THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Spondyloarthritis and vasculitis – new perspectives on outcome

SP0044 WIN: VASCULITIS MAINTENANCE TREATMENT

Raashid Luqmani. University of Oxford, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Oxford, United Kingdom

Background: Cyclophosphamide and more recently rituximab have transformed the outcome for granulomatosis with polyangiitis (GPA) and microscopic polyangiitis (MPA), resulting in survival in most cases. However, patients are at risk of frequent relapses, low grade grumbling disease, drug toxicity and worsening co-morbidity. Historically, prolonged courses of cyclophosphamide (used for both induction and maintenance) increased the risk of malignancy (especially bladder cancer). More limited use of cyclophosphamide, or the use of other agents including rituximab or methotrexate (for milder forms) offer safer but still effective options. The high relapse risk in AAV (especially in GPA) means that maintenance therapy is necessary but there is uncertainty over the most effective, safe long term choice. Maintenance RTX (fixed dose at fixed intervals of 4-6 months) is superior to azathioprine, but it is not clear if combination maintenance is superior to RTX alone. Long term side effects of RTX include hypogammaglobulinaemia and potential for reactivation of JC virus. Reducing the glucocorticoid burden in AAV remains a challenge. We still do not know how long to continue therapy in AAV. Two recent studies provide conflicting opinion on the duration of maintenance therapy using azathioprine on risk of future relapse. The use of low doses of rituximab has recently explored in AAV: in thyroid eye disease, 100mg rituximab is effective. Less frequent dose intervals, as used in rheumatoid arthritis, will not control AAV. Future studies could address optimal long term management of patients with AAV, in order to improve their quality of survival and well-being.

Objectives: To assess the risk of relapse of vasculitis and to review the evidence for the use, effectiveness and toxicity of different maintenance strategies in systemic vasculitis

Methods: A review of published studies of long term outcome in vasculitis and of maintenance therapy in systemic vasculitis

Results: Once remission has been achieved, relapse is increasingly common, perhaps over 70% in some forms of ANCA associated vasculitis such as GPA. A strategy of induction therapy for one year, without any maintenance results in relapse in most cases of limited GPA. A maintenance regimen is recommended in order to avoid recurrence of the disease, but the evidence base for use of maintenance therapies remains limited. Maintenance is different from treatment of a relapse, usually aiming to prevent recurrence of clinical evidence of disease. We will show the evidence for different types of maintenance regimens and the outcomes in terms of relapse and toxicity with a focus on recently completed clinical trials and observational cohorts in a variety of forms of systemic vasculitis

Conclusion: The management disease in systemic vasculitis requires induction therapy but increasingly recognised is the importance of a maintenance regimen. Current and future strategies should explore a mechanism based approach, to selectively modify the underlying immunopathogenic mechanisms.

REFERENCES:

- [1] De Groot K, Rasmussen N, Bacon PA, Tervaert JW, Feighery C, Gregorini G, Gross WL, Luqmani R, Jayne DR. Randomized trial of cyclophosphamide versus methotrexate for induction of remission in early systemic antineutrophil cytoplasmic antibody-associated vasculitis. *Arthritis Rheum*. 2005 Aug;52(8):2461-9.
- [2] Flossmann O, Berden A, de Groot K, Hagen C, Harper L, Heijl C, Höglund P, Jayne D, Luqmani R, Mahr A, Mukhtyar C, Pusey C, Rasmussen N, Stegeman C, Walsh M, Westman K; European Vasculitis Study Group. Long-term patient survival in ANCA-associated vasculitis. *Ann Rheum Dis*. 2011 Mar;70(3):488-94.
- [3] Jayne D, Blockmans D, Luqmani R, Moiseev S, Ji B, Green Y, Hall L, Roth D, Henderson RB, Merkel PA; Collaborators, Lozano JA, Becker H, Quiroz AC, Carette S, Carrillo-Vazquez S, Cid MC, D'Cruz D, Deodhar A, Flossman O, Garibotto G, Gesualdo L, Hall S, Hauser T, Hellmich B, Kidder D, Kimmel M, Little M, Majdan M, Maksimowicz-McKinnon K, Marder G, Matsievskaja G, Meneses AS, Molloy E, Mueller R, Neuwelt C, Hernandez JR, Specks U, Tesar V, Walsh M. Efficacy and Safety of Belimumab and Azathioprine for Maintenance of Remission in ANCA-Associated Vasculitis: A Randomized Controlled Study. *Arthritis Rheumatol*. 2019 Jan 22.

