Conclusion: FMT of commercially-available ACHIM in patients with SSc appeared safe, effectively reduced lower GI symptoms, altered gut microbiota composition, richness and diversity and appeared to affect the mucosal immune system.

Disclosure of Interests: Anna-Maria Hoffmann-Vold Grant/research support from: Received research funding or other remuneration from Boehringer Ingelheim, GSK, and Actelion, Consultant for: Received consulting fees or other remuneration from Boehringer Ingelheim, GSK, and Actelion, Speakers bureau: Actelion and Boehringer Ingelheim, Håvard Fretheim Consultant for: Received consulting fees or other remuneration from GSK, and Actelion, Brian K Chung: None declared, Henriette Didriksen Consultant for: Received consulting fees or other remuneration from GSK, and Actelion, Espen S Bækkevold: None declared, Oyvind Midvett: None declared, Catharine Brunnborg: None declared, Torhild Garen: None declared, Tore Midvett Shareholder of: Owner of ACHIM, Johannes R Hov: None declared, Knut EA Lundin: None declared, Oyvind Mølberg: None declared.


FRIDAY, 14 JUNE 2019

Calming the cytokine storm in children and adults__

OP0328 COMPARISON OF SERUM CYTOKINE PROFILE IN MACROPHAGE ACTIVATION SYNDROME AMONG DIFFERENT BACKGROUND RHEUMATIC DISEASES IN CHILDREN:

Mas Minuta, Masaki Shimizu, Masaki Usami, Naoto Sakamura, Hitoshi Irau, Maiko Takakuwa, Natsumi Inoue, Yasuo Nakagishi, Akihiro Yachie, Graduate School of Medical Sciences, Kanazawa University, Department of Pediatrics, Kanazawa, Japan

Background: Macrophage activation syndrome (MAS) is a severe, potentially life-threatening complication of pediatric rheumatic diseases. MAS occurs most often in children with systemic juvenile idiopathic arthritis (s-JIA) and less commonly in children with systemic lupus erythematosus (SLE), Kawasaki disease (KD) and juvenile dermatomyositis (JDM). The hallmark of MAS includes uncontrolled and dysfunctional immune responses involving continual activation and expansion of T lymphocytes and macrophages, which in turn lead to marked hypercytokinemia. However, it is still unknown which cytokines play a key role in the pathogenesis of MAS among different backgrounds.

Objectives: This study was aimed to clarify cytokines involved in the development of MAS among different background rheumatic diseases and to identify the serum biomarkers for the diagnosis of MAS.

Methods: Serum neopterin, interleukin (IL)-18, IL-6, tumor necrosis factor (TNF)-α and soluble TNF receptor type I (sTNFR-I) and sTNFR-II levels were determined using enzyme-linked immunosorbent assay in 112 s-JIA patients including 30 MAS, 8 SLE patients including 3 with MAS, 67 KD patients including 4 with MAS, and 7 JDM patients including 3 with MAS. Cytokine profiles in MAS phase of each disease were compared to those in active phase.

Results: Serum neopterin levels in patients with s-JIA, SLE and KD were significantly elevated in MAS phase compared to those in active phase. Serum neopterin levels in patients with JDM were also elevated in MAS phase compared to those in active phase, although statistically significant. Serum sTNFR-II levels in patients with JDM were also elevated in MAS phase compared to those in active phase, although statistically significant. Serum IL-18 levels in patients with s-JIA were significantly elevated in both active and MAS phase compared to those in patients with other diseases. There were no significant differences of serum IL-6 and TNF-α levels among different backgrounds.

Conclusion: The elevation of serum neopterin levels was the common finding in patients with MAS even in different backgrounds. These findings indicate that overproduction of interferon (IFN)-γ might be closely related to the development of MAS. Serum neopterin levels which reflect IFN-γ production might be a promising biomarker for the disease activity of MAS.

REFERENCES:

Disclosure of Interests: None declared
Disclosure of Interests: Sahil Mahajan: None declared, Zhengfeng Yang: None declared, Elisabeth Mellins Grant/research support from: Novartis and GlaxoSmithKline, roberta faccio: None declared.


