Ingelheim, Chugai, Lilly, MSD, Pfizer, Roche, Sanofi-Aventis, UCB, A. Strangfeld Speakers bureau: BMS, MSD, Pfizer, Roche, Sanofi-Aventis, A. Zink Speakers bureau: AbbVie, BMS, MSD, Pfizer, Roche, UCB
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Rheumatoid arthritis - comorbidity and clinical aspects

SAT0088 HDL CHOLESTEROL EFFLUX CAPACITY IN RHEUMATOID ARTHRITIS PATIENTS: CONTRIBUTING FACTORS AND RELATIONSHIP WITH SUBCLINICAL ATHEROSCLEROSIS

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Background: Lipid profiles appear to be altered in rheumatoid arthritis (RA) patients due to disease activity and inflammation. Cholesterol efflux capacity (CEC) has not only been linked to cardiovascular events in the general population, but also to be impaired in RA patients.
Objectives: To analyze whether CEC is related to subclinical atherosclerosis, as determined by the presence of carotid plaque or increased levels of carotid intima-media thickness (cIMT) in RA patients. Secondarily, we aimed to describe the disease-contributing factors that are related to CEC as an expression of the abnormalities in the lipid profile associated with the disease.
Methods: Cross-sectional study that encompassed 401 individuals; 178 patients with RA and 223 sex-matched controls. CEC was measured using an *in vitro* assay, lipoproteins serum concentrations, and standard lipid profile were assessed in patients and controls. Carotid intima-media thickness and carotid plaques were assessed in RA patients. A multivariable analysis was performed to evaluate the relation of CEC with RA-related data, lipid profile and subclinical carotid atherosclerosis.
Results: Mean CEC was not significantly different between RA patients (18.9 ± SD 9.0%) and controls (16.9±10.4%), p=0.11. Demographic variables were not associated with CEC except for a correlation with male gender that was only found in RA patients, but not in controls. Systolic blood pressure inversely correlated with CEC in controls (beta coefficient -0.1 [-0.2–0.0] %, p=0.025). In RA patients, a similar trend was found although a statistically significant difference was not reached. Neither the traditional cardiovascular risk factors nor the cardiovascular co-morbidity-related data were associated with CEC. Similarly, lipid profile did not show any relationship with CEC in patients or controls. ESR tended to be associated with a lower CEC although it did not reach statistical significance. RA patients with low (beta coef. -5.2 [-10.0–0.3] %, p=0.039) and moderate disease activity (beta coef. -4.6 [-8.5–0.7] %, p=0.020) were associated with inferior levels of CEC when compared to patients in remission. CEC was not found to be associated with cIMT in RA patients. However, higher CEC was associated with a protective effect for the presence of carotid plaque in RA patients. This relationship was maintained even after multivariate analysis (OR 0.94 [0.89–0.98], p=0.015).
Conclusions: Our study, which includes the largest series of RA patients ever assessed for CEC, reveals for the first time that CEC is related to subclinical atherosclerosis in RA patients. The fact that CEC is also associated with disease activity reinforces the idea that CEC may be a mediator between disease activity and subclinical atherosclerosis.
Disclosure of Interest: None declared
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SAT0089 COMPARATIVE CARDIOVASCULAR SAFETY OF ABATACEPT AND TUMOR NECROSIS FACTOR INHIBITORS IN RHEUMATOID ARTHRITIS PATIENTS WITH AND WITHOUT TYPE 2 DIABETES: A POPULATION-BASED COHORT STUDY

