Research Networking Programmes

Science Meeting – Scientific Report

The scientific report (WORD or PDF file - maximum of seven A4 pages) should be submitted online within two months of the event. It will be published on the ESF website.

***Proposal Title**: 1st international conference on myositis*

Application Reference N°: 5893

1) Summary (up to one page)

The ”1st International Conference on myositis” 2015, was arranged 8-11h of May 2015 in Stockholm with professor Ingrid Lundberg at Department of Medicine, Rheumatology Unit, Karolinska Institutet, and the rheumatology clinic at Karolinska University Hospital, as host. This first, stand-alone, international conference on the subject of myositis was a dream for many investigators working with myositis and the conference attracted a mere of 150 participants from a total of 22 countries. During the conference research results and experience were shared and there were lively discussions on how to optimize the myositis network collaboration in the future.

Professor Ingrid Lundberg is the initiator of MyoNet, a unique international, interdisciplinary network involving neurologists, rheumatologists, neuropathologists, dermatologists, pediatric rheumatologists, basic scientists and statisticians, and with experts in genetics, proteomics, epidemiology and clinics who work together to develop understanding on the pathogenesis on myositis in order to improve life for patients with this disease. .

The fact that myositis is a rare disease with an incidence about 5-10 cases per million inhabitants constitutes difficulties in clinical research. The MyoNet collaboration continuously work towards joining data and information from centers worldwide to understand pathogenesis and determine treatment strategies. This aim requires that all centers involved need to work towards standardization of sampling and clinical data, which was largely discussed during the conference. MyoNet is a network where young investigators and students to a large extent are encouraged to contribute by presenting data and discuss with colleagues and mentors.

MyoNet was enabled by a venture from European Science Foundation, ESF, which in 2010 granted funding for a myositis program. Eight nations are members of the network but 19 countries in total are affiliated mainly by engagement in the database registry. (www.euromyositis.eu).

2+3) Description of the scientific content of and discussions at the event (up to four pages) Assessment of the results and impact of the event on the future directions of the field (up to two pages)

First international conference on myositis that took place the 8-11th of May 2015 intended to gather, for the very first time, scientists working with the rheumatic disease of chronic muscle inflammation – myositis. One hundred and fifty participants from 22 countries met in Stockholm to exchange knowledge and ideas, to establish new collaborations and make new friends. Among the participants there were many students and young doctors as well as patient representatives. This rare disease has over the years been a sub-topic within larger congregations in rheumatology, neurology and dermatology but the engagement of representatives from different clinical disciplines at a stand-alone symposium was a dream of many investigators in this field.

The program highlighted topics both within basic science as well as clinical research, diagnostics and clinical care. The symposium opened with two parallel workshops on genetics and on the international myositis registry, Euromyositis. Both sessions were highly interactive with suggestions on how to circumvent the major obstacles on how to achieve reliable data to backup research findings, namely the rareness of the disease not generating enough power to the statistics. Suggestions that came up were about sample and data collection standardization, discussions around national differences in informed consent, the heterogeneity of the disease with many different phenotypes within the myositis diagnosis, the importance to carefully phenotype patients such as additional organ involvement, trans-ethnicity studies and cross disease comparisons was emphasized. The global myositis network, www.myonet.eu, brings many centers worldwide together thus adding patients and information to work towards the mutual goal of finding better treatment for people suffering myositis.

Besides genetics, the second large topic discussed during the second day was the pathogenesis of myositis. Several different hypotheses were discussed, both immune and non-immune mechanisms and also in the relation to clinical phenotypes. Which markers that could signal additional organ involvement (skin, lung or different cancer types) and prognosis of myositis is of pronounced interest in the field. The outcome measures are continuously revisited and large constellations within the network are working hard to develop new definitions of improvement (DOIs) which will be both consensus and data driven and prospectively validated in clinical trials. Furthermore, the patient reported outcome measures grade the importance and difficulty to perform selected activities when having a myositis diagnosis. The evaluation of this outcome measure could be helpful in optimizing the activity profile of myositis.

Myositis specific autoantibodies- An overview of all known myositis specific autoantibodies and their associations with clinical manifestations and organ involvement was presented. The identification of myositis-specific autoantibodies has both diagnostic and prognostic value and offers a unique opportunity to adopt a stratified approach to treatment.

