42

Going Beyond Pain: Virtual Meetings and Survey to Expand the JIA Option Map with Other Symptoms and Functional Activities

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Objectives: In addition to commonly experiencing pain, young people with juvenile idiopathic arthritis (JIA) often experience swelling, stiffness, fatigue and psychological symptoms. These symptoms negatively impact a wide range of functional activities, yet young people with JIA and their families often require more information and decision support on a variety of ways to manage these symptoms and help them participate fully in functional activities. As such, the current study aimed to expand the JIA Option Map, a web-based patient decision aid for JIA pain management, to include other relevant symptoms and functional activities. We sought to identify which symptoms and which aspects of daily function should be added to the JIA Option Map.

Methods: Our team is comprised of 35 members, including patient partners, health care providers (HCPs) and researchers, with expertise in JIA, shared decision making and research methods. HCPs include a wide range of professionals: pediatric rheumatologists, nurses, occupational therapists, physical therapists, psychologists, social workers and dietitians. First, we held a series of seven virtual research team meetings to identify and discuss the various symptoms and functional activities that were relevant to young people with JIA. Subsequently, we developed and distributed an online survey to members of our research group to agree on which elements to add to the JIA Option Map.

Results: A total of 17 individuals completed the survey, including four patient partners, 11 HCPs from four different professions and seven researchers. A total of 14 respondents felt that symptoms beyond pain, and ways to manage these additional symptoms, should be added to the app. Respondents rated fatigue, stress, anxiety, joint stiffness, poor sleep, feeling down and swelling as the most relevant to add to the app. A total of 13 respondents felt that functional activities should be added, as well as tips to help young people participate in daily activities. Respondents rated all categories of functional activities as relevant, with school and leisure being rated the highest, followed by activities of daily living and work activities.

Conclusion: Our team of patient partners, healthcare professionals and researchers identified physical and psychological symptoms, as well as a range of functional activities that should be

added to the JIA Option Map. Next steps will include consensus on how to integrate this information into the app to help young people with JIA manage symptoms and function in their daily life. ***Supported by a 2021 CIORA Grant entitled: Going beyond pain: Expansion of the JIA Option Map to support young people and their families to manage juvenile idiopathic arthritis in their daily lives.***

87

A qualitative analysis of the barriers and facilitators of a behavioural weight management program for patients with Psoriatic Arthritis (PsA) and comorbid obesity: Part I of the Small Changes for Psoriatic Arthritis Study.

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Objectives: Background: Psoriatic Arthritis (PsA) is an inflammatory auto-immune disorder that affects roughly 90,000 Canadians. Patients with PsA are at a high risk of comorbid obesity (i.e., BMI ≥30 kg/m2), present in 44% of cases. While weight-loss is known to help alleviate symptom burden and improve medication response and quality of life in patients with PsA and comorbid obesity, few studies have investigated behavioural weight-loss treatment (BWLT) in patients with PsA to support sustained weight-loss over time. Aims: The present study represents part one of a series of early-phase studies. The primary aim is to explore barriers, facilitators, and preferences of patients with PsA and obesity regarding participating in a BWLT, using a qualitative- descriptive approach.

Methods: Participants: Adults (18+) with diagnosed, symptomatic, PsA and obesity (BMI ≥ 30 kg/m2) were recruited from an outpatient rheumatology clinic in Penticton, British Columbia and invited to participate in a one-on-one interview with a researcher to provide their perspectives on a BWLT designed to meet the needs of PsA patients. Interview Procedures: A semi-structured interview guide was used to ask open-ended questions designed to elicit patients' barriers, enablers, and perspectives regarding participating in a BWLT. Interviews were audio-recorded and transcribed verbatim. Analysis: Interviews were analyzed using conventional content analysis to derive meaning units, categories, and themes from the data.

Results: Twenty participants (11 women; 79% white; mean age 57 years ±2.80; mean BMI = 34.13 ± 5.27 kg/m2) completed interviews. Overall, four themes and eleven subthemes emerged from the data: (1) Negative Past Experiences with a BWLT (subthemes: concerns surrounding restrictive diets, troubles maintaining weight-loss), (2) PsA Symptoms as Barriers to BWLT (subthemes: PsA interfering with health behaviours, fatigue and pain interfering with activity levels), (3) Acceptability of Proposed BWLT (subthemes: acceptability surrounding the program content, virtual delivery, group-based format), (4) Program Preferences and Needs (subthemes: flexibility with scheduling, informational support about PsA, and cost barriers).

