ASSOCIATION BETWEEN CARDIOVASCULAR OUTCOME AND RHEUMATOID ARTHRITIS: NATIONWIDE POPULATION-BASED COHORT STUDY

S. Kang1, K. D. Han2, S. Lee3, Y. Eun1, H. S. Cha1, E. M. Koh1, J. Lee1, H. Kim1.
1Samsung Medical Center, Sungkyunkwan University School of Medicine, Department of Medicine, Seoul, Korea, Rep. of (South Korea); 2Shanxi Medical University, School of Basic Medical Sciences, Taiyuan, China; 3Academy of Microbial Ecology, Shanxi Medical University, Taiyuan, China; 4Second Hospital of Shanxi Medical University, Key Laboratory of Cellular Physiology, Taiyuan, China; 5Second Hospital of Shanxi Medical University, Department of Statistics and Actuarial Science, Seoul, Korea, Rep. of (South Korea)

Background: Many studies have shown increased risk of cardiovascular disease (CVD) in patients with rheumatoid arthritis (RA). Despite a growing burden posed by CVD in RA patients, large scale studies which examined the association between characteristic of RA patients and CVD risks, and studies which adjusted for various confounding factors are lacking.

Objectives: This study aimed to investigate the association between CVD risk and RA in large-scale, nationwide cohort of Korean population, and to examine which characteristics of RA patients are associated with increased CVD risk.

Methods: We enrolled 136,469 patients with RA who participated in national health examinations within 2 years of RA diagnosis between 2010 and 2017 and non-RA controls matched by age and sex (n= 682,345). The cohort was followed until the end of 2019. The outcome was occurrence of myocardial infarction (MI) or stroke. MI was defined as one hospitalization or two outpatient visit with ICD-10-CM codes I21 or I22. Stroke was defined as one hospitalization with ICD-10-CM codes I63 or I64 and a claim for brain imaging (CT or MRI).

The Cox proportional hazard model and Kaplan Meier curve were used for the association between characteristic of RA patients and CVD risks, and studies which adjusted for confounding variables. The association between RA and CVD was prominent in female (MI: adjusted HR 1.41 in male, 1.60 in female, p for interaction = 0.0293; Stroke: adjusted HR 1.13 in male, 1.27 in female, p for interaction = 0.03) and younger-age subgroups (MI: adjusted HR 2.9 in <40 years, 1.52 in 40-64 years, 1.51 in ≥65 years, p for interaction<0.0001; Stroke: adjusted HR 2.35 in <40 years, 1.21 in 40-64 years, 1.21 in ≥65 years, p for interaction = 0.0010) after adjusting for confounding variables. The association between RA and risk of MI was significant in those without DMARDs and active inflammation on lipid profiles has been investigated in RA

Discussion of Interests: None declared

DOI: 10.1136/annrheumdis-2022-eular.3579

THE REDUCTION OF TURICIBACTER IN GUT MICROBIOTA ASSOCIATED WITH SJÖGREN’S SYNDROME SECONDARY TO RHEUMATOID ARTHRITIS

M. J. Chang1, S. X. Zhang2,3,4, J. Qiao3,4, Q. Wang2,3,5, X. R. Qi,1 C. Wang1,2,3, Q. Yu1,5, P. F. He,1 Shanxi Medical University, School of Management Shanxi Medical University, Taiyuan, China; 2Shanxi Medical University, Key Laboratory of Cellular Physiology, Taiyuan, China; 3Shanxi Medical University, Academy of Microbial Ecology, Taiyuan, China; 4The Second Hospital of Shanxi Medical University, the Second Hospital of Shanxi Medical University, Taiyuan, China, Shanxi Medical University, School of Basic Medical Sciences, Taiyuan, China, Shanxi Medical University, Medical Data Sciences, Taiyuan, China

Background: Secondary Sjögren’s syndrome (SS) is a common extra-articular manifestation of rheumatoid arthritis (RA). RA patients combined with SS have different outcomes from those without SS[2]. However, the studies investigated the characteristics of gut microbiota in patients with RA and SS is limited.

Objectives: To investigate the characteristics of gut microbiome and the associations between flora and peripheral lymphocyte subpopulations in RA patients with or without Sjögren’s syndrome.

Methods: A total of 326 samples from 145 RA patients without SS, 23 RA combined with SS patients(RA-SS) and 168 healthy controls (HCs) were recruit in this study from The Second Hospital of Shanxi Medical University (Taiyuan, Shanxi, China). The gut microbiota were investigated via 16s rRNA sequencing and the peripheral T lymphocyte subsets of these participants were assessed by flow cytometry. The Wilcoxon rank-sum test was used to compare alpha diversity indices between groups. Differential abundance analysis was carried out the STAMP software. Spearman’s correlation analysis was used to assess the correlations between the relative abundances of bacterial genera and clinical measures.