FRIDAY, 14 JUNE 2019

Remission – the holy grail? Looking across diseases

**OP0330**

### COMPARISON OF THE EFFECTS OF DORIS REMISSION AND LUPUS LOW DISEASE ACTIVITY STATE (LLDAS) ON DISEASE OUTCOMES IN A MULTINATIONAL PROSPECTIVE STUDY


**University of Melbourne, Parkville, Australia**

**Chiang Mai University, Chiang Mai, Thailand**

**Chang Gung Memorial Hospital, Guishan, Taiwan, Republic of China**

**National University Hospital, Singapore, Singapore**

**University of Malaya, Kuala Lumpur, Malaysia**

**University of Santo Tomas Hospital, Manila, Philippines**

**Padjadjaran University, Bandung, Indonesia**

**Tokyo Women’s Medical University, Shinjuku, Japan**

**Tan Tock Seng Hospital, Singapore, Singapore**

**Liverpool Hospital School, Liverpool, Australia**

**West Terrace, Adelaide, Australia**

**University of Hong Kong, Hong Kong, Hong Kong (SAR)**

**Peking University, Beijing, China**

**Background:** The Definitions of Remission in SLE (DORIS) group has proposed multiple definitions of remission, but these are infrequently attained and have not been prospectively evaluated in relation to protection from damage accrual. In contrast, the Lupus Low Disease Activity State (LLDAS) is more attainable, and has been shown to be associated with improved patient outcomes.

**Objectives:** To compare the attainability, and association with outcomes, of LLDAS and remission in a prospective multicentre study.

**Methods:** A prospective multinational cohort study was undertaken in 13 centres between 2013-2017. Time dependent Cox proportional hazards models were used to compare LLDAS and DORIS definitions of remission in terms of impact on disease flares and damage accrual.

**Results:** 1735 SLE patients were recruited, and followed for (mean±SD) 2.2±0.9 years, totalling 12,717 visits. LLDAS was achieved in 47.2% of observed visits. In contrast, remission was achieved in 1.1%-15.4% of visits depending on the stringency of remission definition. LLDAS attainment at any visit was associated with significantly reduced subsequent flare (HR 0.65, 95%CI 0.56-0.75, p<0.001) and damage accrual (HR 0.59, 95%CI 0.45-0.76, p<0.001). In contrast, only the least stringent remission definition was associated with reduced damage accrual (HR 0.56, 95%CI 0.39-0.88, p=0.01). Only remission definitions including serological remission were significantly associated with reduction in subsequent flares. Patients who spent >50% of their observed time in LLDAS had reduction in damage accrual (HR 0.54, 95% CI 0.42-0.70, p<0.001) compared to patients with <50% of observed time in LLDAS; again, only the least stringent remission definition, or the related definition excluding serology, were associated with reduced damage (HR 0.59, 95% CI 0.42-0.83, p=0.003; HR 0.69, 95% CI 0.48-0.99, p=0.05, respectively).

**Conclusion:** LLDAS was more attainable than any remission definition, whilst still conferring significant reduction in flares and damage accrual. Only the least stringent remission definitions could be shown to be associated with significantly lower damage accrual, likely reflecting a low frequency of remission attainment overall. LLDAS is a valid remission definition, and is more achievable than remission.

**Disclosure of Interests:** Vera Goldner: None declared, Eric F. Morand Grant/research support from: AstraZeneca, Bristol Myers Squibb, Janssen, Merck Serono, and UCB, Consultant for: AstraZeneca, Eli Lilly, and Merck Serono, Speakers bureau: AstraZeneca, Rangi Kandane-Rathnayake: None declared, Molla Huq: None declared, Worawit Louthreno: None declared, Shue Fen Lu: None declared, Yeong-Jian Wu: None declared, Aisha Lateef: None declared, Sargunan Sockalingam: None declared, Sandra Navarra: None declared, Leonid Zamora: None declared, Laniyati Hamijoyo: None declared, Yasuhiro Katsumata: None declared, Masayoshi harigai Grant/research support from: Tokyo Women’s Medical University (TWMU) has received unrestricted research grants for Division of Epidemiology and Pharmacoepidemiology of Rheumatic Diseases from Ayumi Pharmaceutical Co. Ltd., Bristol Meyers Squib, Chugai Pharmaceutical Co. Ltd., Nippon Kayaku Co. Ltd., Taisho Toyama Pharmaceua, Mitsubishi Tanabe Pharma Corp., and with which TWMU paid the salary of MH. MH has also received research grants from AbbVie Japan

**OP0331**

### MAGNETIC RESONANCE IMAGING TENOSYNOVITIS AND OSTEOIS ARE INDEPENDENT PREDICTORS OF RADIOGRAPHIC AND MRI DAMAGE PROGRESSION IN RHEUMATOID ARTHRITIS PATIENTS IN CLINICAL REMISSION