Conclusion: Impact/Future Directions: Results are being used to develop a BWLT tailored to meet the needs of patients with PsA, and inform a subsequent, feasibility trial comparing weight-loss among patients who receive the BWLT, relative to wait-list controls. Future directions include situating collected data within the Theoretical Domains Framework. References: (1.) Radner, H., et al. Arthritis care & research, 2017; 69, 1510-1518. (2.) Singh, J., et al. Arthritis & Rheumatol 2019; 71, 5-32. (3.) Lutes, L., et al. Ann Behav Med. 2008; 35: 351-357. ***Supported by at 2021 CIORA Grant entitled: A Community-based Adaptation of the Small Changes***

Behavioural Weight Loss Treatment Approach for Psoriatic Arthritis Patients with Comorbid Obesity.

108

Usability testing of JIActiv, a Social Media-Based Program Promoting Engagement in Physical Activity among Young People Living with Juvenile Idiopathic Arthritis

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Objectives: This study evaluated the usability (user performance and satisfaction) of a social media-based program promoting physical activity among young people with juvenile idiopathic arthritis (JIA).

Methods: We conducted two cycles of usability testing of JIActiv, an educational and interactive Instagram-based program promoting physical activity among French and English-speaking young people with JIA. Both cycles (Total n=28) involved a qualitative study with semi-structured interviews. Here, we report the results of the second cycle, which led to the second and final prototype after minor modifications. A purposive sample of 13 adolescents and young adults with JIA was recruited from patient organizations, as well as a rehabilitation and a hospital center to participate in this cycle. There were 6 adolescents (mean age=16, SD=0.84) and 7 young adults (mean age=19, SD=0.58). The interview questions were grouped into 7 main categories including safety, design aesthetics, functionalities, content of the page, language display, organization of the program and suggestions for improvement to the JIActiv program. The interviews were completed individually online over Zoom. Audiotaped recordings were transcribed verbatim, sorted, organized, and coded using MAXQDA11 software.

Results: Participants used a computer, a smartphone or a tablet to access and navigate the JIActiv program. Overall, the participants did not report any significant concerns about privacy and safety. Most of them also found the program easy to navigate. All participants were satisfied with the program's visual appeal. The interactive features supporting group-based activities were highly appreciated as it offered opportunities to communicate and share information and experiences with peers. Most participants reported that the featured information was relevant and of good quality. The bilingual nature of the posts was not seen as a barrier to the use of the program. Generally, the organization of the program (overall length of the program, frequency of posts and weekly time requirements) was seen as adequate by the majority of participants. Participants suggested some minor modifications to the program. Based on these, modifications were implemented including edits to the informational videos to facilitate navigation.

Conclusion: Findings report on the usability testing of JIActiv, an interactive and educational Instagram-based program aimed at promoting physical activity among French and English-speaking young people living with JIA. This testing has allowed us to optimize end users' (young people with JIA) ability to access, to navigate, to understand and to implement the informational content and practical strategies featured through this program in a culturally competent, efficient and satisfying manner. ***Supported by at 2019 CIORA Grant entitled***:

Promoting engagement in physical activity among adolescents with juvenile idiopathic arthritis: Development of a social network-based intervention.

POD04

Comparison of survival on treatment among new users of biosimilar vs. originator biologics in inflammatory arthritis: population-based evidence from a natural experiment due to a policy change

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Objectives: British Columbia (BC) health policy mandated that all new anti-TNF initiations after June 2017 use biosimilars when available, providing the context for a natural experiment. Our study objective was to compare drug survival (as a surrogate marker of effectiveness and safety) after initiation of etanercept and infliximab for inflammatory arthritis in new users of biosimilars vs. originators, using historical controls pre-policy change.

Methods: Study Cohort: Using administrative health data, we identified all incident users of a new biologic (i.e. without prior prescriptions over 6 months) with rheumatoid arthritis (RA), psoriasis or psoriatic arthritis (Pso/PsA), or ankylosing spondylitis (AS). The biosimilar cohort includes incident users starting etanercept or infliximab between 07/01/2017 and 12/31/2019, followed until 12/31/2020 (post-policy period). Historical controls include all incident users of etanercept/infliximab originators between 01/01/2014 and 06/30/2016, followed until 06/30/2017 (pre-policy period). To control for potential temporal trends, we selected new users of adalimumab (no biosimilar available over the same time periods) as a comparison group. Outcome: Discontinuation was defined as no prescription renewal for at least 6 months. Statistical analyses: People were followed from anti-TNF initiation until discontinuation or censoring due to death, moving out-of-province, or end of follow-up, whichever occurred first. Discontinuation rates (per 100 person-year) were calculated. To deal with non-proportional hazards, we applied weighted Cox Proportional Hazard Models to estimate the adjusted hazard ratio (aHR) of discontinuing anti-TNFs, in people who started a biosimilar vs. the respective originator, after controlling for potential confounders (listed in Table 1). To control for temporal trend, we employed the difference-in-difference (DID) method, comparing drug survival among new users of biosimilar vs. originator etanercept/infliximab with new users of adalimumab post- vs. pre-policy change. The DID computes the difference between the aHRs logarithms for etanercept/infliximab and for adalimumab, reported as the ratio of the two aHRs in Table 1C.