The heterogeneous group of idiopathic inflammatory myopathies (IIM) needs international consensus on myopathologic classification. Experts agreed on the basic panel of histological muscle biopsy stains necessary for diagnosing the different IIM and a score tool was proposed to describe muscle tissue alterations in the IIM.

Imaging a tool in diagnosis and as an outcome measure in myositis- the role of muscle MRI as diagnostic tool and outcome measure was highlighted, especially in patients with normal or non-specific findings at muscle biopsy. MRI can be used as a triage test before muscle biopsy and as an add-on test if the biopsy is non diagnostic.

Evaluation of dysphagia in IBM by novel real-time MRI. Comparison of two techniques for the assessment of dysphagia in IBM, the novel real time MRI (RT-MRI) and the X-ray videofluoroscopy (VF). The RT-MRI was performed asking the patients to swallow 5 ml of pineapple juice which is a natural contrast due to the presence of paramagnetic

manganese. According to the preliminary results, both RT-MRI and VF were useful to detect dysphagia but RT-MRI facilitated longitudinal assessment and provided a superior distinction of soft-tissue. No aspiration of pineapple juice was observed.
Biomarkers for sub-phenotyping of Juvenile Dermatomyositis, presented the results of a study whose aim was the identification of muscle biopsy phenotypes related to the presence of specific autoantibodies in patients with JDM. Two distinct clusters of muscle biopsy, reflecting mild and severe histological changes, were identified in correlation with anti MDA5 and anti Mi-2 antibodies, respectively.
The pharmacological treatment discussion in adult myositis was based on the heterogeneity in the disease where several sub groups are found in small patient materials. With few responders, how could a pharmacological treatment be defined as successful? Exercise has gone from an activity that was advised to avoid in myositis to the most reliable therapy to regain function in the muscles.
There is a need to consider role of skin biopsy to roll out mimickers as Eczema and psoriatic skin diseases and lack of progression to muscle disease in dermatomyositis.
The juvenile myositis syndromes are a clinically and serologically heterogeneous group of systemic autoimmune diseases. Clinical and serologic subgroups comprise distinct phenotypes, with many similarities between juvenile and adult IIM patients. Careful phenotyping of patients is critical in understanding clinical manifestations and prognoses.
B-cells play complex set of roles in JDM. Expansion of immature B cells accounts for high numbers of circulation B-cells. It may be unexpected consequence of IFN signature.
Myositis classification has been changing rapidly in the last years and especially polymyositis can be divided in many subgroups depending on autoantibodies and HLA type. This heterogeneity implicates a challenge in the treatment of these diseases because every patient is unique. Moreover every single rheumatologic center can treat patients differently depending on its own tradition and expertise. Not all centers have high technologies like advanced immunohistochemistry or microarrays or flowcytometry.
It is therefore important to develop treatment strategies based on what research has shown us.
Anti-TNF: Infliximab in spite of evidence for presence of TNF in muscle inflammation, the trials with infliximab showed instead a high incidence of disease flares (Dastmalchi, Ann Rheum 2008). Etanercept- the study by Amato (Ann Neurology 2011) showed an improvement in 5/11 patients and good steroid-sparing effect.
B-cells: the RIM study (Oddis, Arth Rheum 2013) showed that rituximab gave improvement in 83% of patients although there was no significant difference between the groups.
T-cells: their presence is confirmed by pathology in muscle and lungs and many articles show good effect with tacrolimus, cyclosporine and abatacept.
Type-1-IFN: a study from Greenberg (Ann Neurology 2005) showed overexpression of IFN in dermatomyositis. Sifalimumab showed suppression of IFNGS in blood and muscle of myositis patients and correlation with clinical improvement (Higgs, Ann Rheum Dis 2014).
IL-6: a study by Bilgic (Arthitis Rheum 2009) showed correlation in dermatomyosits between IL-6 och IFN.
The major decision at this first international conference was that the success of the meeting called for a biannually recurrence where delegations from the US volunteered to host the next meeting in early May 2017. There was a strong support to focus on the future of myositis research, therefore young investigators should be given opportunities to present, have discussions and mentor consultations within the global myositis network and during upcoming conferences.