Disclosure of Interests: Raashid Luqmani Grant/research support from: Roche, Vifor and GSK

DOI: 10.1136/annrheumdis-2019-eular.8529

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Can imaging improve outcome in OA?

SP0045 CAN IMAGING PREDICT PROGRESSORS?

Jean-Pierre Raynaud. Institut de Rhumatologie de Montreal, Medicine, Montreal, Canada

Osteoarthritis (OA) is a highly heterogeneous disease with varying aetiologies, thus the manifestations of knee OA and response to treatment vary. This heterogeneity of clinical presentation and treatment response confounds interpretation of therapeutic clinical trials and complicates the care decisions for clinicians. Identifying factors to define patient profiles likely to progress more rapidly over time may help with subsequent therapeutic decision-making. Such characterisation could also help randomization strategies for clinical trials in attempting to balance comparator groups. Reasonable long-term goals among these rapid progressors would be to offer optimal quality of life and to postpone, if possible, the indication of joint replacement.

Quantitative magnetic resonance imaging (qMRI) can precisely and accurately assess and quantify joint structural changes seen in OA. Such technology should logically help to identify patients with rapid OA progression and some of its predictors. This short presentation shall address whether MRI structural markers can be used to predict knee OA patient hard outcomes such as the total joint replacement. Data revealed that several articular tissue alterations have shown their potential for predicting patients with a rapid progression; global cartilage thickness/volume loss, presence and severity of meniscal damage, bone curvature, and presence of bone marrow lesions among others. However, clinical and demographics variables such as BMI, severe pain, and clinical knee synovitis and effusion are also strongly associated with articular tissue damage and should also be taken into careful consideration as they may independently also predict OA progression and potentially indication of joint replacement.

Optimizing the selection of patients for whom an intervention with a DMOAD could prevent the development of the disease should lead to better response to treatment. Imaging may assist us at identifying the rapid progressors but should be used in a context of an overall patient assessment that also integrate the co-existing demographic and clinical variables. Such context may assist us in the emergence of personalized or precision medicine for patients suffering from this disease.

Disclosure of Interests: Jean-Pierre Raynaud Consultant for: ArthroLab Inc.

DOI: 10.1136/annrheumdis-2019-eular.8571

SP0046 CAN IMAGING MONITOR/DEMONSTRATE TREATMENT RESPONSE IN OA?

Felix Eckstein. Institute of Anatomy, Paracelsus Medical University, Imaging and Functional Musculoskeletal Research, Salzburg, Austria

Background: Treatment for osteoarthritis (OA) should ideally not be limited to ameliorating symptoms, but should include the modification of synovial joint structures that are involved in the disease process (disease modification). Imaging, particularly MRI, has unparalleled ability to evaluate joint structures qualitatively or quantitatively.

Objectives: To discuss 1) Why one should care about structure (and its modification) in OA, 2) Which joint structures may be most relevant to modify, 3) Why quantification of tissue structure is beneficial, 4) To what extent tissue structure in OA can currently be modified by intervention, and 5) Whether translation of structure modification to clinical benefits is realistic?

Methods: Narrative literature review.

Results: A public meeting for the FDA, organized by the Arthritis Foundation in March 2017, concluded that "most importantly, patients want therapies which stop progression whilst alleviating pain and improving function, yet stopping disease progression is their utmost concern and desire for new therapies". Despite other notions, there is good evidence that structural damage of synovial tissues is related to joint pain. Quantification of synovial tissue from serial MRIs can detect longitudinal changes that are too small to be detected by the naked eye. There exist surgical (e.g. joint distraction¹ and high tibial osteotomy), and pharmacological approaches are in development (e.g. FGF 18 or sprifermin²), to modify joint structure. Finally, structural change of joint tissues has been shown to be related to knee replacement (KR) as a hard clinical outcome³.

