THURSDAY, 14 JUNE 2018

It's your move: promoting physical activity in people with RMD's

OP0219-HPR THE EFFICACY OF MOTIVATIONAL COUNSELLING AND SMS-REMINDERS ON DAILY SITTING TIME IN PATIENTS WITH RHEUMATOID ARTHRITIS: 22 MONTHS FOLLOW-UP OF A RANDOMISED, PARALLEL-GROUP TRIAL

T. Thomsen¹, M. Aadahl², N. Beyer³, M.L. Hetland¹, K.B. Løppenthin¹, J. Midtgaard⁴, R. Christensen⁵, S.M. Nielsen⁵, M. Østergaard¹, P. Jennum⁶, B. A. Esbensen¹. ¹Center for Rheumatology and Spine Diseases, Rigshospitalet, Denmark; ²Centre for Clinical Research and Prevention, Bispebjerg and Frederiksberg Hospitals; ³Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen; ⁴University Hospitals Centre for Health Research, Rigshospitalet, Denmark; ⁵Musculoskeletal Statistics Unit, The Parker Institute, Bispebjerg and Frederiksberg Hospitals; ⁶Danish Center for Sleep Medicine, Department of Neurophysiology, Rigshospitalet, Denmark, Copenhagen, Denmark

Background: Patients with rheumatoid arthritis (RA) have high amounts of daily sitting time and do not meet recommendations for moderate to vigorous physical activity (PA). Previously, we reported results from a randomised controlled trial (RCT) investigating the efficacy of a four-month individually tailored behavioural intervention, targeting reduction of sedentary behaviour (SB) in patients with RA.¹ The four-month post intervention results showed that patients in the intervention group reduced their daily sitting time; moreover patient-reported outcomes (PROs) and total cholesterol levels improved compared to the usual lifestyle control group.

Objectives: To investigate 18 month post-intervention efficacy of the four-month individually tailored, behavioural intervention on daily sitting time in patients with RA.

Methods: In the observer-blinded RCT, we included 150 RA patients from a rheumatology outpatient clinic. The intervention group (n=75) received three motivational counselling sessions and tailored text messages aimed at increasing light intensity PA through reduction of SB. The control group (n=75) maintained usual lifestyle. Primary outcome was change from baseline in objectively measured daily sitting time. Secondary outcomes included PROs and cardio-metabolic biomarkers (blood pressure, lipids and HbA1c). All outcome measures were analysed with a mixed effects repeated measures ANCOVA model on the intention-to-treat population.

Results: At 22 months follow-up from baseline, 12 participants were lost to follow-up (three and nine, respectively). Compared to baseline, daily sitting time in the intervention group decreased 1.10 h/day, and in the control group it increased 1.32 h/day; between-group difference of -2.43 h/day (95% CI: -2.99 to -1.86; p<0.0001) in favour of the intervention group. Likewise, for most secondary outcomes between-group results favoured intervention: VAS-pain: -15.51 mm (-23.42 to -7.60), VAS-fatigue: -12.30 mm (-20.71 to -3.88), physical function: -0.39 HAQ-units (-0.53 to -0.26), total cholesterol: -0.86 (-1.03 to -0.68), triglyceride: -0.26 (-0.43 to -0.09) and HbA1c: -1.15 (-1.39 to -0.91) mmol/l.

Conclusions: Even 18 months after completed intervention results showed an effect on daily sitting time and improvements in PROs, lipids and HbA1c in favour of the intervention group. Findings suggest that an individually tailored, behavioural approach may be beneficial in promoting health in addition to current clinical practise for patients with RA.