4) Annexes 4a) and 4b): Programme of the meeting and full list of speakers and participants

Annex 4a: Programme of the meeting

May 8-11, 2015,
Radisson Blu Royal Park Hotel, Stockholm, Sweden

Friday May 8, Pre-conference meetings

14.00 - 15.30 Steering committee meeting for Euromyositis
16.00 - 18.00 Workshops
a) Genetics workshop – Janine Lamb, UK/Hector Chinoy, UK
b) Euromyositis registry: Interactive workshop on how to use the registry - Niels Steen Krogh, DK
18.30 Refreshments
19.00 Welcome – Ingrid Lundberg
19.10 - 19.30 Opening lecture – "Scientific challenges in the development of improved care for patients with myositis" Paul Plotz NIH, US
19.30 Get together with dinner at Radisson Blu Royal Park Hotel, Stockholm

Saturday May 9, 2015

08.30 - 08.40 Opening remarks – Ingrid Lundberg
08.40 - 10.10 Genes and environment
Chairs: Robert Cooper, UK, Lisa Rider, US

- Introduction, what is known about HLA and IIM, link with serology and outcome - Robert Cooper, UK
- How the GWAS and Immunochip has furthered our understanding of HLA and IIM, use of imputation and current status – Janine Lamb, UK

Selected abstracts:
HLA analysis in idiopathic inflammatory myopathy identifies significant association of classical HLA alleles in polymyositis and dermatomyositis, and amino acids in inclusion body myositis - Simon Rothwell, UK

- Genes and environment – what is the role of HLA in presentation of auto antigens - Hector Chinoy, UK

Selected abstract:
A genome-wide association study of statin induced myopathy – Ana Alfirevic, UK
10.10 - 10.40 Coffee
10.40 - 12.10 Pathogenesis (1)
Chairs: Clarissa Pilkington, UK, Jens Schmidt, Germany

- T cells in myositis – Vivianne Malmström, Sweden
- Seed and soil model for autoimmunity in myositis – Hitoshi Kohsaka, Japan
- Non-immune mechanisms in myositis – Kanneboyina Nagaraju, US

Selected abstracts:
A new mouse model of spontaneous myositis: NOD mice with disrupted T cell co-stimulatory ICOS pathway - Gwladys Bourdenet, France
Experimental myositis inducible with transfer of dendritic cells presenting a skeletal muscle C-protein derived CD8 epitope peptide – Naoko Okiyama; Japan
12.10 – 1310 Lunch
13.10 – 14.40 Pathogenesis (2)
Chairs: Lars Klareskog, Sweden, Britta Maurer, Switzerland

- Muscle specific autoantibodies in Inclusion body myositis - Ger Pruijn, Netherlands
- Amyloid deposits and inflammatory infiltrates in sporadic inclusion body myositis - Olivier Benveniste, France
- HMGCR and its role in the pathogenesis of inflammatory myopathies - Andrew Mammen, US

Selected abstracts:

Pathogenicity of anti-HMGCR auto-antibodies in necrotising autoimmune myopathy – Cecile Bergua, France

A novel mouse model of chronic myositis triggers protein aggregation reminiscent of inclusion body myositis (IBM) - Judith Bauer, Germany

14.40 -15.10 Coffee and poster viewing

15.10- 16.30 Classification and diagnosis of myositis

Chairs: Rohit Aggarwal, US, Jan De Bleecker, Belgium

- New Classification criteria for myositis - Ingrid Lundberg, Sweden
- Diagnostic/classification criteria for inclusion body myositis - David Hilton Jones, UK

Selected abstracts:

Increasing incidence of immune mediated necrotizing myopathy, anti-HMGCR antibodies and statin use – single centre experience – Martin Klein, Czech Republic

Auto-antibodies in necrotizing autoimmune myopathies: from diagnosis to pathogenicity - Olivier Boyer, France

16.40 -18.00 Poster session (1) with poster tours

Poster tour leaders: Robert Cooper, UK, Hitoshi Kohsaka, Japan, Kanneboyina Nagaraju, US, Ger Pruijn, Netherlands, Lisa Christopher-Stine, US

