from TNFi treatment than patients with an active T/NK-cell component. This proof-of-concept study establishes a new framework to explore patient stratification in chronic inflammatory diseases according to the patients' immune phenotype.

REFERENCE:

- [1] Duffy, D., et al. Functional Analysis via Standardized Whole-Blood Stimulation Systems Defines the Boundaries of a Healthy Immune Response to Complex Stimuli. *Immunity* 40, 436-450 (2014).

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8574

SP0055

CLINICAL MULTI-OMICS

Timothy R. Radstake. *University Medical Center Utrecht, Netherlands*

It is becoming clear that the field of medicine needs to change to stay affordable. One way of doing that is by optimizing the patients journey with true personalized medicine approaches. In other words, how to give every patient the right drug, at the right moment for the optimal duration. Recent advances in molecular techniques have truly revolutionized research into molecular fingerprinting – classification of clinical phenomena on the basis of a molecular basis rather than a diagnosis based on organ, symptoms or clinical criteria. This makes personalized medicine reachable within the coming years.

In my presentation I will dive in to the various molecular technologies (multi-omics) to achieve molecular fingerprinting of patients. Next, I will explain the computational techniques necessary to process the big data originating from the molecular processes enabling researchers to visualize big data from clinicians and patients. Finally, I will provide several examples of how these exercises might improve care for patients covering the space of rheumatic and musculoskeletal diseases (RMDs).

At the end of my presentation I will show how big data can be used for drug discovery, immune monitoring in clinical trials and/or daily clinical practice as well as drug repurposing. Together, I will provide a glimpse of the future on personalized healthcare within the field of RMDs.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8567

SP0056

MAPPING GENES TO IMMUNE CELLS

Kazuhiko Yamamoto. *RIKEN Center for Integrative Medical Sciences, Laboratory for Autoimmune Diseases, Yokohama, Japan*

Background: Many disease susceptibility variants have been recently identified by genome wide association study (GWAS). Germline genetic variations exist before the disease onset and provide us with evidence into the causal relationship of the observed phenomenon and their pathogenesis. In this regards, the majority of GWAS risk variants have been found to function as an expression-quantitative trait locus (e-QTL).

Objectives: We need functional studies aiming at determining the causal genetic variants uncovered by GWAS and finding biological mechanisms underlying the observed statistical associations.

Methods: We established a system to evaluate various subtypes of leukocytes from peripheral blood mononuclear cells (PBMC) from healthy individuals. PBMC are separated with a fluorescence activated cell sorter and are analyzed in a steady state or activated conditions to capture the dynamic responses of gene regulation. Genotyping, RNA-seq, assay for transposase-accessible chromatin using sequencing (ATAC-seq) are performed on each subset. To further investigate the genetic determinants of promotor and enhancer activities, we also perform Cap Analysis of Gene Expression (CAGE) on the corresponding samples. CAGE is a technology developed in our research center RIKEN in Japan. It relies on random priming and cap-trapping of cDNAs to capture the 5' ends of both polyadenylated and non-polyadenylated RNA transcripts. It thus enables genome-wide identification of transcription start sites (TSSs), which could be used as a portal to annotate and measure the activity of promoters and enhancers (Carninci P. et al Science 2005, Forrest ARR. et al Nature 2014 and other publications of the FANTOM project). Using CAGE, we can map the promoters, enhancers and lncRNAs active in each leukocyte subtypes and correlate their activities with genetic variants.

Results: I will present our ongoing data.

REFERENCES:

- [1] Okada Y, et al. Genetics of rheumatoid arthritis contributes to biology and drug discovery. *Nature* 2014;506:376-381.
[2] Ishigaki K, et al. Polygenic burdens on cell-specific pathways underlie the risk of rheumatoid arthritis. *Nat Genet* 2017;49:1120-1125.

Disclosure of Interests: Kazuhiko Yamamoto Grant/research support from: Astellas, BMS, Daiichi-Sankyo, Mitsubishi Tanabe, Pfizer, Ayumi, Takeda, Chugai, Eisai, Taisho Toyama, UCB, Janssen, Eli Lilly, and NIPPON KAYAKU., Speakers bureau: Astellas, BMS, Daiichi-Sankyo, Mitsubishi Tanabe, Pfizer, Ayumi, Takeda, Chugai, Eisai, Taisho Toyama, UCB, Janssen, Eli Lilly, and NIPPON KAYAKU.

DOI: 10.1136/annrheumdis-2019-eular.8623

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Adults are just grown up children! Discuss

SP0057

EVERYTHING STARTS IN CHILDHOOD!

Berent J. Prakken. *University Medical Center Utrecht, Biomedical education, Utrecht, Netherlands*

Background: While part of our future may be determined by our genes, the interaction of our immune system with the environment is crucial for the balance between health and disease. Most of these crucial interaction take place in the early years of life during which the developing immune system settles between self and non-self; danger and non danger or whatever paradigm you may want to apply. This early flexibility and early interactions between developing immunity and the environment hold the key for a health future; and ultimately will be the most effective way for true (very!) early prevention of chronic inflammatory disorders.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8563

SP0058

GROWING UP CHANGES EVERYTHING!

