was similar in both groups. And in terms of side effects no significant difference was seen between TCZ as monotherapy or combined with conventional immunosuppressants.

TABLE

	TCZ IN MONOTHERAPY (n=82)	TCZ COMBINED (n=52)	p
BASAL FEATURES AT TCZ ONSET			
GENERAL FEATURES			
Age, years, mean (SD)	71.2 ± 9.0	68.8 ± 8.0	0.04
Sex, female/male n (%)	62/20	39/13	0.93
Time from GCA diagnosis to TCZ onset (months), median [IQR]	13.0 [7.75-33.5]	18.5 [6.25-34.0]	0.333
SYSTEMIC MANIFESTATIONS			
Fever, n (%)	6 (7.3%)	3 (5.8%)	0.72
Constitutional syndrome, n (%)	18 (22.0%)	13 (25.0%)	0.68
PIIR, n (%)	40 (48.8%)	33 (63.5%)	0.096
ISCHEMIC MANIFESTATIONS			
Visual involvement, n (%)	20 (24.4%)	8 (15.4%)	0.21
Headache, n (%)	42 (51.2%)	28 (53.8%)	0.76
Jaw claudication, n (%)	7 (8.5%)	7 (13.5%)	0.36
AORTITIS AND ANOTHER LVV involvement, n (%)	28 (34.1%)	30 (57.7%)	0.007
ACUTE PHASE REACTANTS			
ESR, mm/1 st hour, mean (SD)	39.4 ± 32.5	42.3 ± 29.6	0.6
CRP, mg/dL, mean (SD)	2.1 ± 3.0	4.4 ± 7.5	0.014
Hemoglobin, g/dL, mean (SD)	12.2 ± 1.5	12.4 ± 1.4	0.41
CORTICOSTEROIDS AT TCZ ONSET			
Prednisone dose, mg/d	23.9 ± 17.3	19.4 ± 14.0	0.11
EFFICACY AND SAFETY AFTER TCZ			
Prolonged remission n (%)			
Month 6	31 (50.8)	27 (69.2)	0.160
Month 12	18 (51.4)	28 (82.4)	0.006
Month 24	10 (50)	17 (85)	0.018
Relapses n (%)			
Month 1	3 (3.8)	1 (2)	0.579
Month 3	4 (5.4)	3 (6.3)	0.845
Month 6	3 (4.9)	2 (5.1)	0.962
Month 12	6 (17.1)	3 (8.8)	0.305
Month 24	6 (30)	1 (5)	0.037
CORTICOSTEROIDS SPARING EFFECTS, median [IQR]			
Month 1	15 [7.5-21.25]	10 [7.5-20]	0.457
Month 3	10 [5-15]	7.5 [5-10]	0.179
Month 6	5 [2.5-10]	5 [2.5-7.5]	0.146
Month 12	5 [0-5]	2.5 [0-5]	0.064
Month 24	1.3 [0-5]	0 [0-1.25]	0.095
SIDE EFFECTS, n (%)			
Relevant adverse events	23 (28)	9 (17.3)	0.155
Serious infections	12 (14.6)	4 (7.7)	0.227

Conclusion: Patients receiving combined conventional immunosuppressants with TCZ in the clinical practice study showed a higher prolonged remission. The incidence of serious infections and/or relevant adverse events was not affected according to the treatment. As well as the corticoid-sparing effect was achieved in the same way in both groups.

REFERENCES:

- [1] Goercke .Calderón-M. Tocilizumab in giant cell arteritis. Observational, open-label multicenter study of 134 patients in clinical practice. *Semin Arthritis Rheum.* 2019 Jan 5. pii: S0049-0172(18)30571-7. doi: 10.1016/j.semarthrit.2019.01.003. [Epub ahead of print]
- [2] Loricera J et al. *Semin Arthritis Rheum.*2015;44:717-723