Posters # 1- 45

- GENES AND ENVIRONMENT
- PATHOGENESIS (1)
- PATHOGENESIS (2)
- AUTOANTIBODIES
- OUTCOME and OUTCOME MEASURES

18.00 - 18.45 Workshops

(c) Standards of Treatment for Adults with Myositis and different Phenotypes (STAMP) – Neil McHugh, UK

19.00 Dinner at Radisson Blu Royal Park Hotel, Stockholm

Sunday May 10, 2015

08.30 – 10.00 Diagnostic tools and outcome measures in myositis

Chairs: Neil Mc Hugh, UK, Antonella Notarnicola, Sweden

- Myositis specific autoantibodies – Zoe Betteridge, UK
- Muscle biopsy features and standardization of biopsy evaluation - Jan De Bleecker, Belgium
- Imaging a tool in diagnosis and as an outcome measure in myositis – Marianne de Visser, Netherlands

Selected abstracts:

Evaluation of dysphagia in IBM by novel real-time MRI - Jens Schmidt, Germany

Biomarkers for Sub-Phenotyping of Juvenile Dermatomyositis - Claire Deakin, UK

10.00 - 10.30 Coffee and poster viewing

10.30 – 12.00 Clinical Phenotypes and pathogenesis of myositis

Chairs: Paul Plotz, US, Louise Diederichsen, Denmark

- Dermatomyositis clinical and autoantibody features- Victoria Werth, US
- Clinical and autoantibody phenotypes of juvenile myositis and associated outcomes- Lisa Rider, US
- Pathogenesis in juvenile Dermatomyositis –Kiran Nistala, UK

Selected abstracts:

Cancer and necrotizing immune myopathy: high incidence in anti-HMGCR positive and seronegative patients but not in anti-SRP positive patients - Yves Allenbach, France

Characterization of autoantibodies directed against transcription intermediary factor 1-gamma (TIF1gamma) in patients with dermatomyositis. - Audrey Aussy, France

12.00 - 13.00 Lunch

13.00 - 14.00 The lung in myositis

Chairs: Øyvind Molberg, Norway, Lisa Christopher-Stine, US

- Clinical features and management of ILD in myositis – Rohit Aggarwal, US
- Lung as a target of the immune activity in myositis – Inka Albrecht, Sweden

14.00 – 14.30 Coffee and Poster viewing

14.30 – 16.00 Poster session with poster tours

Poster tour leaders: David Hilton-Jones, UK, Chester Oddis, US, Øyvind Molberg, Norway, Victoria Werth, US

Posters #46- 84

- DIAGNOSTIC TOOLS AND OUTCOME MEASURES
- TREATMENT
- CLINICAL PHENOTYPES

16.00 - 18.15 Informal discussions

18.45 Reception at Stockholm City Hall

Monday May 11, 2015

08.30 – 10.00 Update on treatment in myositis

Chairs: Olivier Benveniste, France, Ingrid Lundberg, Sweden

- Update on pharmacological treatment in adult myositis – Chet Oddis Pittsburgh, US
- Physical exercise in adult and juvenile myositis- Helene Alexanderson, Sweden
- Chinese multicenter study – Guochun Wang, China

Selected abstract:

Gene expression profile in muscle tissue before and after immunosuppressive treatment in patients with myositis - Joan Raouf, Sweden

10.00 - 10.30 Coffee

10.30 – 11.45 Improvement criteria and Patient reported outcome measures

Chairs: Marianne de Visser, Netherlands, Victoria Werth, US

- Improvement criteria for juvenile and adult inflammatory myopathies; background on the methodology - Lisa Rider, US
- Results - Jiri Vencovsky, Czech Republic
- Patient reported outcome measures - Lisa Christopher-Stine, US

11.45 - 12.30 Open discussion on future plans in myositis research - Lundberg IE, Rider L and Benveniste O

