SP0043 **WORK RETENTION REHABILITATION IN PRACTICE**

Y. Prior[1,2] on behalf of Rehabilitation Research Group, University of Salford. [1]*Health Sciences, University of Salford, Manchester;* [2]*Rheumatology, Mid Cheshire NHS Trust Leighton Hospital, Crewe, United Kingdom*

This session aims to meet health professionals' needs in recognising, examining, and identifying problems that patients with inflammatory arthritis (IA) face at work. We know that one in five people with inflammatory arthritis lose their job within five years of diagnosis and, once work disabled, they are unlikely to return to work. Therefore, preventive interventions targeted at work retention, which aim to help people to stay at work, are needed to avoid the transition from work instability to work disability. Rheumatology health professionals play an important role in identifying patients' work problems at an earlier stage and helping them to stay at work. Currently, there are no set pathways to outline health professionals' approach to identifying people with work problems and/or work rehabilitation interventions in the UK. Further, there is a need to train health professionals in the importance of the early recognition of these problems and evidence-based interventions to address work instability.

This session will focus specifically on the rheumatology occupational therapy-led work rehabilitation taken place in a NHS setting in the UK. Using real life case studies, Dr Prior will discuss the standardised assessments used in identifying work problems, collaborative goal setting and work interventions to provide a snapshot of work rehabilitation in the context of clinical practice.

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WEDNESDAY, 14 JUNE 2017

Comorbidities: having one RMD is enough - we don't need anything else

SP0044 **SCREENING FOR COMORBIDITIES IN DAILY PRACTICE: WHO AND HOW?**

L. Gossec. *Paris 06 University, Pitié-Salpétrière Hospital, Paris, France*

Comorbidities are frequent in RMDs, as in many other chronic diseases. In inflammatory rheumatic diseases, the most frequent comorbidities are cardio-vascular diseases, depression, infections and cancers. Some of these diseases are more frequent than in persons without RMDs, some are not more frequent but are more often under-assessed and under-treated. These comorbidities and their risk factors need to be screened for. Screening in daily practice is not so simple since it necessitates time, physician expertise and patient cooperation. In this talk, we will address recent recommendations on how to screen for comorbidities, how often and in which setting this should be performed, and the respective roles in screening of rheumatologists, rheumatology nurses and persons with RMDs.

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SP0045 **DO PATIENT ORGANISATIONS HAVE A ROLE TO PLAY IN PREVENTING CO-MORBIDITIES?**

A.M. Bosworth. *n/a, National Rheumatoid Arthritis Society, Maidenhead, United Kingdom*

My talk will look in detail at how patient organisations can play a role in preventing co-morbidities. NRAS is currently engaged in two major projects which are both directly concerned with the prevention of co-morbidities. During RA Awareness Week in the UK, 19–26 June, NRAS will launch "Love your Heart" an on-line, interactive video programme to educate people with RA about their increased risk of heart disease and atherosclerosis. This programme explains in simple terms why people with RA are at increased risk of cardiovascular disease. The programme provides the opportunity to appraise individual risk factors, complete a QRISK2 assessment with their GP and provides a cognitive-behavioural framework to empower people to change their behaviours and achieve a healthier lifestyle, thereby reducing risk of heart disease. Baseline and 6 months evaluations are built into the programme. It has been developed with input from a consultant rheumatologist, GP, and other health experts as well as patients. If time permits I will also a describe a research study we are undertaking with 3 hospitals in the UK whereby we will randomly assign newly diagnosed patients to receive a targeted support fprogramme rom NRAS or be in a control group which does not receive this support for a period of 6 months. Our aim is to show that the group receiving the targetted support has less anxiety and depression, although other outcomes will also be measured.