SATURDAY, 15 JUNE 2019

Workshop: #ConnectToday and tomorrow: The campaigning continues

OP0340-PARE THE USE OF INTERACTIVE AUGMENTED REALITYPOSTERS AS PUBLIC ENGAGEMENT TOOLS TO ENHANCE THE EULAR 'DON'T DELAY, CONNECT TODAY' CAMPAIGN

Timea Kosa¹, Daniel Livingstone¹, Brian Loranger¹, Carl Goodyear², Louise Bennett². ¹Glasgow School of Art, School of Simulation and Visualisation, Glasgow, United Kingdom; ²University of Glasgow, Infection Immunity and Inflammation, Glasgow, United Kingdom

Background: Musculoskeletal conditions (MSC), such as Rheumatoid arthritis (RA), place a heavy burden on society and have severe consequences for the individuals affected. In order to limit this burden of disease, early diagnosis and implementation of treatment are essential and result in a significantly increased chance of achieving long-term sustained remission. The European League Against Rheumatism (EULAR) campaign 'Don't Delay Connect Today' (DDCT) was created in order to educate the general public and primary healthcare providers (such as General Practitioners) about the importance of recognising the early warning signs of MSC's. Many countries have adopted the campaign across Europe, with groups using new and creative ways to engage local communities with this essential message. In Scotland, the Rheumatosphere team have worked to develop interesting and impactful ways of disseminating this message to the public. Augmented reality (AR) is a potential tool to enhance learning and has already been successfully used as a new and exciting tool for teaching¹. However, its role in less formal educational setting, such as public engagement, is still relatively unknown.

Objectives: The primary objective of this study was to test a new AR modality, assessing its effectiveness in increasing knowledge pertaining to RA and the central message of the DDCT campaign.

Methods: An interactive AR application was designed for a lay audience, incorporating aspects of RA disease pathogenesis along with the importance of early diagnosis and treatment of disease. The modality consisted of printed posters that were enhanced by an interactive AR application accessed through a hand-held tablet device. Members of the public, visiting the Glasgow Science Centre, were asked to assess our AR application by completing a 5 point Likert scale questionnaire before and after interacting with our posters and AR application.

Results: In total 27 participants took part in the testing, with the majority being between the age of 25-34 years old, a key target audience for the campaign, as this demographic commonly believe that they are 'too young' to develop arthritis². Overall the testing revealed that the AR application was easy to use, engaging and enjoyable. Further evaluation conducted using a 5-point Likert scale, showed that the AR application was successful in raising awareness of RA, with 81% of the participants reporting that they felt more aware about the pathogenesis, symptoms and treatment of RA after use. Moreover, 55% of the participants thought that they would inform friends and family about the causes, symptoms and treatments of RA, helping to disseminate the campaign message further, enhancing it's overall reach from a single event.

Conclusion: Overall the application was well received and indicates that this tool could be used to enhance public engagement moving forward. It would therefore be worthwhile to invest in the development of similar modalities for the EULAR 'Don't Delay, Connect Today' campaign.

REFERENCES:

- [1] Sommerauer, P. and Müller, O. (2014) 'Augmented reality in informal learning environments: A field experiment in a mathematics exhibition', *Computers and Education.* Elsevier Ltd, 79(2014), pp. 59–68. doi: 10.1016/j.compedu.2014.07.013.
- [2] Doran MF, Pond GR, Crowson CS, O'Fallon WM, Gabriel SE. Trends in incidence and mortality in rheumatoid arthritis in Rochester, Minnesota, over a forty-year period. *Arthritis Rheum* 2002;46:625-31.3.

Disclosure of Interests: Timea Kosa: None declared, Daniel Livingstone: None declared, Brian Loranger: None declared, Carl Goodyear Grant/research support from: AstraZeneca, BMS, Celgene, Janssen, MedAnnex, Pfizer and UCB, Speakers bureau: Abbvie, Louise Bennett : None declared
DOI: 10.1136/annrheumdis-2019-eular.4016

OP0341-PARE #SEEME – RAISING AWARENESS AND UNDERSTANDING OF JUVENILE IDIOPATHIC ARTHRITIS IN IRELAND

Brian Lynch. *Arthritis Ireland, Dublin, Ireland*

Background: For those living with juvenile idiopathic arthritis (JIA), it is a doubly confounding condition. The popular perception that arthritis is an old person's disease leaves little room for understanding that children can also get the disease or its impact. There are 1,200 children and young people under 16 living with JIA in Ireland.