Signe Møller-Bisgaard, Kim Harsev-Petersen, Bo Ejbjerg, Merete L. Hetland, Lykke Ørnbjerg, Daniel Galanis, Jakob Møller-Bischell, Mikael Boesen, Kristian Stengaard-Pedersen, Ole Madsen, Bente Jensen, Jan Villadsen, Ellen Margrete Hauge, Philip Bennett, Oliver Hendriks, Karsten Asmussen, Marcin Kowalski, Hanne Merete Lindegaard, Henning Biddal, Niels Steen Krogh, Torkel Ellingsen, Agnete Nielsen, Lone Bolding, Anne Grethe Jurik, Henrik Thomsen, Mikkel Østergaard, Rigshospitalet, Glostrup, Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Glostrup, Denmark, Slagelse Hospital, Slagelse, Denmark, Rheumatology and Radiology departments at hospitals at Zealand, Jutland and Funen, Copenhagen, Slagelse, Aarhus, Silkeborg, Odense, Hjørring and Graaesten, Denmark, ZheLab, Copenhagen, Denmark

**Background:** Progression of structural joint damage occurs in 20-30% of patients with rheumatoid arthritis (RA) in clinical remission. Magnetic resonance imaging (MRI)-detected synovitis and in particular osteitis/bone marrow edema (BME) are known predictors of structural progression in both active RA and in remission, but the predictive value of adding MRI tenosynovitis assessment as potential predictor in patients in clinical remission has not been investigated.

**Objectives:** To investigate the predictive value of baseline MRI inflammatory and damage cohort in 2 year MRI and X-ray damage progression in an RA cohort in clinical remission, following MRI and conventional treat-to-target (T2T) strategies.

**Methods:** 200 RA patients in clinical remission (DAS28-CRP<3.2 and no swollen joints) on conventional DMARDs, included in the randomized IMAGINE-RA trial (conventional DAS28 + MRI-guided T2T strategy targeting absence of BME vs conventional DAS28 guided T2T strategy) had baseline and 2 years contrast-enhanced MRIs of the dominant wrist and 2nd-5th MCP joints and X-rays of hands and feet performed, which were evaluated with known chronology by two experienced readers according to the OMERACT RAMRIS scoring system and Sharp/ van der Heijde method, respectively.

The following potentially predictive baseline variables: MRI BME, synovitis, tenosynovitis, MRI and X-ray erosion and joint space narrowing (JSN) score, CRP, DAS28, smoking status, gender, age and patient group were tested in univariate logistic regression analyses with 2-year progression in MRI combined damage score, Total Sharp Score (TSS), and MRI and X-ray JSN and erosion scores as dependent variables. Variables with p<0.1, age, gender and patient group were included in multivariable logistic regression analyses with backward selection.

**Results:** Based on univariate analyses MRI BME, synovitis, tenosynovitis, x-ray erosion and JSN, gender and age were included in subsequent multivariable analyses. Independent MRI predictors of structural progression were BME (MRI progression) and tenosynovitis (MRI and X-ray progression), see table.

**Table:**

<table>
<thead>
<tr>
<th>MRI Erosion</th>
<th>MRI JSN</th>
<th>MRI combined damage score</th>
<th>X-ray Erosion</th>
<th>X-ray JSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploratory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRI BME</td>
<td>1.13</td>
<td>1.18</td>
<td>1.22</td>
<td></td>
</tr>
<tr>
<td>CRP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS28</td>
<td>(1.06-1.26)</td>
<td>(1.08-1.12)</td>
<td>(1.21-1.33)</td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td>p&lt;0.001</td>
<td>p&lt;0.001</td>
<td>p&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>MRI</td>
<td>1.13</td>
<td>1.21</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>synovitis</td>
<td>(1.03-1.25)</td>
<td>(1.04-1.12)</td>
<td>(1.20-1.26)</td>
<td>(1.21-1.26)</td>
</tr>
<tr>
<td>p&lt;0.001</td>
<td>p=0.01</td>
<td>p=0.001</td>
<td>p=0.02</td>
<td>p=0.04</td>
</tr>
</tbody>
</table>

**Age**

| 0.96 (0.93-0.99) | p=0.007 |

**Notes:** Odds Ratio (95% confidence interval; CI) p-value; MRI combined damage score: sum score of MRI erosion and JSN scores.

**Aki, Eisa Co., Ltd., Takeda Pharmaceutical Co., Ltd., and Teijin Pharma Ltd., Madelynn Chan: None declared, Sean O’Neill: None declared, Fiona Goldblatt: None declared, Chak Sing Lau: None declared, Laniyati Hamijoyo: None declared, Alberto Hoi Grant/research support from: GSK, AstraZeneca, UCB and Merck Serono, Consultant for: Janssen Steering Committee, Speakers bureau: Novartis, Mandana Nikpour: None declared.


http://ard.bmj.com/content/24/Suppl_3/OP0330/2046/257/2019.27/download

Downloaded from http://ard.bmj.com/ on September 15, 2023 by guest. Protected by copyright.