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SP0046 **PREVENTION AND THE PROTECTIVE ROLE OF EXERCISE AND LIFESTYLE INTERVENTIONS ON COMORBIDITIES IN RHEUMATIC DISEASES**

S. Garcia Diaz. *Rheumatology, Consorci Sanitari Integral, Hospital Moises Broggi Sant Joan Despi, Sant Joan Despi, Spain*

Background: It has been recognised that patients with rheumatic diseases are at increased risk of developing comorbid conditions such as cardiovascular disease (CVD), malignancies, infections and osteoporosis (among others). Lifestyle interventions (non smoking, non alcohol, healthy diet and exercise) may play an important role to reduce comorbidities in these patients.
Objective: To find if lifestyle interventions and especially exercise play a vital role in preventing comorbidities in rheumatic diseases through an extensive review of recent literature.

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THURSDAY, 15 JUNE 2017

Cytokines and chemokines

SP0047 **TYPE I INTERFERON SYSTEM IN AUTOIMMUNITY**

L. Rönnblom. *Department of Medical Sciences, Uppsala University, Uppsala, Sweden*

The type I interferon (IFN) system is our main defense against viral infections and can be activated by a large number of sensors of nucleic acid, triggering the production of more than 15 different proteins with antiviral and immunostimulatory capacity. There are several observations suggesting an important role for this system in the etiopathogenesis of SLE and other autoimmune diseases. Among these are the reported development of autoimmune diseases during treatment with IFN-alpha, a prominent increase in the expression of type I IFN regulated genes (an IFN signature) in a number of rheumatic diseases, the existence of endogenous or self derived IFN inducers in SLE patients and a genetic association between autoimmune diseases and gene variants within the type I IFN signaling pathway.

The type I IFN system is closely connected to a number of cytokine and chemokine pathways, which all can contribute to both the IFN signature and the type I IFN effects. Important type I IFN effects are maturation and differentiation of dendritic cells, activation of T and B cells with enhanced antibody production and induction of increased expression of autoantigens. Consequently, type I IFNs can act as an immune adjuvant and promote an autoimmune process. Recent data have also shown that the regulation of the type I IFN system is abnormal in SLE, which all together suggests that inhibition of the type I IFN system could be beneficial in SLE and possible also other autoimmune diseases. Many different therapeutic targets exists and several studies are in progress aiming to block, or down-regulate, the activated type I IFN system in SLE. A number of studies with monoclonal anti-IFN-alpha antibodies have been reported, and a small study investigating vaccination with an interferon-alpha-kinoid against IFN-alpha has been published. Recently, a phase IIb study targeting the type I IFN receptor in moderate to severe SLE was published, reporting substantially reduced disease activity. Other therapeutic possibilities include elimination of the endogenous IFN inducers and inhibition of key molecules in the type I IFN signaling pathway. The results so far shows that it's possible to suppress the IFN signature and improve several biomarkers in SLE patients without major safety problems. The challenge for the future is to modulate the interferon system in autoimmune diseases more precisely and realize that different treatments may be appropriate in various patients.

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SP0048 **TARGETING OF ANGIOGENESIS**

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Angiogenesis is de novo capillary outgrowth from pre-existing blood vessels. This process not only is crucial for normal development, but also has an important role in supplying oxygen and nutrients to inflamed tissues, as well as in facilitating the migration of inflammatory cells to the synovium in rheumatoid arthritis, spondyloarthritis, and other tissues in systemic autoimmune diseases. Neovascularization is dependent on the balance of proangiogenic and antiangiogenic mediators, including growth factors, cytokines, chemokines, cell adhesion molecules and matrix metalloproteinases. In this lecture I will provide an overview of the various pathways that govern these angiogenic processes and discusses potential approaches to interfere with pathological angiogenesis, and thereby ameliorate inflammatory disease, by targeting these pathways specifically in endothelial cells.