In this campaign, Arthritis Ireland sought to capture people's attention by subverting typical associations around arthritis. The campaign had to speak to and draw upon youth culture. Once people's attention was captured, this created an opportunity to communicate key pieces of information about the disease and highlight the challenging situation regarding access to Irish paediatric rheumatology services.

Objectives:

- To raise awareness that children and young people can get arthritis;
- To increase awareness and understanding of what it's like to live with JIA;
- To increase political support for the provision of enhanced paediatric rheumatology services.

Methods: #SeeMe was launched during Ireland's National Arthritis Week (9-15 April 2018) and encompassed social media, public affairs and media relations.

A key element of the campaign was the creation of a unique media asset, a short music video, which would speak directly to young people and encourage them to get involved in the campaign. The video communicated how JIA can impact enjoyable, everyday teenage activities such as dancing.

A dedicated microsite was created which housed all of the campaign assets.

A campaign petition called on the Government to implement the Model of Care for Paediatric Rheumatology. It was extremely successful, gathering more than 17,000 signatures and far exceeding the target of 5,000. The petition also harvested powerful testimony from supporters who were able to share their own stories of living with JIA.

Personal patient stories were leveraged throughout the campaign by the involvement of #SeeMe Ambassadors. These were children and young people living with JIA who were willing to share their experience publicly. National and regional media were successfully targeted, securing considerable coverage. Subsequently, the campaign progressed to a third phase of activity as young people raised awareness of JIA through their own schools, social clubs and social media networks.

An infographic was developed to communicate key medical information about JIA and paediatric rheumatology services in a clear, accessible way.

Results: #SeeMe received an overwhelmingly positive response, not just from those affected by JIA, but from the general public, the medical community and political stakeholders. The campaign was successful in the following measurable ways:

- 87,000 people viewed the campaign video;
- 17,000 people signed the #SeeMe petition;
- 820,000 people were reached by the social media campaign;
- 35 pieces of media coverage on television, radio and print were achieved;
- Lobbying of politicians by patients and their families prompted 12 TDs and senators to raise this issue;
- In May 2018, the Government committed to the appointment of an additional paediatric rheumatologist in 2019, with plans to recruit a multidisciplinary team.

Conclusion: This campaign set out to give a voice to those living with JIA and to increase awareness and understanding of the disease. The campaign highlighted the challenges in paediatric rheumatology services and proved an effective vehicle in harnessing public opinion; resulting in over 17,000 people signing the petition calling for the implementation of the Model of Care for Paediatric Rheumatology.

In the wake of the campaign, the announcement by the Irish Government to invest in paediatric rheumatology services represents an important step forward. While much remains to be done, this is progress and highlights the important role played by patient organisations, and their public education and advocacy work.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.4741

SATURDAY, 15 JUNE 2019

Tackling inflammatory bone disorders in children and adults

OP0342

IDENTIFYING CANDIDATE ITEMS TOWARDS THE DEVELOPMENT OF CLASSIFICATION CRITERIA FOR CHRONIC NONBACTERIAL OSTEOMYELITIS (CNO) AND CHRONIC RECURRENT MULTIFOCAL OSTEOMYELITIS (CRMO)

Melissa Oliver¹, Eveline Wu², Raymond Naden³, Matthew Hollander⁴, Polly Ferguson⁵, Fatma Dedeoglu⁶, Seza Özen⁷, Yongdong Zhao⁸. ¹Riley Hospital for Children at Indiana University Health, Indianapolis, United States of America; ²University of North Carolina at Chapel Hill, Chapel Hill, United States of America; ³McMaster University Medical Centre – Hamilton Health Sciences, Hamilton, Canada; ⁴University of Vermont Children's Hospital, Burlington, United States of America; ⁵University of Iowa Stead Family Children's Hospital, Iowa City, United States of America; ⁶Boston Children's Hospital, Boston, United States of America; ⁷Hacettepe University, Ankara, Turkey; ⁸Seattle Children's Hospital, Seattle, United States of America