Conclusion: Quantitative imaging has become a powerful tool for demonstrating structure modification (treatment response) in OA. This may hopefully lead to regulatory approval of disease modifying therapy for OA in the not too distant future.

REFERENCES:

- [1] van der Woude JAD, et al. *Cartilage* 2017: 263

- [2] Hochberg M, et al. Osteoarthritis and Cartilage 2018; 26, S26-S27 [abstract]
 [3] Eckstein et al. European Radiology 2016: 1942

Disclosure of Interests: Felix Eckstein Shareholder of: Shareholder of Chondrometrics GmbH, Consultant for: Consulting fees from Merck KGaA, Samumed LLC, Abbvie, Bioclinica, TissueGene, Servier, and Roche, Employee of: Employee of Chondrometrics GmbH

DOI: 10.1136/annrheumdis-2019-eular.8466

SP0047 NEW IMAGING TECHNOLOGIES IN OA: WHERE ARE THE ADDED VALUES?

Philip G Conaghan. University of Leeds, Leeds Institute of Rheumatic and Musculoskeletal Medicine, Leeds, United Kingdom

The exact role for new imaging technologies in osteoarthritis (OA) depends in part on the setting (clinical trials or routine care) and also on the tissues we decide are important to be studied.

In clinical practice, modern imaging such as ultrasound provides a useful adjunct for patients where there is diagnostic uncertainty - the EULAR recommendations for the use of imaging in the clinical management of peripheral joint OA provide an evidence-based background to this use of imaging. The impact of imaging is minimal in guiding choice of therapy as our therapeutic options (outside of surgery) are very limited.

In clinical studies and trials, there are a number of imaging modalities that provide insights into a range of OA tissues, for both quantification and characterisation. Most techniques have been based on MRI because of its soft-tissue advantages. In OA trials, MRI-based quantification methods provide improved responsiveness advantages over semi-quantitative scores, which have served an important role in highlighting the multi-tissue nature of OA and frequency of pathology. Using appropriate sequences, manual segmentation of cartilage or contrast-enhancing synovitis can be quantified, and dynamic-contrast enhanced images can also be used to provide volumetric and pharmacokinetic assessments of the synovium. Using such information, we now know how to power studies for cartilage thickness endpoints.

A number of MRI techniques have been developed to study cartilage composition, such as T2mapping and T1rho. They have provided insights into structural deterioration, but are limited by technical aspects which make them difficult to apply in multicentre clinical trials.

Artificial intelligence and supervised machine learning have promised much in medicine, but in MSK imaging there has been some useful applications. Early technology applied 2D statistical shape models (SSMs) to X-rays, usually of the hip, providing novel information on bone shape. However the advent of 3D MRI or CT-based SSM technology has provided the ability to do automated quantification of large OA datasets. One of the most interesting tissues studied to date has been 3D bone shape. Studies have shown changes in bone shape are more responsive than radiographic joint space narrowing or even MRI quantitative cartilage thickness, predict incident radiographic OA, and that bone shape is associated with subsequent joint replacement. Recent work has shown a relationship between bone shape and bone marrow lesions, though these likely represent different elements of subchondral bone pathology. Work is just beginning on other relevant tissues such as the meniscus, and on other OA joints.

Disclosure of Interests: Philip G Conaghan Consultant for: Flexion Therapeutics, AbbVie, Medivir, Merck Serono, Novartis, GlaxoSmithKline

DOI: 10.1136/annrheumdis-2019-eular.8449

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Can drugs and surgery help people with joint pain increase activity?