Iain McInnes. *University of Glasgow, Institute of Infection, Immunity, and Inflammation, Glasgow, United Kingdom*

Background: There is increasing interest in understanding the impact of age upon the emergence and clinical impact of immune mediated inflammatory diseases. In this lecture I will consider the similarities and distinctions between the presentation of inflammatory arthritis in children and adults.

Disclosure of Interests: Iain McInnes Grant/research support from: AstraZeneca, Celgene, Compugen, Novartis, Roche, UCB Pharma, Consultant for: AbbVie, Celgene, Galvani, Lilly, Novartis, Pfizer, UCB Pharma

DOI: 10.1136/annrheumdis-2019-eular.8535

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Exercise – more than a wonderdrug

SP0059

HELPING PEOPLE MAINTAIN PHYSICAL ACTIVITY

Keegan Knittle. *University of Helsinki, Faculty of Social Sciences, Helsinki, Finland*

Background: Regular physical activity (PA) has clear benefits for individuals with rheumatic diseases, but PA levels among these individuals consistently fall below recommended levels. While interventions to increase PA are often successful in the short term, these effects are not generally maintained over time. Therefore, to be able to optimally support PA maintenance, rheumatology health professionals should be familiar with the relevant theory and evidence base for behavioral maintenance.

Objectives: This talk will outline several psychological theories of behavioral maintenance, and present evidence on the interventions and behavior change techniques most strongly associated with physical activity maintenance.

Methods: A review of the most recent and relevant health psychology and behavioral science literature surrounding issues of physical activity maintenance, particularly among individuals with rheumatic conditions.

Results: Theories of behavioral maintenance focus on social and environmental influences, motives, resources, self-regulation, and habits. Several studies will be presented to highlight the influence of these theoretical domains in PA maintenance among individuals with rheumatic disease. Physical activity interventions which specifically target these theoretical domains have the greatest likelihood to produce PA maintenance, and several case studies from successful interventions will be presented.

Conclusions: While helping patients to maintain PA is always a challenge, especially in the face of degenerative or progressive arthropathies, behavioral science

can offer health professionals in rheumatology some theory and evidence-based methods to support PA maintenance in practice.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8517

SP0060 TOWARDS OPTIMAL INTENSITY

George Metsios. *University of Glasgow, Institute of Infection, Immunity, and Inflammation, Glasgow, United Kingdom*

Background: There is ample evidence now to suggest that exercise can help ameliorate RMD symptoms and comorbidities. Similar to the prescription of medication, the dosage of exercise should be optimized to achieve the best health benefits. However, a consensus on the dosage of exercise prescription for RMD patients is currently missing.

Objectives: This talk will explore the data required from RMD patients to develop the best exercise prescription, exercise principles and current state-of-the-art, as well as how we can use the current evidence to identify the optimum dosage for the exercise prescription in people with RMDs.

Methods: Suggestions have been synthesized using existing evidence-based resources, including recent systematic reviews and meta-analyses (EULAR, Cochrane Library and peer-reviewed journals publications) as well as randomized controlled trials. Data for the effectiveness of exercise dosage on various different outcomes has been extracted and will be explored.

Results: Different dosages of exercise have differing effects on symptoms of RMDs. The optimal dosage depends on various factors and on the outcome that the exercise prescription aims to improve.

Conclusion: Despite the increasing research on exercise in RMDs, a currently a consensus for the optimal exercise dosage is currently missing. More interdisciplinary research, with a heavy patient involvement, is required in the area.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8537

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Getting a grip on the co-morbidities in gout

SP0061 GOUT AND ASSOCIATED CO-MORBIDITIES – RELEVANCE TO CLINICAL PRACTICE

Edward Roddy. *Keele University, Research Institute for Primary Care and Health Sciences, Keele, United Kingdom*

Patients with gout very commonly have multiple co-existent comorbidities. Associations between gout and hypertension, obesity, chronic kidney disease and cardiovascular disease have long been recognised whereas several new comorbid disease associations, such as sleep apnoea and mental health problems, have been described more recently, including lower risk of neurodegenerative diseases. These associations are complex with some comorbidities such as obesity and sleep apnoea predisposing to the development of gout, whereas gout is a risk factor for incident cardiovascular disease and erectile dysfunction. The management of gout is often more complex in the presence of comorbidity and can present a significant therapeutic challenge. This talk will provide an update on the comorbidities that are associated with gout and discuss their implications for the management of gout, in particular for long-term urate-lowering therapy.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8572

SP0062 CARDIOVASCULAR MORBIDITY AND GOUT – FROM EPIDEMIOLOGY TO THERAPY

Mariano Andrés. *Hospital General Universitario de Alicante-ISABIAL, Sección de Reumatología, Alicante, Spain*