Background: Chronic nonbacterial osteomyelitis (CNO) is a severe and occult autoinflammatory bone disease of unknown cause. Early diagnosis is challenging, and CNO may debilitate affected children when left untreated. Currently, evidence-based and validated diagnostic and classification criteria for CRMO/CNO are lacking. The insidious disease course, increasing disease incidence, and significant delay in diagnosis highlight the need for the development of classification criteria that leads to more precise and early selection of patients for clinical trials^{1,2}.

Objectives: To identify candidate items towards developing classification criteria for CNO using anonymous survey and nominal group technique.

Methods: An international collaborative effort was formed within the pediatric and adult rheumatology communities to conduct the following phases: 1) to generate candidate criteria items by a Delphi survey among international rheumatologists;

2) to reduce candidate criteria items through consensus processes involving physicians managing CNO and patients or caregivers of children with CNO. This study was approved by Seattle Children's Hospital Institutional Review Board.

Results: In Phase 1, 259 pediatric rheumatologists (30%, N=865) participated in an online questionnaire about features most relevant to the classification of CNO. Of those, 77 (30%) practiced in Europe, 132 (51%) in North America, and 50 (19%) in other continents. A total of 138 (53%) responders had >10 years of practicing experience and 108 (42%) had managed >10 CNO patients. There were 33 candidate criteria items initially identified. In Phase 2, candidate items were presented to 39 rheumatologists and 7 parents and items were refined or eliminated through item reduction techniques. Seventy-seven (94%, N=82) workgroup members then participated in a second survey to rank the remaining items by their distinguishing power of CNO from mimicking conditions. Figure 1 shows the mean score for the remaining 31 candidate criteria. Multifocal lesions, ruling out malignancy and infection and typical location on imaging had the greatest means. CRP and/or ESR greater than 3x the normal upper limit had the greatest negative means.

Discriminatory Score: +3/-3 (increases/decreases the likelihood of CRMO the most)

+2/-2 (increases/decreases the likelihood of CRMO moderately)

+1/-1 (increases/decreases the likelihood of CRMO slightly)

0 (no difference)

Conclusion: Through surveys and consensus technique, candidate items towards developing classification criteria for CNO were identified. This list of items will guide the design of a feasible patient data collection form towards weighting of each item in the classification criteria.

REFERENCES:

- [1] Roderick MR, Shah R, Rogers V, Finn A, Ramanan AV. Chronic recurrent multifocal osteomyelitis (CRMO)—advancing the diagnosis. *Pediatric Rheumatology*. 2016 Dec;14(1):47.
- [2] Jansson A, Renner ED, Ramser J, Mayer A, Haban M, Meindl A, et al. Classification of non-bacterial osteitis: retrospective study of clinical, immunological and genetic aspects in 89 patients. *Rheumatology*. 2006 Jun 17;46(1):154-60.

Acknowledgement: CNO/CRMO Work Group, Childhood Arthritis and Rheumatology Research Alliance

Disclosure of Interests: Melissa Oliver: None declared, Eveline Wu: None declared, Raymond Naden Speakers bureau: Was a speaker at conferences paid by pharmaceutical companies several times in the past, but not in the last 7 years., Matthew Hollander: None declared, Polly Ferguson: None declared, Fatma Dedeoglu Consultant for: Attended a scientific meeting for Novartis in 2017. Overall monetary amount was less than \$5000., Seza Özen Consultant for: Seza Özen is receiving consultancy fees from Novartis, Speakers bureau: Roche, Yongdong Zhao Grant/research support from: I have grant support from Bristol-Myer Squibb

DOI: 10.1136/annrheumdis-2019-eular.1539