Acknowledgements: This work was supported by the National Natural Science Foundation of China (No. 82001740).

Disclosure of Interests: None declared


EFFECT OF EARLY ETANERCEPT TREATMENT ON CIRCULATING LIPOPROTEINS DIFFERS TO TREATMENT WITH METHOTREXATE AND IS MODULATED BY CLINICAL DISEASE ACTIVITY

R. Shukla1,2, A. Burska3, P. Emery1,4, D. Plant1,2, M. H. Buch1,3, 1University of Manchester, Centre for Musculoskeletal Research, Manchester, United Kingdom; 2Manchester University NHS Foundation Trust, NIHR Biomedical Research Centre, Manchester, United Kingdom; 3University of Leeds, Leeds Institute of Rheumatic and Musculoskeletal Medicine, Leeds, United Kingdom; 4Leeds Teaching Hospitals NHS Trust, NIHR Leeds Biomedical Research Centre, Leeds, United Kingdom

Background: A reduction in serum lipids such as total cholesterol (TC) and low-density lipoprotein (LDL) has been associated with increased risk of cardiovascular events in active RA, paradoxical to the general population[1]. The effect of DMARDs and active inflammation on lipid profiles has been investigated in RA
but detailed lipid profiling has been lacking in very early disease and across the spectrum of disease activity.

**Objectives:** In a treatment naive early RA trial cohort, we sought to compare circulating lipid profiles between patients treated with first line etanercept + methotrexate (ETN+MTX) versus methotrexate treat-to-target (MTX-TT) regime and between clinical remission and high disease activity.

**Methods:** VEDERA trial [Very early Etanercept and Methotrexate versus Methotrexate with/without Delayed Etanercept in RA] randomised 120 treatment-naive RA patients to either first-line ETN+MTX or MTX-TT regime with escalation to ETN+MTX if not in DAS28ESR remission at week 24. TC, triglycerides (TG), high density lipoprotein (HDL) and LDL were measured; apolipoproteins and atherogenic indices such as TC/HDL, atherogenic index of plasma (AIP) and apolipoprotein B/A-i ratio (aporatio) were calculated at baseline, weeks 12, 24 and 48. Linear mixed effects regression was used to test the effect of treatment on lipids and atherogenic indices in states of remission (DAS28-ESR ≤ 2.6) and high disease activity (DAS28-ESR > 5.1).

**Results:** Baseline clinical characteristics of individuals and lipid profiles including atherogenic indices were comparable between the two treatment groups (Table 1).

<table>
<thead>
<tr>
<th>Lipid</th>
<th>MTX-TT, N = 60</th>
<th>ETN+MTX, N = 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC</td>
<td>4.69 (4.03,5.25)</td>
<td>4.69 (4.01,5.18)</td>
</tr>
<tr>
<td>TG</td>
<td>1.15 (0.90,1.44)</td>
<td>1.10 (0.89,1.55)</td>
</tr>
<tr>
<td>HDL</td>
<td>1.28 (1.04,1.53)</td>
<td>1.27 (1.05,1.48)</td>
</tr>
<tr>
<td>LDL</td>
<td>2.87 (2.23,3.27)</td>
<td>2.84 (2.01,3.29)</td>
</tr>
<tr>
<td>AIP</td>
<td>-0.06 (-0.20,0.09)</td>
<td>-0.06 (-0.17,0.13)</td>
</tr>
<tr>
<td>Aporatio</td>
<td>0.63 (0.54,0.74)</td>
<td>0.64 (0.55,0.74)</td>
</tr>
</tbody>
</table>

In clinical remission, a lowering of atherogenic indices and TC, TG, LDL levels as well as a rise in predicted HDL levels were observed. In high disease activity, both HDL and LDL were increased along with the atherogenic indices TC/HDL-C, AIP and aporatio. However, the predicted values at different weeks did not reach statistical significance (not shown).

**Conclusion:** Treatment with MTX-TT and ETN+MTX had opposing effects on predicted HDL levels in remission and high-disease activity (Figure 1). In remission, MTX-TT treatment resulted in a predicted rise in HDL whilst with ETN+MTX a small reduction was observed (estimate 0.004, p = 0.02). Similar trends were observed for LDL in high disease activity (p = 0.5). In remission, both treatments resulted in a reduction in LDL (p = 0.5), whilst in high disease activity ETN+MTX treatment resulted in a modest rise in LDL compared to MTX-TT (p = 0.06). At weeks 24 and 48, significant differences were observed in LDL values between treatment groups in high disease activity (estimate 0.57, p = 0.05 and estimate 1.13, p = 0.04 respectively).

**Disclosure of Interests:** None declared.

**References:**


**Disclosure of Interests:** None declared.

**DOI:** 10.1136/annrheumdis-2022-eular.4904