Key Messages:

- In chronic inflammatory diseases, angiogenesis enables increased delivery of oxygen and nutrients to immune cell populations accumulating in inflamed tissues, and contributes to further immune cell infiltration

- Angiogenesis is driven not only by hypoxia, but also by proinflammatory mediators produced by immune and stromal cells
- Many pathways downstream of these proinflammatory stimuli contribute to various cellular processes involved in angiogenesis
- Targeting proangiogenic pathways to inhibit neovascularization has been successfully exploited in several cancers, and may also prove beneficial in the treatment of chronic inflammatory diseases

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SP0049 DNA AGGREGATES AS ALARMINS

D. Pisetsky. *Medicine, Duke University Medical Center, Durham, North Carolina, United States*

DNA is a large polymeric molecule that displays powerful immunological activities and operates in the context of multi-component aggregates to alarm the immune system and stimulate innate immunity. Although DNA has important roles in normal host defense, DNA can serve as an autoantigen and autoimmunogen by itself or in association with other immunologically active nuclear molecules. In the setting of systemic lupus erythematosus (SLE), DNA is a key target antigen; while antibodies to pure DNA double stranded DNA serve as important biomarkers, the relevant antigenic form of DNA during disease is the nucleosome in which DNA is bound to histones. Furthermore, nucleosomes can be components of microparticles which are small membrane-bound structures that are released from dead and dying cells. MPs can stimulate immune responses and serve as a nidus for immune complex formation. In normal immunity, DNA can interact with nucleic acid sensors in the cytoplasm of cells to stimulate responses including production of type 1 interferon. These sensors respond to DNA from intracellular organisms such as bacteria and viruses although damaged DNA and DNA from mitochondria can also interact with these receptors. While these sensors are intracellular, they can interact with extracellular DNA that is introduced or transfected into the cell; this translocation event occurs with DNA bound with other molecules. In another facet of host defense, DNA can be released from neutrophils during a process termed NETosis. A NET or neutrophil extracellular trap is a mesh-like structure comprised of DNA as well as granule proteins that have antibacterial activity. NETs can trap and kill bacteria. Thus, in its diverse immunological roles, DNA interacts with other molecules to form aggregates or sub-cellular structures that alarm the immune system, promote host defense or drive critical events in autoimmunity.

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THURSDAY, 15 JUNE 2017

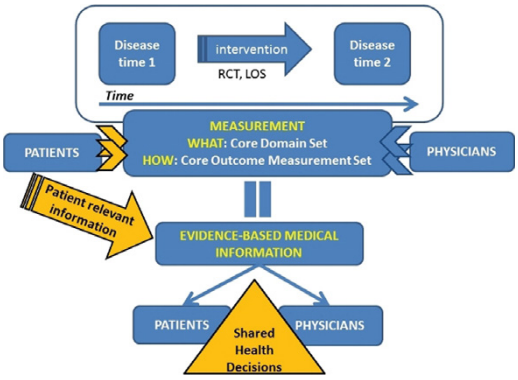
Bringing rheumatology research to the next level: addressing the main challenges of patient partnerships in research and health care service design

SP0050 ENSURING REPRESENTATIVENESS OF THE PATIENTS' PERSPECTIVES IN THE FINAL RESULTS GENERATED FROM CLINICAL RESEARCH – CHALLENGES FROM THE PERSPECTIVE OF RESEARCHERS

A.-M. Orbai on behalf of GRAPPA-OMERACT Psoriatic Arthritis Core Set Working Group. *Rheumatology, Johns Hopkins University School of Medicine, Baltimore, United States*

Now more than ever, patients are increasingly taking part in shared healthcare decisions with their physicians. Information from clinical research, on which evidence-based medicine draws upon, ideally needs to make sense to patients and not only physicians.