12.30 End of meeting - Ingrid Lundberg

Annex 4b: Full list of speakers and participants

lastname	firstname	Affiliation	lastname	firstname	Affiliation
Aggarwal	Rohit	University of Pittsburgh	Lilleker	James	University of Manchester
Albayda	Jemima	Johns Hopkins University	Limaye	Vidya	Royal Adelaide Hospital
Albrecht	Inka	Karolinska Institutet	Lindroos	Eva	Karolinska Institutet
Alexanderson	Helene	Karolinska Institutet	Lindvall	Björn	Muskelcentrum Örebro
Alfirevic	Ana	University of Liverpool	Loell	Ingela	Centrum för molekylär medicin
Allenbach	Yves	Asso Institut de Myologie	Lu	Xin	China-Japan Friendship Hospital
Andersson	Helena	Oslo University Hospital	Lundberg	Ingrid	Karolinska Institutet
Arnardottir	Snjólaug	Karolinska University Hospital	Malmström	Vivianne	Karolinska Institutet
Aussy	Audrey	inserm U905	Mammen	Andrew	National Institutes of Health
Baker	James	Idera Pharmaceuticals, Inc.	Mann	Heřman	Institute of Rheumatology
Barsotti	Simone	Rheumatology Unit - University of Pisa	Martineus	Jehns Christian	Skånes universitetssjukhus
Basharat	Pari	London Health Sciences Centre	Maurer	Britta	University Hospital Zurich
Bauer	Judith	Helmholtz Center Munich	McHugh	Neil	University of Bath
Benveniste	Olivier	AP-HP	Molberg	Øyvind	Oslo University Hospital
Bergua	Cécile	IRIB Inserm U905	Monaghan	Catherine	Idera Pharmaceutcials, Inc.
Betteridge	Zoe	University of Bath	Mozaffar	Mohammed A	King Abdul Aziz University
Bittner	Stefan	University of Muenster	Mozaffar	Tahseen	University of California, Irvine
Boyer	Olivier	INSERM	Nagaraju	Kanneboyina	Children's Research Institute
Campanilho-Marques	Raquel	UCL,Institute of Child Health	Nennesmo	Inger	Karolinska University Hospital
Canova Fernandes	Elisabeth	Rua Rafael Correa Sampaio,	Nistala	Kiran	UCL
Carr	Dan	University of Liverpool	Notarnicola	Antonella	Karolinska University Hospital
Casal Domínguez	María	CAP EL CLOT	Oakley	Les	Myositis UK
Cerqueira	Catia	Karolinska Institutet	Oakley	Irene	Myositis UK
Chiavelli	Hélène	IRIB Inserm U905	Oddis	Chester	University of Pittsburgh
Chinoy	Hector	The University of Manchester	Okiyama	Naoko	University of Tsukuba
Christopher-Stine	Lisa	Johns Hopkins University	Olesinska	Marzena	Institute of Rheumatology
Chung	Tae	Johns Hopkins University	Omori	Clarissa	Clinical hospital - São Paulo University
Cooper	Robert	University of Liverpool	Ottosson	Christina	Karolinska Hospital
Curiel	Rodolfo	The George Washington University	Padyukov	Leonid	Karolinska Institutet
Dani	Lara	Karolinska University Hospital	Paik	Julie	Johns Hopkins University
Danieli	Maria Giovanna	Clinica Medica	Parkes	Joanna	University of Manchester
Danielsson	Olof	Region Östergötland	Pehl	Debora	Charité - Universitätsmedizin Berlin
Dastmalchi	Maryam	Karolinska	Peng	Qinglin	China-Japan Friendship Hospital
De Bleecker	Jan	University Hospital	Pilkington	Clarissa	Great Ormond Street Hospital
de Visser	Marianne	Academic Medical Center	Pinal Fernandez	Iago	Hospital Vall d´Hebron
Deakin	Claire	University College London Institute of Child Health	Pipitone	Nicolo	Via Monte Ventasso 1/7
Diederichsen	Louise Pyndt	Odense University Hospital	Plotz	Paul	National Institutes of Health
Dobloug	Cecilie	Oslo University Hospital, Rikshospitalet	Pruijn	Ger	Radboud University
