Title of the study group: Study Group on Microcirculation in Rheumatic Diseases (SG MC/RD)

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Introduction
Why a Study group on Microcirculation in Rheumatic Diseases?
The EULAR study group on Microcirculation in Rheumatic Diseases (SG MC/RD) aims to build an international network of expert centres to facilitate collaboration and exchange knowledge within Europe and provide a platform on which the investigators can:
1. Study (micro)vascular mechanisms involved in the progression of RD with (micro)vascular involvement.
2. Develop natural history investigations operating across existing cohorts of European centres interested in the cooperation and implementation of diagnostic tools on microcirculation.
3. Identify through statistical analysis (based on large samples), models based on (micro)vascular assessment tools to predict disease progression and outcome.
4. Evaluate the microvascular effects of novel target strategies within specific RD populations.

Who we are
The EULAR Study Group on Microcirculation in Rheumatic Diseases was accepted by the EULAR Executive committee in March 2014 and is being supervised by EULAR Committee on Investigative Rheumatology, currently chaired by Prof. X. Mariette. The study group first convened at EULAR 2014 consisting of 12 founding members (Chair: Prof. V. Smith; Co-Chairs: Prof. A. Herrick, Prof. M. Cutolo, Prof. A. Sulli and other founding members: Prof. Y. Allanore, Prof. O. Distler, Prof. N. Damjanov, Prof. U. Müller-Ladner, Dr. W. Hermann, Prof. I. Murat, Dr. V. Riccieri and Prof. AE. Voskuyl) and 28 members (from which 11 of 5 non-European countries: USA, Brasil, South Africa, Turkey and Japan). Anno 2016 the number of members has risen to 56 (out of which 17 from 8 non-European countries).

Summary of last year’s activities
PROJECTS WITH PUBLICATION
- **SG MC/RD 1:** As standardisation of techniques to evaluate the microcirculation is one of the aims of the study group, a first activity was a multicentre study to assess the reliability of simple capillaroscopic definitions to evaluate morphologies of single capillaries. This study consisted of three parts (namely evaluation of study images by experts, evaluation of study images by novices at the 6th EULAR course on capillaroscopy in Genova, September 2014 and thirdly by participants at a training course at the Ghent University, Belgium, November 2014) resulted in a manuscript: Smith V. et al. An EULAR Study Group on reliability of simple capillaroscopic definitions to describe capillary morphology in rheumatic diseases. Rheumatology. 2016;55(5):883-890.
• **SG MC/RD 2:** Secondly, the evaluation of interrater reliability of microcirculatory flow evaluation (Laser Speckle Contrast Analysis) was piloted by two of the founding members and has been published:


• **SG MC/RD 3:** Thirdly, a cross-sectional, international SURvey on non-iNvaSive techniques to assess the microcirculation in patients with RayNaud’s phEnomenon (SUNSHINE survey) has been performed in between 471 eligible physicians between October and December 2015 (submitted as a manuscript).

**ONGOING PROJECTS**

• **SG MC/RD 4:** An observational international multicenter study for the assessment, definition of morphologic nailfold capillary pattern in patients with systemic lupus erythematosus (SLE). (started 2016)

• **SG MC/RD 5:** A systematic review of capillaroscopy in SLE. (abstract submitted to EULAR 2017, manuscript in preparation)

• **SG MC/RD 6:** Nailfold capillaroscopy in pediatric rheumatic diseases and healthy children. (starting January 2017)

• **SG MC/RD 7:** International comparative image banking for nailfold capillary education in systemic sclerosis and other rheumatic diseases. (starting 2017)

• **SG MC/RD 8:** Capillaroscopy in childhood-onset systemic lupus erythematosus (cSLE). (starting December 2017)

• **SG MC/RD 9:** To step forward to the aim to identify through statistical analysis (based on large samples), models based on (micro)vascular assessment tools to predict disease progression and outcome a large multicentre study to evaluate of the role of capillaroscopy in the prediction of severe organ involvement was set up also in close liaison with EUSTAR. (Evaluation is ongoing. 330 patients have been included by December 2016)

**Courses, meetings and presentations on behalf of the Study Group on MC RD**

• Annual European Congress of Rheumatology “EULAR 2016”, June 2016: Workshop on Capillaroscopy, London (United Kingdom)

• The 7th EULAR course on Capillaroscopy, September 2016, Genova (Italy)

• Annual scientific meeting American College of Rheumatology “ACR 2016”. Study group on Capillaroscopy, Washington (USA)

• EULAR 2016: lectures “Differential diagnosis between primary and secondary Raynaud’s phenomenon” on Thursday June 9th 2016 and “How to differentiate normal from abnormal capillaroscopic patterns: role in early diagnosis” on Wednesday June 8th and Friday June 10th 2016.