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Challenges of patient organisations' in the 21st century

OP0220-PARE DEVELOPMENT OF THE SWISS NATIONAL STRATEGY 'MUSCULOSKELETAL DISEASES' 2017-2022 BY THE SWISS LEAGUE AGAINST RHEUMATISM

S.M. Engel, V. Krafft. *Swiss League against Rheumatism, Zürich, Switzerland*

Background: To support countries in their national efforts, the WHO developed a Global Action Plan for the Prevention and Control of Noncommunicable Diseases

2013-2020, which included cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.¹ Although rheumatic or musculoskeletal diseases were not considered by the WHO, the Federal Office of Public Health (FOPH) of Switzerland included them within the National Strategy for the Prevention of Noncommunicable Diseases (NCD strategy).² This valuable national strategy and the corresponding action plan focus mainly on primary and secondary prevention with the aim to prevent diseases before their occurrence and to decrease associated risk factors. As a consequence, numerous organisations started to prepare disease-specific national strategies with focus on tertiary prevention and the main intention of supporting people with chronic illness.

Objectives: The objective of this project of the Swiss League against Rheumatism was to develop the Swiss National Strategy 'Musculoskeletal Diseases' 2017-2022. The strategy focused on patients affected by a rheumatic disease in order to complete the objectives that had already been undertaken by the Swiss government.

Methods: The structure of the Swiss League against Rheumatism (non-profit organisation) required a streamlined process. The theoretical framework, as part one in a two-part strategy, was developed from scientific literature. For the second part of the strategy, the identification of different measures in various fields of action, an expert group with advisory role was built in September 2015. This expert group was composed of different organisations: the Federal Office of Public Health, the Swiss Conference of the Regional Directors of Health Care, the Swiss Society of Rheumatologists, the Swiss Society of Orthopaedics and Traumatology, the Swiss Association of Physiotherapy, the Swiss Association of Occupational Therapy and the Swiss League against Rheumatism. Several interviews were conducted with experts from those and other organisations to determine the need for action in the field of musculoskeletal diseases for the upcoming six years. In summer 2016 the various recommendations of possible measures were prioritised.

Results: In summer 2017 as a result of this process, the Swiss League against Rheumatism was able to present the National Strategy 'Musculoskeletal Diseases' 2017-2022 with various measures grouped in the categories of 'prevention and early detection', 'care' and 'research and education'.³

Conclusions: Using this approach, a national strategy was developed with a reasonable amount of personal and financial resources. The current challenge of the implementation process is to motivate the involved organisations to realise specific measures on their own or in collaboration. These measures enable a better support of persons with musculoskeletal conditions during the full course of their disease.

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OP0221-PARE KNOW THEIR NUMBERS: WHAT DO RA PATIENTS KNOW ABOUT THEIR OWN BIOMEDICAL DATA?

T. Ngcozana¹, A. Bhatia². ¹Rheumatology, Royal Free Hospital; ²Rheumatology, Hillingdon Hospital NHS Foundation Trust, London, UK

Background: Evidence shows that patients with a higher knowledge regarding their health, experience better health and have better outcomes, this leads to lower costs for the National Health Service. The Blood Pressure Association UK encourages the public to know their biomedical data. Similarly, there is a desire for patients with chronic diseases such as rheumatoid arthritis (RA) to know their biomedical data (blood pressure, lipid profile, DAS 28 score, BMI, blood sugar etc). It is well documented that patients with RA are at a high risk of developing cardiovascular disease.

Objectives: The aims of this study were to ascertain the existing knowledge that patients have on their biomedical data, understand the barriers of knowing these health indicators and enquire how their knowledge can be improved.

Methods: 50 consecutive patients with RA seen in a nurse-led clinic were asked to complete an anonymised questionnaire. The questionnaire consisted of 10 questions which assessed demographics, the patients' knowledge of their current biomedical data and the importance of knowing this information. It also enquired if patients knew what the term 'know your numbers' meant, reasons for not knowing and what could be done to increase their knowledge in knowing their numbers.

Results: 80% (n=40) questionnaires were returned. The estimated mean age (mean ±SD, years) was 58.1±13.4. A majority of the respondents were female

(87.5%). The highest category of disease duration for the cohort was between 2–5 years with 40% (n=16) patients. 30% (n=12) of the respondents were aware of the 'know your numbers' concept. 27.5% (n=11) knew their cholesterol while 80% did not know their last blood sugar. The majority 90% (n=36) did not know their BMI. Only 25% of the respondents knew their DAS score. 50% knew the significance of the numbers. 40% (n=16) reported that no one had informed them about the numbers. 95% (n=38) of the participants showed interest in knowing their numbers and 27.5% (n=11) suggested that a written record explained and regularly updated would be appropriate whilst 35% (n=14) proposed that a multidisciplinary input would be useful in regularly informing them of the numbers.