Results: Our sample includes 827 biosimilar etanercept users (RA:556, AS:178, Pso/PsA:93) and 299 infliximab users (RA:154, AS:67, Pso/PsA:78); 1308 etanercept and 259 infliximab originator users; and 2255 adalimumab originator users post- and 1786 pre-policy change periods. Discontinuation rates are described in Table 1A. After adjusting for baseline covariates (Table 1B), and after accounting for temporal trends (Table 1C), the likelihood of discontinuation was similar for biosimilar vs. originator etanercept and infliximab users.

Conclusion: Real-world population-based data in BC shows that biosimilar etanercept and infliximab have comparable duration of treatment to the originators in incident users for inflammatory arthritis. ***Supported by at 2020 CIORA Grant entitled: Safety and effectiveness of biosimilar anti-TNF agents in British Columbia – Exploiting a natural experiment from a change in health policy***

Upload:

Table 1. Discontinuation of biosimilar and originator anti-TNFs before and after policy change

1A. Discontinuation rates				
Drug	Period	Discontinuation / N	Follow-up Years	Rate (per 100 person-year)
ADALIMUMAB	Pre (originator)	849 / 1786	2,477.05	34.27
	Post (originator)	1129 / 2255	3,029.03	37.27
ETANERCEPT	Pre (originator)	679 / 1308	1,750.16	38.80
	Post (biosimilar)	400 / 827	1,029.68	38.85
INFLIXIMAB	Pre (originator)	119 / 259	395.46	30.09
	Post (biosimilar)	158 / 299	410.63	38.48

1B. Hazard Ratio comparing discontinuation post- vs. pre- policy change				
Drug	Univariate Cox PH		Multivariable Cox PH*	
	cHR (95%CI)	p value	aHR (95%CI)	p value
ADALIMUMAB	1.08 (0.99,1.19)	0.0826	1.07 (0.98,1.17)	0.1443
ETANERCEPT	0.96 (0.85,1.09)	0.5766	0.95 (0.84,1.09)	0.4756
INFLIXIMAB	1.18 (0.94,1.49)	0.1601	1.14 (0.90,1.44)	0.2947

1C. Ratio of Hazard Ratios**				
	Univariate Cox PH		Multivariable Cox PH*	
	Ratio of cHR (95%CI)	p value	Ratio of aHR (95%CI)	p value
ETANERCEPT	0.89 (0.76,1.04)	0.1435	0.89 (0.76,1.04)	0.1536
INFLIXIMAB	1.09 (0.85,1.40)	0.5045	1.06 (0.82,1.37)	0.6455

Abbreviations: cHR: crude HR. aHR: adjusted HR, p value is from Wald test of hazard ratio=1 or ratio of hazard ratio=1 (i.e., no difference in drug discontinuation rate).

*Adjusted for age, sex, socio-economic status, rural vs urban residence, health authority, arthritis type, arthritis duration, number of prior biologic agents, comorbidities at anti-TNF initiation, and steroid and conventional DMARDs use.

**Ratio of Hazard Ratios denotes the ratio of hazard ratio for etanercept or infliximab to the corresponding one for adalimumab in Table 1.B. As such, Ratio of Hazard ratio is the exponential of difference-in-difference of log hazard rate for discontinuation, representing the differences in drug survival outcomes for biosimilar vs. originator new users of etanercept or infliximab, net from the temporal trend effect (adalimumab post- vs. pre-policy change period).

