spend a substantial amount of their time and able to travel frequently, is another obstacle to overcome.

This presentation provides some examples of the involvement in Health Technology Assessments of the German Rheumatism League, Germany's largest patient organisation with about 3 00 000 members, and the essential prerequisites for the participation of patient organisations in that process.

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EULAR Projects in investigative rheumatology

SP0110 AUTOANTIBODY STANDARDISATION IN RHEUMATIC DISEASES. THE ROLE OF THE EUROPEAN CONSENSUS FINDING STUDY GROUP ON AUTOANTIBODIES IN RHEUMATIC DISEASES (ECFSG)

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The aim of the European Consensus Finding Study Group on autoantibodies in rheumatic diseases (ECFSG), a.k.a the EULAR autoantibody study group, is to achieve a common consensus in autoantibody diagnostics: a laboratory result should be the same, independent of the country or laboratory where the result is obtained. Since 1988, the ECFSG has yearly distributed unknown sera to European laboratories (presently 43) for evaluation in a clinical context. These sera are chosen to reveal differences between different laboratories. The results are discussed in conjunction to the European Workshop for Rheumatology Research (EWRR) every year. Use of reference materials helps to align test results by adopting internationally used measurement units, but reference materials are missing for many autoantibody specificities. Since 2014 an ECFSG focus has been on evaluating samples that might constitute new reference materials for companies producing autoantibody measurement assays, as well as for clinical laboratories. Hitherto investigated autoantibody specificities are provided in the table 1. In my talk I will present the work of ECFSG, including the characterisation of the samples that have constituted raw material for currently available reference materials. I will also tell about our first characterisation of a tentative new reagent sample, that thereafter was produced as reference material by the National Institute of Biological Standards and Control (NIBCS) in the UK. In November 2017 that reagent was endorsed by the World Health Organisation (WHO) to become the new international reference reagent for anti-double stranded DNA (anti-dsDNA) antibodies.

Abstract SP0110 – Table 1. Hitherto tested tentative or now existing reference reagents

2014	anti-dsDNA (now publicly available WHO standard, NIBSC 15/174)
2015	ACPA
2016	anti-PR3 (standard available from the EU Science Hub, ERM-DA483/IFCC)
2016	anti-MPO (standard available from the EU Science Hub, ERM-DA476/IFCC)
2016	IgG anti-b2GP1
2017	anti-GBM
2018	anti-DFS70

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SP0111 HOW NEURO ENDOCRINE IMMUNOLOGY IMPACT RHEUMATIC DISEASES?

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The Neuro Endocrine Immune Network (NEI) is the most important communication-system in human body to maintain the health status. NEIRD evaluate the relationships between NEI and Rheumatic and Musculoskeletal Diseases (RMDs). The altered interaction between the nervous system, the immune/inflammatory cells and the endocrine system plays an important role in the pathophysiology of autoimmunity and chronic inflammation. The involvement of the adrenal steroid

hormones in the immune response is fundamental and follow a circadian rhythm (circadian rhythm studies obtained the Nobel Prize for Medicine in 2017). As Matter of fact, the nocturnal ability of the NEI system to mount an efficient immune and inflammatory response, with related clinical consequences, is matter of important chronotherapeutic approaches with exogenous steroids, in particular with glucocorticoids (GCs) (their discovery obtained the Nobel Prize in 1950 and still a pillar in the treatment of RMDs and not only). Other important steroid hormones involved in the NEI are the sex hormones (estrogens. E2 OH-metabolites are potent enhancers of cell proliferation) and the d-hormone (steroidal hormone structure of the final metabolite of Vitamin D). Clinical observations indicate a strong influence of the neuroendocrine system on immune function and *vice versa* in chronic inflammatory rheumatic diseases. The influence of hormones and neuronal pathways happens before and after the outbreak of the disease. Very recent data demonstrate the modulatory role of estrogens on epigenetic mechanisms (ie DNA methylation and gene upregulation). For example differentially expressed miRNA pathways linked to E2 in human endothelial cells through ER have been shown, and provide new insights by which oestrogen can modulate endothelial function. This point might be crucial in autoimmune diseases like systemic sclerosis (SSc) a disease prevalent in females and that start from damaged endothelium. We have started a large study on epigenetic and pregnancy on patients with RMDs such as rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). On the other hand, the disease process with an activated immune system influences several hormonal and neuronal pathways. In addition, the energy bottleneck leads to important disease sequelae such as sickness behaviour/fatigue/depressive symptoms, sleep disturbances, anorexia and malnutrition, bone loss, muscle wasting and cachectic obesity, insulin resistance with hyperinsulinemia (insulin-like growth factor-1 resistance), dyslipidemia, alterations of steroid hormone axes, disturbances of the hypothalamic-pituitary-gonadal (HPG) axis, elevated sympathetic tone, hypertension and volume overload, decreased parasympathetic tone, inflammation-related anaemia, and finally circadian (circannual) rhythms of symptoms. New therapeutic strategies should respect these findings because rheumatic patients die earlier due to the mentioned disease sequelae. It is suggested that disease sequelae must be treated more consequently because they are inherent to chronic inflammatory systemic diseases (possible evolution for some of them in cancer). Therapeutic strategies in this field of NEIRD are slowly developing. Low-dose glucocorticoid therapy as supplementation of the "small adrenal engine", chronotherapy with glucocorticoids (night release) and vitamin D supplementation are the best examples of the successful utilisation of demonstrated concepts.

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SP0112 MICROCIRCULATION IN RHEUMATIC DISEASES

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Background: The EULAR Study Group on Microcirculation in Rheumatic Diseases (SG MC/RD) aims to build an international network of expert centres to facilitate and exchange knowledge. It is a non-profit group and has no financial support. Both altered microvascular morphology and peripheral flow are the main focus of research.

Objectives: 1) To integrate different expertises to study the pathophysiology of disease processes. 2) To exchange knowledge and to facilitate standardisation concerning different techniques to assess the (micro)circulation such as nailfold capillaroscopy, laser doppler and laser speckle contrast analysis (LASCA). 3) To elaborate predictive indexes for disease progression and follow-up based on the integration of different tools and biomarkers. 4) To develop intervention protocols based upon an understanding of and targeting disease mechanisms (i.e. microvascular damage progression to fibrosis).

Methods: The EULAR SG MC/RD was accepted by the EULAR Executive committee in March 2014 and is being supervised by the EULAR Committee on Investigative Rheumatology, currently chaired by Prof. X. Mariette. Anno 2018 the number of members has risen to 79 (out of which 26 from 14 non-European countries). The EULAR study group meets half yearly (every EULAR/ACR) and