Conclusions: Although cardiovascular disease risk assessment and the management has improved in RA. There still remains a gap in patient engagement and activation in taking responsibility in knowing the risks and what they mean. It is well documented that patients with increased level of activation are more likely to engage in positive health behaviours resulting better outcomes. Our study has shown that although patients do not know much about their biomedical data they are interested in knowing about them. Knowing their biomedical may encourage them to take more ownership of their health even leading to more self-managing their RA.

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The EULAR exercise recommendations for physical activity in people with inflammatory arthritis and osteoarthritis

OP0222-HPR PHYSICAL CAPACITY CONTRIBUTES marginally IN EXPLAINING VARIATIONS OF FATIGUE IN PERSONS MODERATELY AFFECTED BY RHEUMATOID ARTHRITIS

S. Pettersson^{1,2}, I. Demmelmaier², B. Nordgren^{2,3}, A.B. Dufour^{4,5}, C.H. Opava^{2,6}.

¹Theme Inflammation and Infection, Karolinska University Hospital; ²Division of Physiotherapy, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet; ³Functional Area Occupational Therapy and Physiotherapy, Allied Health Professionals Function, Karolinska University Hospital, Stockholm, Sweden;

⁴Institute for Aging Research, Hebrew Senior Life, Harvard Medical School; ⁵Beth Israel Deaconess Medical Center, Boston, USA; ⁶Rheumatology clinic, Karolinska University Hospital, Stockholm, Sweden

Background: Fatigue is a prominent problem for persons with rheumatoid arthritis (RA). Physical activity, including planned and structured exercise, is an important non-pharmacological intervention that positively affects fatigue. Physical capacity including variables as aerobic capacity, muscle strength and lower limb capacity, are modifiable and their relative contributions to fatigue are thus of interest to better understand and address this detrimental consequence of RA.

Objectives: To explore the contributions of physical capacity in explaining variations in fatigue among people with rheumatoid arthritis (RA).

Methods: This cross-sectional study included 269 participants (82% women, mean age 60 years, mean DAS28 2.8, mean HAQ-DI 0.5) recruited for a physical activity intervention. Data were collected from the Swedish Rheumatology Quality Registers, from questionnaires on fatigue, activity limitation, perceived health, pain and anxiety/depression and from physical capacity tests (lower limb function, grip strength, aerobic capacity). We used logistic regression to estimate the association between severe fatigue (≥ 50 , VAS 0–100) and A) independent variables related to disease and disease impact and B) model A plus physical capacity tests. Pooled odds ratio tests compared model fit.

Results: Severe fatigue was reported by 95 participants (35%). The three variables which were statistically significantly associated with severe fatigue ($p < 0.05$) in both models were perceived health, pain and anxiety/depression. Anxiety/depression demonstrated the largest effect size with odds ratios of 2.43 (95% CI: 1.20 to 4.94) in model A and 2.58 (95% CI: 1.25 to 5.32) in model B. The likelihood ratio test indicated that model B was a better fit to the data than model A with χ^2 (df 3)=2.65, $p=0.048$.

Conclusions: We found that disease impact variables rather than physical capacity variables are predictors of severe fatigue in people with RA. Further studies are needed to assess correlations between physical capacity and fatigue using multidimensional assessments of fatigue to enable separate analyses of physical and mental fatigue respectively.