SP0048 CASE 1 PRESENTER: ALL THESE PAINKILLERS AND STILL NOT GOING ANYWHERE

Kristine Røren Nordén. Diakonhjemmet hospital, Norwegian National Advisory Unit on Rehabilitation in Rheumatology and Norwegian National Unit for Rehabilitation for Rheumatic Patients with Special Needs, Oslo, Norway

Background: The session will present a case history of a 24 year-old male presenting with axial Spondyloarthritis and extensive pain problems. He had been treated with biological medication for a while, had a low inflammatory burden, but experienced persistent pain. Furthermore, he was on sick leave from his job as an electrician and had a very low physical activity level. The patient was admitted for a 3-week in-patient rehabilitation stay at the Norwegian National Unit for

Rehabilitation for Rheumatic Patients with Special Needs. The unit offers person-centered, specialized interdisciplinary in-patient rehabilitation for patients with inflammatory rheumatic disease. Target group is patients with complex illness challenges and increasing function- or activity problems.

The rehabilitation was planned and organized through close cooperation between the patient and the specialized interdisciplinary team. Relationship between analgesics, pain and physical activity was a central issue in the rehabilitation process. The session will outline the patient response to comprehensive treatment modalities including changes in medication and participation in physical activity and exercise.

Objectives:

- To present the patient history
- To present results of the interdisciplinary examination
- To present the patient's specific goals for the rehabilitation process
- To present experiences with pharmacological and non-pharmacological treatment modalities for this patient

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8576

SP0049 CASE 1 DISCUSSANT: DISCUSSION OF HOW ANALGESIC USE RARELY PROVIDES COMPLETE PAIN RELIEF, IS NOT SUFFICIENT TO ENABLE ACTIVITY, MAY BE A BARRIER TO ACTIVITY, AND CAN DETRACT FROM OTHER EFFECTIVE INTERVENTIONS

Silje Halvorsen Sveaas. Diakonhjemmet Hospital, Norwegian National Advisory Unit on Rehabilitation in Rheumatology, Oslo, Norway

All these painkillers and still not going anywhere: Pain is the cardinal symptom of rheumatic diseases, and is reported as the most important health aspect for this patient group.¹ Hence, analgesics is a part of the management for many patients with rheumatic diseases. Pain may be a barrier for physical activity,² and patients with rheumatic diseases is reported to have a lower physical activity level than the general population.³

At the same time, it is well known that physical activity has many benefits for this patient group. Physical activity may lower the burden of the disease⁴, may prevent co-morbidities such as cardiovascular diseases, diabetes and osteoporosis, and has beneficial effects on psychological health.^{2,3} The aim of this lesson will be to present a case history of a patient with extensive pain problems and discuss the treatment options based on relationship between analgesics, pain and physical activity.

Objectives:

- To discuss the effect of analgesics on activity
- To discuss the use of painkillers in connection with exercise
- To discuss pain tolerance during exercise
- To discuss the effect of physical activity on pain

REFERENCES:

- [1] Heiberg T, Lie E, van der Heijde D, Kvien TK. Sleep problems are of higher priority for improvement for patients with ankylosing spondylitis than for patients with other inflammatory arthropathies. *Ann Rheum Dis.* 2011;70(5):872-873.
- [2] Rausch Osthoff AK, Niedermann K, Braun J, et al. 2018 EULAR recommendations for physical activity in people with inflammatory arthritis and osteoarthritis. *Ann Rheum Dis.* 2018;77(9):1251-1260.
- [3] Cook MJ, Bellou E, Bowes J, et al. The prevalence of co-morbidities and their impact on physical activity in people with inflammatory rheumatic diseases compared with the general population: results from the UK Biobank. *Rheumatology (Oxford, England).* 2018;57(12):2172-2182.
- [4] Sveaas SH, Smedslund G, Hagen KB, Dagfinrud H. Effect of cardiorespiratory and strength exercises on disease activity in patients with inflammatory rheumatic diseases: a systematic review and meta-analysis. *Br. J. Sports Med.* 2017;51(14):1065-1072.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8598

SP0050 CASE 2 PRESENTER: SITTING AROUND ON A NEW JOINT

Maaïke Gademan. LUMC, Orthopaedics and Clinical Epidemiology, Leiden, Netherlands

The end-stage treatment for hip and knee osteoarthritis is arthroplasty. The main aims of this treatment are to improve pain and joint functioning. It is thereby conceivable that patients should become more physically active after surgery.