ACE Clinical Link Newsletter
March 2018

Created and distributed by the Mary Pack Arthritis Program: A newsletter for health professionals working with people with arthritis

Editor's Message

I have been impressed of late that The Rheumatologist magazine is addressing a wide variety of subjects of topical interest. Hence, the greater number article reviews from The Rheumatologist in this newsletter. Please get in touch with comments or questions Paul.Adam@vch.ca.

Introduction to the Assessment and Management of Rheumatic Disease: A skills workshop

The next 4-day skills workshop runs from April 23 - 26, 2018. This workshop is for nurses, physical therapists, and occupational therapists new to the field of rheumatic disease or interested in receiving an update of current best practices. The registration deadline is **Friday, March 23**, 2018 and brochures and registration forms are on our website - http://bit.ly/2wUi04m

New Online Resource for Supporting Patients' Mental Health

Kelty's Key, an online cognitive behavioral therapy service developed by Vancouver Coastal Health (VCH), provides support for patients who are struggling with anxiety, depression, insomnia, and/or panic attacks. A further section addresses family member's need for support. Patients living in the VCH region may also be able to access guidance and support from a VCH psychotherapist. Patients living elsewhere can still use the Kelty's Key site free of charge.

Each course is divided into a number of different modules. For example, the course on depression has modules entitled: *What is Depression? Get Active, Problem Solving, Thought Challenging,* and *Understanding Medication.* I encourage you to check out the site - https://www.keltyskey.com/

Stand Up and Be Counted Too! Survey

Please consider participating in an important study which aims to characterize the practising allied health professional workforce involved in the delivery of arthritis/musculoskeletal care in Canada. Anyone who self-identifies as non-physician health care provider can participate in the survey, including administrators, educators, researchers and clinicians.

An objective of this study is to capture a broad base of non-physician health professional specialists who are important to the circle of arthritis care service delivery across Canada. The ultimate goal will to be to identify certain characteristics of ***all*** practitioners engaged in advanced, extended or specialist roles in the arthritis care field so that the full spectrum of arthritis care services is better appreciated, and ultimately better networked, in Canada. This information is critical for stakeholders including patients, ministries of health, health professional regulatory bodies, and advocacy groups.

This survey https://www.surveymonkey.com/r/DDJSVRK should take no longer than 15 minutes to complete. The deadline for participation in this survey is WEDNESDAY MARCH 7, 2018.

Heated Gloves: Improving Hand Function in Systemic Sclerosis

The October issue of The Rheumatologist described a case study in the use of heated gloves for the management of some symptoms commonly associated with diffuse systemic sclerosis (dSSc), a subtype of scleroderma. A major impact on quality of life for people living with dSSc is the loss of hand function due to pain, Raynaud's phenomenon, ulcers, and acro-osteolysis. In this case study of one, Barb, a physical therapist and patient with dSSc, undertook a personal study examining the use of continuous superficial heat via battery-powered heated gloves. The gloves in question were battery-operated heated glove liners from Motion Heat in Calgary. They were worn for at least 6 hours/day while awake, seven days per week over a period of 4 months. She also wore them during Raynaud's episodes, when her fingers were painful, and when her fingers were cold or uncomfortable. Gloves were removed for activities of daily living and when wearing them was not feasible. The results of this 4-month case study were as follows:

- Pain was decreased.
- No digital ulcers formed during the intervention period.
- ROM improved in the right wrist, bilateral 2nd digits and left 5th digit, despite no formal stretching or strengthening exercises during the intervention period.
- Improvements were found in the nine-hole peg test performance.
- Sensation returned to six digits, especially in the left hand.

The full article is available for viewing - http://bit.ly/2FqLmLg

Lessons Learned from a 10-Year History of Biosimilars in the European Union

Biosimilars, previously known in Canada as Subsequent Entry Biologics (SEBs), are drugs that have been demonstrated to be highly similar to a biologic drug already authorized for sale. An article in the The Rheumatologist described key findings from a European Union (EU) report detailing their 10-year history of using biosimilar medications. Some of these findings include:

- The EU monitoring system for safety concerns has not identified any relevant differences in the nature, severity or frequency of adverse effects between biosimilars and their reference medicines.
- Although biosimilars may have minor differences from their reference medicines, these differences are not clinically meaningful. There are no expected differences in safety and efficacy.
- Biosimilars in the EU have been approved using the same standards of pharmaceutical quality, safety and efficacy as those of all biological medicines.
- A biosimilar can rely on the safety and efficacy gained during research with the reference medicine. This means clinical trials are not needed for each indication for which the biosimilar seeks approval.