Disclosure of Interest: None declared

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Immune senescence and ageing

OP0223 TARGETING CHONDROCYTE PLASTICITY VIA CONNEXIN43 MODULATION ATTENUATES CELLULAR SENESCENCE IN OSTEOARTHRITIS

M. Varela-Eirín¹, A. Varela-Vázquez¹, C. Paño², A. Casado-Díaz³, J.M. Quesada-Gómez³, E. Fonseca¹, T. Aasen⁴, A. Tabernero⁵, J.R. Caeiro⁶, A. Blanco⁷, M. D. Mayán¹. ¹CellCOM Research Group, Instituto de Investigación Biomédica de A Coruña (INIBIC), A Coruña; ²Unit of Experimental Neurology-Neurobiology, Ramón y Cajal Hospital (IRYCIS), Madrid; ³Clinical Management Unit of Endocrinology and Nutrition, Maimónides Biomedical Research Institute of Córdoba (IMBIC), Córdoba; ⁴Translational Molecular Pathology Research Group, Vall d'Hebron Research Institute (VHIR), Barcelona; ⁵Departamento de Bioquímica y Biología Molecular, Instituto de Neurociencias de Castilla y León (INCYL), Salamanca; ⁶Department of Orthopaedic Surgery and Traumatology, Complejo Hospitalario Universitario de Santiago de Compostela (CHUS), Santiago de Compostela, Spain; ⁷Flow Cytometry Core Technologies, UCD Conway Institute, Dublin, Ireland

Background: Chondrocytes in articular cartilage undergo phenotypic changes and senescence, restricting cartilage regeneration and favouring the osteoarthritis (OA) progression, a chronic disease characterised by degeneration of articular cartilage leading to physical disability and pain. Like other wound healing disorders, chondrocytes from OA patients show a chronic increase in the transmembrane channel protein connexin43 (Cx43), which through the exchange of factors or recruitment/release of signalling factors to the membrane regulates signal transduction. Immature or stem-like cells are found in cartilage isolated from OA patients, yet their origin and role in disease progression are unknown.

Objectives: Our objective was to investigate the role of Cx43 in chondrocyte plasticity during osteoarthritis.

Methods: Human mesenchymal stem cells and chondrocytes from osteoarthritic donors were used in this study. Protein levels were evaluated by western blot, immunofluorescence and flow cytometry. RNA expression was evaluated by RT-qPCR. Cell communication was studied by scrape loading assay and flow cytometry.

Results: Here we show that Cx43 acts as a positive regulator of the reversion of human chondrocytes to a less differentiated state. Overactivity of Cx43 in the membrane largely maintain this stem-like phenotype by increasing the basic helix-loop-helix transcription factor TWIST-1 and tissue remodelling and proinflammatory factors such as MMPs and IL-6, which in turn lead to cellular senescence by upregulation of p53 and p16INK4a, contributing to the senescence-associated secretory phenotype (SASP). Downregulation of Cx43 leads to redifferentiation of osteoarthritic chondrocytes (OAC) into more differentiated state decreasing MMPs, proinflammatory cytokines production and cellular senescence. Collectively, these results identify a causal Cx43-sensitive circuit in chondrocytes that regulates dedifferentiation and redifferentiation events involved in wound healing and tissue repair. In addition we show that chronic dedifferentiation drives catabolic processes and cellular senescence.

Conclusions: Targeting Cx43 allows dedifferentiated chondrocytes to revert to a chondrocyte-specific phenotype and its subsequent recovery in a predictable manner. These findings support the use of Cx43 as an appropriate therapeutic target to halt OA progression and to promote cartilage regeneration

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Special delivery: intercellular communication

OP0224 ADAMTS-12 PROTECTS AGAINST INFLAMMATORY ARTHRITIS THROUGH INTERACTING WITH PROINFLAMMATORY CTGF

W. Fu, J. Wei, A. Hettinghouse, W. He, C. Liu. Department of Orthopaedic Surgery, New York University Medical Center, New York, USA

Background: It has been reported that a disintegrin and metalloproteinase with thrombospondin motifs-12 (ADAMTS-12) is a susceptibility gene for rheumatoid arthritis (RA) development, and its level was significantly increased in RA patients. In addition, ADAMTS-12 was also reported to be required for normal inflammation.

Objectives: This study aims to determine the role of ADAMTS-12 and the underlying mechanisms in the pathogenesis of inflammatory arthritis.

Methods: Collagen-induced arthritis (CIA) was established in ADAMTS-12^{-/-} mice and their control littermates to determine the role of ADAMTS-12 *in vivo*. Connective tissue growth factor (CTGF) deficient Raw264.7 were used to