Dourmishev	Lyubomir	Medical University of Sofia	Raouf	Joan	Karolinska Institutet
Duret	Pierre Marie	Hôpitaux Universitaires de Strasbourge	Regardt	Malin	Karolinska University Hospital
Ekholm	Louise	Karolinska universitetssjukhuset	Rider	Lisa	NIEHS, NIH
Feely	Michael	Nebraska Medicine at Village Pointe	Rietveld	Anke	Radboudumc
Felis-Giemza	Anna	Institute of Rheumatology	Rothwell	Simon	University of Manchester
Fernandez Torron	Roberto	Hospital Donostia	Ruck	Tobias	University of Muenster
Fujimoto	Manabu	University of Tsukuba	Rushing	Elisabeth	University of Zurich
Galindo	Angeles	Instituto Nacional de Ciencias Medicasy Nutricion	Salloukh	Hashem	Novartis Pharma AG
Gelardi	Chiara	Ospedali Riuniti	Sallum	Adriana	Pediatric rheumatology unit da universidade de são paulo
Gheorghe	Karina	Karolinska Institutet	Schjander Berntsen	Kristin	Oslo University Hospital
Goebel	Hans	Charite, Berlin	Schmidt	Jens	University Medical Centre Göttingen
Gono	Takahisa	Tokyo Women's Medical University	Schmidt	Karsten	Universitätsmedizin Göttingen
Goode	Joanne	Myositis UK	Schrøder	Henrik Daa	Odense University Hospital
Gordon	Patrick	King's College Hospital NHS Trust	Selickaja	Sandra	CMM
Hamaguchi	Yasuhito	Kanazawa University	Selva O'Callaghan	Albert	Hospital Vall d´Hebron
Hanna	Balsam	Sahlgrenska University Hospital	Shu	Xiaoming	China-Japan Friendship Hospital
Hardet	Romain	Inserm U905	Simou	Stephanie	UCL Institute of Child Health
Haviland	Kate	Idera Pharmaceuticals Inc.	Stenzel	Werner	Charité - Universitätsmedizin
Herbert	Megan	Radboud University	Svensson	John	Karolinska Institutet
Hervier	Baptiste	Asso Institut de Myologie- GHPS	Tang	Quan	Karolinska Institutet
Hilton-Jones	David	John Radcliffe Hospital	Tansley	Sarah	University of Bath
Hosono	Yuji	Kyoto University	Tiniakou	Eleni	Johns Hopkins University
Hudson	Marie	McGill University	Tjärnlund	Anna	Karolinska Institutet
Hurtt	Mark	Idera Pharmacueticals	Tvede	Niels	Rigshospitalet
Härdvall Hansson	Sofia	USÖ , Örebro	Wallström	Erik	Novartis
Jalal	Awat	USÖ , Örebro	Wang	Qian	Peking Union Medical College Hospital
Jordan	Paula	Myositis UK	Wang	Guochun	China-Japan Friendship Hospital
Jouen	Fabienne	Rouen University Hospital	Wedderburn	Lucy	UCL
Kawasumi	Hidenaga	Tokyo Women's Medical University	Wells	Alvin	Karolinska Institutet
Kimura	Naoki	Tokyo Medical and Dental University (TMDU)	Venalis	Paulius	Karolinska Institutet
Klareskog	Lars	Karolinska Institutet	Vencovsky	Jiri	Institute of Rheumatology
Klein	Martin	Instute of Rheumatology	Werth	Victoria	University of Pennsylvania
Kohsaka	Hitoshi	Tokyo Medical and Dental University	Vetrila	Snejana	State University of Medicine and Pharmacy
Korotkova	Marina	Karolinska Institutet	Wienke	Judith	University medical center Utrecht
Krogh	Niels Steen	ZiteLab ApS	Witting	Nanna	Rigshospitalet
Krystufkova	Olga	Institute of Rheumatology	Wung	Peter	PAREXEL International
Lamb	Janine	University of Manchester	Yasin	Shireena	UCL- Institute of Child Health
Lappas	Theodoros	Universitetssjukhuset Örebro	Yoshihashi-Nakazato	Yoko	Tokyo Medical and Dental University (TMDU)
Levine	Todd	Phoenix Neurological Associates	Ytterberg	Steven	Mayo Clinic
Lidén	Maria	Akademiska University Hospital	Zong	Mei	Karolinska Universitetssjukhuset
Lightfoot	Adam	University of Liverpool	Zschuentzsch	Jana	University Medical Center Göttingen