consistently with SLE patients from this audit. Gaps are identified as those cells that fall below the designated cutoff. When using a 1-5 Likert the cutoff is usually 3 or 60%. Educational and system activities are chosen to address the issues underlying the identified gaps. A repeat

Box 1.

CV risk assessment from SLE Guidelines

For adults with SLE, we recommend that indicators of obesity, smoking, arterial hypertension, diabetes, and dyslipidemia be measured upon diagnosis of SLE, be reassessed periodically according to current recommendations in the general population, and be used to inform the CV risk assessment.[2]

Figure 1.

mPAM Quality Improvement Cycle

Figure 2.

mPAM Risk Factors for Patients with SLE Followed for at Least One Year

	Upon diagnosis	At start of therapy	Year 2
Obesity	3.7	2.9	2.8
Smoking	4.2	4	3.6
Hypertension	3.4	4.6	3
Diabetes	2.8	3.2	4
Dyslipidemia	1.9	2.6	4.1

Gaps are those identified by the grey cells. These cells represent the results that fall below the designated cutoff of 60% or 3 out of 5 on a Likert scale. These gaps should be addressed with educational and system interventions within the individual's practice.

mPAM is conducted once the remedial activities are completed to determine if the gaps have been addressed. If there is interest in determining long-term improvement, the mPAM process may be repeated at 6-month intervals to determine the impact on patients' cardiovascular risk assessment as per the 2018 SLE Guidelines.

"So, it isn't as time-consuming as the chart audit I did during my Summer Studentship," says Dr. AKI Joint. "I will use this approach every 6 months to actively monitor my implementation of the SLE and other guidelines in my practice (and to get MOC Section 3 credits)"[3,4]

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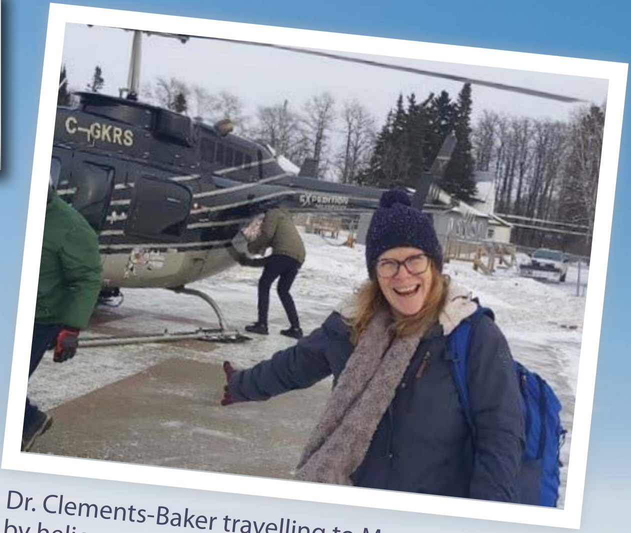
Kingston Region Update

By Marie Clements-Baker, MD, FRCPC

Greetings from Kingston and area! Queen's is delighted to welcome new faculty member Dr. Akihiro Nakamura. He comes to us after a spondyloarthritis (SpA) fellowship at the University of Toronto (U of T). He has enhanced our division through his passion for research, clinical work, and education. Happily, two of our recent grads have joined Dr. Henry Averns' community practice: Dr. Brett Catton and Dr. Bailey Dyck. Despite this, we remain underserviced with a very large catchment area. Dr. Jane Purvis closing her practice in Peterborough (congrats!) and saturated Ottawa rheumatologists exacerbate the regional shortage. Arthritis Society Canada (ASC) provides a welcomed model of care to help with the volume of referrals. Advanced Clinician Practitioner in Arthritis Care (ACPAC) occupational therapist Lynn Richards is able to divert non-inflammatory referrals, and ASC physiotherapist Lisa Robinson is working to complete her ACPAC training. Queen's has had a longstanding relationship enabling the provision of care to First Nations patients in Kingston. A recent initiative has once again allowed us to bring such care back to Moose Factory. Dr. Marie Clements-Baker will provide clinics in Moose Factory. This will allow rheumatology trainees to attend and broaden their understanding of culturally sensitive care.