• EULAR 2016: EULAR SG MC/RD meeting at EULAR Thursday June 9th (Agenda: see addendum 1).

• ACR 2016: EULAR SG MC/RD meeting at ACR Sunday November 13th (Agenda: see addendum 2).

• ACR 2016: ACR Study Group on Capillaroscopy Tuesday November 15th (Agenda: see addendum 3).
Publications


Addendum 1:

EULAR Study Group on Microcirculation in Rheumatic Diseases 2016 (SG MC/RD)

Thursday June 9th, 17-19 pm

ROOM S17 ExCeL Exhibition Centre

A. Chair Report
   - Welcome
   - Report on the actual status of the SG position and EULAR requirements
   - Report on the SG structure and members. Published articles.

B. Project Reports:
   - Francesca Ingegnoli and Ariane Herrick (15’):
     Survey on microcirculatory tools “Sunshine survey” - SG_MC/RD3
   - Kristof Thevissen and Vanessa Smith (15’):
     Capillaroscopy in SLE, systematic review - SG_MC/RD5
   - Francesca Ingegnoli and Valeria Riccieri (15’):
     SLE capillaroscopy study - SG_MC/RD4
   - John Pauling (15’):
     Report on SCTC Vascular working group

C. New projects proposals (15’):
   - Ivan Foeldvari, Maurizio Cutolo, Francesca Ingegnoli and Vanessa Smith: Capillaroscopy in juvenile rheumatic patients - SG_MC/RD6
D. Teaching

- Alberto Sulli (20’):
  Tools (other than nailfoldvideo capillaroscopy) to evaluate the microcirculation in Rheumatic Diseases

E. General Discussion

Addendum 2:

EULAR Study Group on Microcirculation in Rheumatic Diseases 2016 (SG MC/RD)

Sunday November 13th 2016, 1-2PM

ROOM Judiciary Square, Marriott Marquis Hotel (Meeting level 3)

A. Chair Report

- Welcome
- Report on the actual status of the SG position and EULAR requirements
- Report on the SG structure and members. Published articles.

B. Project Reports:

- Francesca Ingegnoli and Valeria Riccieri (10’):
  An observational international multicenter study for the assessment, definition of morphologic nailfold capillary patterns in patients with systemic lupus erythematosus (SG_MC/RD4)

- Vanessa Smith, Ivan Foeldvari, Francesca Ingegnoli and Maurizio Cutolo (10’):
  Capillaroscopy in juvenile rheumatic patients (SG_MC/RD6)

C. New projects proposals:

- Tracy Frech, Lesley Ann Saketkoo, Maurizio Cutolo and Vanessa Smith (15’):
  International comparative image banking for nailfold capillary education in systemic sclerosis and other rheumatic diseases (SG_MC/RD7)

D. News

- Alberto Sulli (10’):
  Transition of nailfold microangiopathy throughout different patterns of microvascular damage and correlations with organ involvement in systemic sclerosis: A twelve year follow-up

- Ariane Herrick (10’):
Intra- and inter-observer reliability of nailfold videocapillaroscopy – A possible outcome measure for systemic sclerosis-related microangiopathy

E. General Discussion

Addendum 3:

ACR Study Group on Capillaroscopy 2016

Tuesday November 15th, 1-2 PM

ROOM 209A – Congress Centre

1) Prof. Vanessa Smith
   “Can we distinguish secondary Raynaud’s phenomenon by capillaroscopy?”

2) Prof. Maurizio Cutolo
   “Can capillaroscopy predict clinical complications in rheumatic diseases?”

3) Prof. Alberto Sulli
   “Can capillaroscopy monitor microcirculatory therapies?”

4) Prof. Ariane Herrick
   “Nailfold capillaroscopy: how recent advances are changing clinical practice and research.”