TOUR05

Utilization of a new educational platform designed to improve the care of cancer patients receiving immunotherapy: An Initiative of CanRIO (Canadian Research Group of Rheumatology in Immuno-Oncology)

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Objectives: Immunotherapy has revolutionized treatment of many advanced stage malignancies by harnessing the immune system to fight cancer. Use of these agents can lead to many off-target effects known as immune-related adverse events (irAE). The management of patients with rheumatic immune-related adverse events (Rh-irAE) as well as cancer patients with pre-existing rheumatic disease (PRD) is challenging in the face of limited guiding-evidence. This is a rapidly evolving area of medicine where many rheumatologists lack experience, knowledge, and confidence. To improve the knowledge of health care providers on two specific patient populations (i) cancer patients who develop de-novo Rh-irAE and (ii) patients with PRD being treated with immunotherapy by developing an educational platform that facilitates cross

discipline and region collaboration and supports healthcare providers caring for these patients to ensure educational resources are available and easily accessible. Here we assess the utilization of this platform.
Methods: We developed an educational platform (www.canrio.ca) to house multiple tools to facilitate knowledge acquisition and transfer including a) case-based learning modules (with pre and post module questionnaires) b) interactive bi-monthly case rounds c) up-to-date compilation of relevant research publications d) patient resources including drug information handouts e) healthcare provider resources including Rh-irAE specific handouts d) list of rheumatologists specializing in this field in Canada. Google Analytics is embedded within the www.canrio.ca website and was used to track website traffic since the website's inception in February of 2021.
Results: Between February 2021 and October 2022, 1431 users from 47 different countries accessed the www.canrio.ca website. The top three countries from which users accessed the site were Canada, China and the United States (Figure 1). The most accessed website pages included the homepage and login (1,739), case rounds (477), learning modules (307), doctors and clinics (243). Ninty-one people registered for case rounds; 41% rheumatologists, 43% trainees (rheumatology, oncology, internal medicine and neurology), 9% oncologists and 7% other (research coordinators, pharmacists).
Conclusion: As the use of immunotherapy increases, rheumatologists across Canada and the world will be increasingly called upon to co-manage these patients in partnership with oncologists and other healthcare providers. There is a need for further education in this rapidly evolving field of medicine and this educational program has been able to reach users not only in Canada, but all over the world. Future initiatives would be to facilitate international collaboration through case rounds, adding and updating resources, and specifically targeting an international audience. ***Supported by a 2020 CIORA Grant entitled: Improving the care of cancer patients receiving immunotherapy who develop rheumatic immune-related complications, and those with pre-existing rheumatic disease, through online education with healthcare providers: An initiative of CanRIO. 2023 Gold CRA Practice Reflection Award***

TOUR06

Preparing for a Shared-Care Model: what Proportion of Patients with Stable Rheumatoid Arthritis could be Followed in Primary Care?

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Objectives: To determine the proportion of patients with stable rheumatoid arthritis (RA) currently receiving specialist rheumatology care who could be managed with primary care in a shared-care model.
Methods: A retrospective chart review was conducted using a random sample identified from two university-based clinics in Calgary, Alberta. One year of rheumatology chart notes were reviewed (01/03/2021-28/02/2022). Data were extracted for type and frequency of rheumatology visits, disease activity, and visit outcomes (e.g., medication changes). RA was classified as active based on established DAS28 (≥2.6) and CDAI (≥2.9) score parameters or when visit outcomes included a medication change (added, stopped, or switched) or dose change. Patient and visit characteristics and outcomes were summarized descriptively. Patients were deemed appropriate for a shared-care model with management in primary care when RA was inactive for one year on conventional synthetic disease modifying anti-rheumatic drugs (csDMARDs) or no medication.
Results: Records from a total of 334 visits were reviewed from 165 patients (72% female) with RA, 66% (n=81) had seropositive RA. Median age was 65 years (IQR:51-72) and median time in rheumatology care was 8 years (IQR:5-9). Patients had a median of two rheumatologist appointments (IQR:1-3) each. Visits were held in person (70%) more often than by phone (30%). Current treatment was csDMARDs (monotherapy or combination therapy) in 43%, targeted synthetic DMARDs in 14%, biologics in 37%, and no DMARDs in 6%. Over the year, 73/155 (47%) patients had active disease at one or more, representing 119/334 (36%) of visits. Eighty-two patients had inactive disease at all visits, of which 36 were treated with csDMARDs only, and 9 were on no medication. Collectively these patients had 68 visits, with 42% (n=19) having 2+ visits and 58% (n=26) having 1 visit. We estimate that the overall number of rheumatologist follow-up visits could be reduced by 20% if patients who have stable inactive disease, not on medication or solely treated with csDMARDs were managed by their primary care provider.
Conclusion: Current models of care are based on pre-determined scheduled follow-ups which may lead to challenges in accessing care when patients need it most. RA visits could be reduced by approximately 20% by using alternative models of care, such as redirecting stable patients to primary care, thus increasing clinic capacity for new patients or for urgent appointments. Our work demonstrates an opportunity to rethink models of rheumatology care to use limited resources more efficiently, and improve access to care. ***Supported by a 2022 CIORA Grant entitled: Development and pilot of a shared-care model for rheumatoid arthritis leveraging an "on demand" follow-up strategy.***