Representativeness of the patients' perspectives in the final results of clinical research is therefore critical for shaping the content and quality of medical knowledge and for shared clinical decision-making. As a result there is increased emphasis and even requirement from organizations around the world to include patient research partners (PRPs) as equal members in the medical research team. PRP inclusion means participation in research question generation, study design, data analysis/interpretation, authorship and results dissemination. Several questions remain: 1) How can we maximize the impact of the perspective patients bring to the table? 2) How can we ensure we capture the patients' perspective accurately and carry it forward into the final product of research? We can maximize impact and reach by including the patients' perspective in research that defines the way we assess disease and disease targeted interventions. Randomized controlled trials (RCTs) and longitudinal observational studies (LOS) are currently our main source of clinical information regarding efficacy of disease targeted interventions. Outcomes assessed in RCTs and LOS, as well as the health measurement tools used to assess these outcomes need to include the patient perspective in order for the information generated from these studies to be valid and usable. A conceptual diagram to illustrate how the patients' perspective is critical in generating health information for patient and physician shared decision making is represented in the Figure.



Case study: the updated Psoriatic Arthritis (PsA) Core Domain Set patient domains. A core domain set is the minimum set of outcomes that need to be assessed to evaluate the effect of disease targeted interventions. The first PsA core domain set was developed in 2006 by physicians and methodologists. The core set update study identified clinical trial outcomes important for patients as a group and for physicians as a group and reconciled both perspectives to recommend an updated PsA core domain set that represents the perspective of both patients and physicians. Five PRPs were members of the working group and contributed during all stages of the project. The perspective of patients was included as follows: a) domain generation through qualitative data collection and analysis from international focus groups; b) first domain prioritization exercise in electronic surveys with patients and physicians; c) a face to face nominal group technique meeting with 12 patients and 12 physicians to prioritize domains; d) second domain prioritization exercise through electronic surveys with patients and physicians; e) discussion and voting at the 2016 Outcome Measures in Rheumatology conference. During the process of achieving consensus we observed the following dynamic for patient prioritized domains (percentages represent proportions of patients ranking each domain important in the first survey and then the second survey): 1) Pain was rated important by 76% of patients in the first survey and 82% in the second survey and remained a core domain; 2) Fatigue 78% then 71% and became core domain; 3) Physical function 72% then 80% and remained a core domain; 4) Participation (daily activities and employment/work) was important to 72–76% of patients in the first survey and to 78% in the second survey and became a middle circle domain (important, not required); 5) Emotional well-being 60% then 57% and was placed in the middle circle; 6) Independence 82% then 63% and placed on the research agenda. In each of these situations the trend in the patient's vote as a group followed the physician's vote with one exception: the domain participation.

Summary of challenges and solutions for ensuring representativeness of the patients' perspective in the final results: Patients may change their views and align with physicians during the course of a research project. PRPs can help increase awareness of the patients' perspective throughout all stages of the research process. Special attention should be given to: 1) use of methods that adequately capture the patient perspective in the initial stages of a research project, and 2) allowing a robust patient perspective to take shape from patients as a group, before the consensus process with additional stakeholders begins. In addition, supporting patients with adequate information and materials and involving PRPs in their development will maximize understanding of the task for patients and their full participation.

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SP0051 BECOMING A PATIENT RESEARCH PARTNER IN THE FIELD OF RHEUMATOLOGY. MY EXPECTATIONS AND THE CHALLENGES OF BEING EDUCATED AND TAKEN SERIOUSLY

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Patients often feel that their experience of illness is not valued nor understood by others. However, there has been a growing recognition of the importance of the patient perspective and involvement in research, improving its methodology and outcomes. The European Medicines Agency has been involving patients' and consumers' representatives on their work since 2005. The "European League Against Rheumatism recommendations for the inclusion of patient representatives in scientific projects" have been published in the "Annals of the rheumatic diseases" in 2011.

I was diagnosed with Juvenile Idiopathic Arthritis when I was 5 years old, back in 1977. Therefore, I have 40 years of experience of living with a Rheumatic and Musculoskeletal Disease (RMD), but no recollection of what my life was like "before" and "after" the diagnosis. I have learned to live and cope with my RMD, with a sense of being different from my peers. This sense of "uniqueness" was