Gout is an independent cardiovascular risk factor. Patients suffering from gout show a higher incidence of all forms of the atherosclerotic disease, as well as cardiovascular and all-cause mortality. This associates with both comorbidities and urate crystal-led inflammation. Thus, gout, along with being the most common form of inflammatory arthritis in rich countries, carries with significant morbidity and mortality. Proper management is essential. The purpose of this lecture is to analyze the potential strategies aimed to control the cardiovascular risk in patients with gout.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8419

THURSDAY, 13 JUNE 2019

13:30:00 – 15:00:00

Treatment is more than drugs

SP0063 NUTRITION AND RHEUMATIC DISEASES

Elena Philippou. *University of Nicosia, Life and Health Sciences, Nicosia, Cyprus*

Background: Nutritional therapy could be a promising adjunct to pharmacological therapy in rheumatic disease (RMD).

Objectives: The aim of this talk is to provide evidence and recommendations on dietary management of rheumatoid arthritis, ankylosing spondylitis, systemic lupus erythematosus, psoriatic arthritis and osteoarthritis.

Methods: Research studies, systematic reviews and recommendations associating diet and RMDs were identified through MEDLINE.

Results: Maintenance or achievement of a healthy body weight is central to RMDs since weight gain is common and often results as a side-effect of pharmacotherapy, further increasing inflammation. Adherence to the Mediterranean diet (MD) by consumption of plant-based foods such as wholegrains, legumes, fruit, vegetables, daily consumption of extra virgin olive oil, and reduced (monthly) consumption of red meat and desserts, is beneficial for all RMDs. The MD should be supplemented with extra omega-3 polyunsaturated fatty acids (PUFAs) and thus consumption of 'fatty fish' such as seabream, seabass, trout, salmon, sardines or mackerel ≥ 2 /week, and walnuts, flaxseeds and chia seeds, daily is recommended, all providing different kinds of omega-3 fatty acids. The MD not only provides all the necessary vitamins and minerals with a balanced ratio of MUFA: PUFA to reduce inflammation, but also has long term benefits on the cardiovascular system. Additional recommendations to manage high cholesterol, include the consumption of plant stanols/sterols, oats, unsalted nuts and soy protein and limiting intake of foods high in saturated and trans fats. It is also recommended that plasma Vitamin D concentration, important for bone and cartilage health, is assessed and a daily supplement is taken if necessary especially during the winter months. Additionally, it is important to consume enough calcium daily, this being equivalent to 3-4 glasses of milk or slices of cheese (preferably low in fat). Finally, evidence on possible relationships between RMDs and diet is limited and inconclusive and dietary restrictions are not recommended. In psoriatic arthritis, a gluten-free diet is recommended only in patients who test positive for serologic markers of gluten sensitivity. Use of unnecessary supplements should be avoided.

Conclusion: In conclusion, adherence to a healthy diet can aid in disease management in RMDs by reducing inflammation and the risk of cardiovascular disease.

REFERENCES:

- [1] Aparicio-Soto M, Sánchez-Hidalgo M and Alarcon-de-la Lastra C (2017) An update on diet and nutritional factors in systemic lupus erythematosus management *Nutrition Research Reviews* 30:118-137
- [2] British Dietetic Association (2017) Diet and Osteoarthritis. Available at: <https://www.bda.uk.com/foodfacts/OsteoArthritis.pdf>. Accessed: 1.3.19
- [3] Ford AR, Siegel M, Bagel J, et al. (2018) Dietary Recommendations for Adults With Psoriasis or Psoriatic Arthritis From the Medical Board of the National Psoriasis Foundation: A Systematic Review. *JAMA Dermatol*. doi:10.1001/jamadermatol.2018.1412.
- [4] Macfarlane TV, Abboud HM, Pathan E, et al. (2018) Relationship between diet and ankylosing spondylitis: a systematic review. *European Journal of Rheumatology* 5: 45-52.
- [5] Petersson S*, Philippou E*, Rodomar C, Nikiphorou E. (2018) The Mediterranean diet, fish oil supplements and Rheumatoid arthritis outcomes: evidence from clinical trials. *Autoimmunity Reviews* 17(11):1105 (*joint first authors).

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8559

SP0064 AKTIV-HOCH-R – COMBINING EXERCISE AND FUN

Nicole Stefan-Schick. *Deutsche Rheuma-Liga Bundesverband e.V., Physical activity, 53111 Bonn, Germany*

Treatment is more than drugs: People with rheumatic diseases know about the health benefits of physical activity. But many studies show that integrating regular exercise into daily life is not always as easy as it seems, especially while experiencing rheumatic pain and feeling physical limitations.

Therefore the German Rheumatism League developed in association with leading experts in sports science and rehabilitation, at the Erlangen-Nürnberg University in Germany, "aktiv-hoch-r".