The full article is available for viewing - http://bit.ly/2ElMLDJ

Biologic DMARDs: The Long-Term Benefits & Risks in RA Patients

A recent article in The Rheumatologist provided a nice overview of the long-term benefits and risks of using biologic DMARDs (bDMARDs) compared to synthetic DMARDs (sDMARDs). sDMARDs are the conventional medications such as methotrexate, hydroxychloroquine, lefunomide, etc. In comparison to sDMARDs, bDMARDs have been shown to:

- Increase the risk of infection and malignancy.
- Have better liver and kidney tolerance among patients with RA.
- Have significant clinical benefits when controlling moderate to severe autoimmune

diseases.

Other Findings:

- Several studies have shown that the number of THR and TKR surgeries has been decreasing in patients with a primary RA diagnosis. It's hypothesized that the introduction of biologics may be a contributing factor.
- Studies have shown that long-term bDMARD use in RA patients decreases the risk of cardiovascular disease (CVD).
- Compared to the general population and patients on sDMARDs, patients on bDMARDs have no increased risk for solid cancers. Patients on bDMARDs had a higher risk for lymphoma and nonmelanoma skin cancers as compared to the general population, but not significantly greater than patients receiving sDMARDs.

The full article is available for viewing - http://bit.ly/2rZbkUr

Rheumatic Disease Does Not Preclude Pregnancy

An article in the November issue of The Rheumatologist outlined the premise that with proper care, most women with rheumatic disease can now complete a pregnancy safely, provided that these women receive education and counselling. Here are the clinical pearls from this article:

- Having well-controlled disease at conception and during pregnancy is less likely to result in preterm deliveries and underweight deliveries.
- Most commonly, disease that is active at the start of pregnancy will remain so throughout the pregnancy, putting the mother and baby at increased risk. Active disease at the start of pregnancy may also increase the risk of a postpartum flare.
- Many women with rheumatic diseases take teratogenic medications and thus need to take their medical disease management in consideration when planning a pregnancy.
- Many patients with rheumatic disease of reproductive age do not have adequate birth control, and this includes patients using teratogenic medicines.
- A family planning discussion with all women of reproductive age is useful to address issues of disease control, use of teratogenic medications, and/or use of contraceptives. Consider starting this type of discussion by asking, "Tell me a bit about your life and where pregnancy fits in your plans. I ask because I'd like to work with you to try to make sure things turn out the way you'd like them to."
- Suggest that women come up with a pregnancy plan if they do want to become pregnant or formulate a contraceptive plan if they do not. Ideally, patients and their doctors should collaborate about the best time to start trying to conceive.
- The Centers for Disease Control's "U.S. Medical Eligibility Criteria for Contraceptive Use" provides detailed contraceptive information for women with specific medical conditions - http://bit.ly/2GwRROe
- The Rheumatologist article also provided detailed information on teratogenic medications, when to change high-risk medications, checking for autoantibodies that increase pregnancy risk, and use of folic acid supplementation - http://bit.ly/2DPIzuA

Exercise as Medicine

A recent issue of The Rheumatologist provided a nice overview to help health care professionals educate patients about the benefits of physical therapy and physical activity. Clinical pearls from this article are as follows:

- The metabolic benefits of exercise, through down-regulating pro-inflammatory cytokines that contribute to pain, appear to outweigh the momentary increase in pain due to biomechanical stress.
- Patient education can enhance adherence to exercise interventions and ensure proper modes of exercise, frequency, intensity and duration occur, as well as increase understanding of what is acceptable (i.e., typical) exercise-induced discomfort.
- Physically inactive patients with RA have a higher probability of a 10-year Cardiovascular Disease (CVD) event as compared to physically active RA subjects.
- It is widely considered safe to participate in physical activity and exercise no matter the level of disease activity.
- Physical therapists are able to evaluate patient needs and prescribe appropriately tailored exercise and physical activity interventions at the correct dose and duration.

The complete article is available for viewing - http://bit.ly/2CarUVy

Can Osteoarthritis Be Reversed?

The hope of finding medical interventions for managing osteoarthritis (OA) has led to a myriad of different approaches. One recent strategy has been to eliminate aging (or senescent) cells as a way to prevent or even reverse OA. Key points from this article in The Rheumatologist:

- In OA, joint cartilage is worn down, which leaves cells that can no longer divide.
- Senescent cells produce SASP (senescence-associated secretory phenotype), which is made up of cytokines and enzymes that are associated with inflammatory disease.
- A therapeutic drug for eradicating senescent cells has been developed and tested on mouse models and with cultured human tissue from patients with OA.
- Mouse model studies have found that the drug resulted in up to a 50% elimination of senescent cells. It also led to new cartilage formation. The animals were also shown to have greater muscle mass, tensile strength, and an absence of OA.
- The studies with cultured human tissue have also shown a major reduction in the number of senescent cells and the remaining chondrocytes produced type II collagen and aggrecan (the ingredients of cartilage).