Dr. Clements-Baker travelling to Moose Factory by helicopter from Moosonee airport.


The rheumatology grad group from Kingston.

Marie Clements-Baker, MD, FRCPC
Assistant Professor
Department of Medicine
Program Director, Division of Rheumatology
Queen's University

News from the Hamilton Catchment Area

By Faiza Khokhar, MD, FRCPC

The Hamilton Rheumatology group is sad to see Dr. Maggie Larché move to Calgary, leaving behind a legacy of excellence in scleroderma care. We also wished goodbye to retirees Drs. Bianchi, Hart, Scocchia, and Cividino, whose commitment to our patients is missed. Our group excitedly welcomed Dr. Konstantinos Tselios from Toronto, specializing in SLE, and are looking forward to Dr. Noura Al-Osaimi, who has musculoskeletal ultrasound (MSK-US) expertise, joining us from Ottawa. We also welcomed Dr. Reza Mirza as a Clinical Scholar. Other new community practices include Dr. Eva Kovacs in Hamilton, Drs. Matt Jessome and Shahna Tariq in St. Catherines, Dr. Irena Doubelt in Burlington, and Dr. Gabriel Jeyasingham in Kitchener-Waterloo.

The adult McMaster Rheumatology group is working on developing a Central Triage system to meet increasing local demands, address wait times, and improve patient care in the region. We continue to be a centre of excellence in vasculitis care. We established McMaster as a research site for the Canadian Research Group of Rheumatology in Immuno-Oncology (CANRIO). Our group continues to ensure excellence in patient care, research, and education.

Faiza Khokhar, MD, FRCPC
Assistant Professor, Department of Medicine,
Division of Rheumatology,
McMaster University

Residents, faculty, and support staff at the recent McMaster graduation party.

By Michelle Batthish, MD, MSc, FRCPC

Pediatric rheumatology in Hamilton continues to see tremendous growth over the past several years. Along with Drs. Michelle Batthish, Tania Cellucci, and Liane Heale, the team has welcomed Heather Ross (nurse), Degen Southmayd (physiotherapist), and Julie Herrington (full-time ACPAC-trained physiotherapist). Having such a diverse and multi-disciplinary team has allowed us to dedicate time towards expanding our research initiatives, including work towards improving transition to adult care, studying the impact of ACPAC therapists in pediatric rheumatology, and much more!

From left to right: Dr. Tania Cellucci, Dr. Michelle Batthish, Julie Herrington (ACPAC), Dr. Liane Heale and Heather Ross (RN).

We have also recently developed the Steppingstones program for children 2-5 years of age with functional impairments related to juvenile idiopathic arthritis (JIA) involving their foot or knee. This comprehensive program includes a 6-week exercise program with a physiotherapist and may include an assessment by an orthotist. The goal of the program is the normalization of gait and gross motor function. You can learn more about the program at the following link https://youtu.be/5fLgtOvtDlM.

Michelle Batthish, MD, MSc, FRCPC
Head, Division of Rheumatology
Associate Professor, Department of Pediatrics,
McMaster University
Ambulatory Lead, McMaster Children's Hospital

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* Comparative clinical significance unknown.
AS=ankylosing spondylitis; bDMARD=biologic disease modifying antirheumatic drug; CRP=C-reactive protein; MRI=magnetic resonance imaging; MTX=methotrexate; nr-Ax SpA=non-radiographic axial spondyloarthritis; NSAID=nonsteroidal anti-inflammatory drug; PsA=psoriatic arthritis; RA=rheumatoid arthritis.

Reference: SIMPONI® Product Monograph. Janssen Inc. January 5, 2024.

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