The complete article is available for viewing - http://bit.ly/2FgCc3M

Is RA Preventable?

The title of this recent article in The Rheumatologist is a bit of a misnomer. The aim of the study was to determine whether awareness of RA risk and education on interventions for reducing risk could change health behaviors in a population of first-degree relatives of patients with RA. Study participants were randomized to one of three arms: the Personalized Risk Estimator for RA (PRE-RA) arm, a PRE-RA plus health counselling arm, or a comparison arm that received standard RA education. The primary outcome of this study was readiness to change.

PRE-RA is a web-based tool that gathered information on demographics, family history and behavioral risk factors, as well as certain genetic variables and the presence of RA-related autoantibodies. The tool then provided educational information personalized for the individual based on their specific risk factors and background. It also included specific tips on how to modify behavioral risk factors.

Study findings:

- By six months, 63.9% of those receiving PRE-RA and 50% of the comparison group increased their motivation to improve risk-related behaviours.
- When compared with nonpersonalized education, more PRE-RA participants increased fish intake (45% vs. 22.1%), brushed more often (40.7% vs. 22.9%), flossed with increased frequency (55.7% vs. 34.8%) and quit smoking (62.5% vs. 0.0% among 11 smokers).
- There were no statistically significant differences in behaviour changes between the two PRE-RA arms suggesting that the web-based tool by itself could be a powerful motivator for behaviour change.

The complete article is available for viewing - http://bit.ly/2EwpfEd

Articles of Interest

Khanna S, Jaiswal KS, Gupta B. Managing rheumatoid arthritis with dietary interventions. *Frontiers in Nutrition* 2017;4:32. doi: 10.3389/fnut.2017.00052. This study took a multi-pronged approach in making the case for the connection between RA symptoms and dietary interventions. The authors first reviewed the findings from 31 clinical trials of various dietary interventions in RA. They then summarized these findings by the type of dietary intervention including seven day fasting followed by vegan diet, vegan diet, Mediterranean diet, elemental diet, and elimination diet. The authors then focus on the types of food items in these various diets and outlined the mechanisms of action by which each food group is thought to have a positive impact on RA symptoms. The food groups detailed in the study include dietary fibers and whole grains, fruits, spices, essential fatty acids, synbiotics (a combination of probiotics and prebiotics), tea, alcohol, and herbs. The paper concluded with a table of 33 recommended anti-inflammatory superfoods.

Fruits	Dried plums, grapefruits, grapes, blueberries, pomegranate, mango, banana, peaches, apples
Cereals	Whole oatmeal, whole wheat bread, whole flattened rice
Legumes	Black soybean, black gram
Whole grains	Wheat, rice, oats, corn, rye, barley, millet, sorghum, canary seed
Spices	Ginger, turmeric
Herbs	Sallaki (boswellia serrata), ashwagandha
Oils	Olive oil, fish oil, borage seed oil (in encapsulated form)
Miscellaneous	Yogurt (curd), green tea, basil (tulsi) tea

A response to the Khanna et al. article by Jane Prince RN

The article provided a great overview of the research. I found it interesting that whole wheat bread and wheat were specifically listed, as a number of the studies used gluten free vegan or Mediterranean diets. We must take into consideration that wheat in North American was hybridized in the late 1980s with a Japanese wheat strain to produce a short, hardier wheat variant; so our wheat is different than European wheat and the type of wheat that a lot of us grew up on. Also in North American wheat is sprayed with the herbicide glyphosate (roundup) initially and specifically 2 weeks before harvesting to kill and dry it faster, so it does not need to be left in the fields to dry. As well, in the past 2 years a group of Harvard researchers showed

that the gluten (gliadin protein) in wheat opens the tight junctions between the cells in our GI tract in everyone about 20 – 30 minutes after eating it. If people are eating gluten a number of times per day, they are increasing the risk of leaky gut and allowing larger proteins and other substances to get into the blood stream and set up an autoimmune response. In regards to wheat, it may be best to consider organic wheat products, as they have not been sprayed (as glyphosate has also been shown to affect the microbiome and the tight junctions in the GI tract). Also the older style of wheat bread & flours, such as Red Fife is available in many grocery stores these days. I would have preferred that they listed grains that were gluten-free and those that contain gluten separately.

Also they list Holy Basil (tulsi) which is a great adaptogen tea, but I could see no mention in the article about the research around it and RA.