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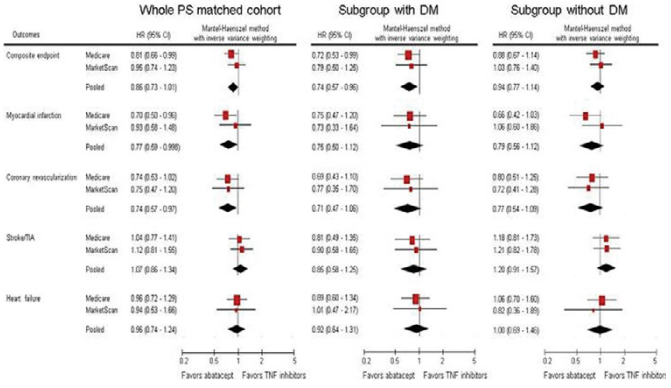
Background: Patients with rheumatoid arthritis (RA) are at high risk of developing cardiovascular disease (CVD) and may benefit from potent disease-modifying anti-inflammatory drugs such as biologics. Since diabetes mellitus (DM) is a major risk factor for CVD, RA patients with DM constitute a high CVD risk subgroup, calling for particular attention. However, there is a lack of knowledge on the comparative cardiovascular safety of different biologics in RA patients with DM.
Objectives: To examine the comparative cardiovascular safety of abatacept versus TNF inhibitors in RA patients with and without DM.
Methods: RA patients enrolled in both public (Medicare) and commercial (Truven MarketScan) health plans in the U.S. who newly initiated abatacept or TNF inhibitors were eligible. The primary outcome of interest was a composite CVD endpoint of myocardial infarction (MI), stroke/transient ischemic attack (TIA), and coronary revascularization. The secondary outcomes included each component of the composite CVD endpoint and heart failure (HF). After 1:1 propensity score (PS) matching between two exposure groups, Cox proportional hazard model was used to estimate the hazard ratio (HR) and 95% confidence interval (CI) for each outcome, comparing abatacept to TNF inhibitors. PS matching was separately done in subgroups with or without baseline DM in each database. PS-matched HRs from the two databases were pooled using an inverse variance–weighted fixed-effect model.
Results: We identified 31,899 Medicare enrollees (6,107 new users of abatacept and 25,792 new users of TNF inhibitors) and 71,956 commercial enrollees (6,942 new users of abatacept and 65,464 new users of TNF inhibitors) with RA. After PS matching, 2,119 pairs with DM and 3,984 pairs without DM were identified in Medicare and 1,371 pairs with DM and 5565 pairs without DM in MarketScan. The PS matched HR (95% CI) for the composite CVD endpoint in the whole cohort was 0.81 (0.66–0.99) in Medicare and 0.95 (0.74–1.23) in MarketScan with a pooled HR (95% CI) of 0.86 (0.73–1.01). In the subgroup with DM, HR (95% CI) for composite CVD endpoint was 0.72 (0.53–0.99) in Medicare and 0.79 (0.50–1.25) in MarketScan with a pooled HR (95% CI) of 0.74 (0.57–0.96). In the subgroup without DM, HR (95% CI) was 0.88 (0.67–1.14) in Medicare and 1.03 (0.76–1.40) in MarketScan with a pooled HR (95% CI) of 0.94 (0.77–1.14). For secondary outcomes (Figure 1), the pooled HR (95% CI) was 0.77 (0.59–1.00) for MI and 0.74 (0.57–0.97) for coronary revascularization in the whole cohort. There was a trend toward a decreased risk, albeit statistically insignificant, for MI and coronary revascularization in each subgroup. There was no significant difference in the risk for stroke/TIA and HF.

Figure 1. Cardiovascular safety of abatacept compared to TNF inhibitors



Conclusions: Among RA patients, abatacept may be associated with a reduced risk of coronary events compared to TNF inhibitors, particularly in patients with DM. The risk of HF was not different between these two groups.
Disclosure of Interest: None declared
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SAT0090 SUCCESS RATE OF BLOOD PRESSURE GOAL ACHIEVEMENT IN INFLAMMATORY JOINT DISEASES

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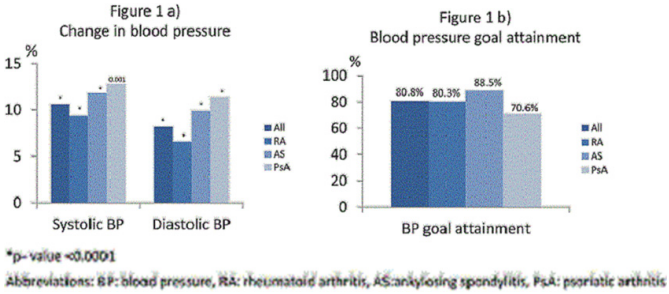
Background: The excess risk of cardiovascular disease (CVD) in patients with inflammatory joint diseases (IJD) is attributable to several risk factors, including a high prevalence of hypertension. However, there is limited knowledge on the effect of antihypertensive treatment (a-HTT) in these patients.
Objectives: Our objective was to initiate a-HTT when indicated and treat to guideline recommended blood pressure (BP) goal in IJD patients. We also aimed to evaluate the effect of a-HTT in this patient population, and which factors were associated with BP goal attainment.
Methods: Patients with IJD (n=765) were referred from a rheumatology outpatient clinic or general practitioners to a preventive cardio-rheuma clinic. All patients underwent a CVD risk evaluation, including BP measurements (performed using and Omron M7 apparatus). Antihypertensive treatment was initiated in accordance with guidelines, and the BP treatment goal was <140/90 mmHg.
Results: Of the 765 IJD patients referred (rheumatoid arthritis n=450, ankylosing spondylitis n=210 and psoriatic arthritis n=105), 104 (13.6%) had an indication for BP lowering, while 224 (29.3%) were already using a-HTT at the first consultation. For those where a-HTT was initiated at baseline (n=104), there was a highly significant change in BP from first to final consultation (Fig 1a). BP goal was achieved in 84 (80.8%) patients (Fig 1b), using mean±SD 3.1±1.7 consultations. Dose adjustments was done in 38 (36.5%) of the patients with median (IQR) a-HTT dose adjustments of 1 (1, 1.25). In 9 (8.7%) patients the



a-HTT was changed. Systolic BP ($p<0.0001$) was significantly associated with BP goal attainment in age- and sex adjusted logistic regression analyses, while the use of anti-rheumatic medication or inflammatory biomarkers at baseline was not. Patients with the lowest systolic BP were more likely to achieve BP goals. For patients already on a-HTT (n=224), only 52.7% had a BP <140/90 mmHg at baseline. After up titration or change of a-HTT, the percentage of patients achieving BP goal in this group increased to 82.6%.
Conclusions: This is to our knowledge the first prospective report on success rate of BP goal achievement in patients with IJD. Approximately 80% reached BP target, which is even a higher proportion than what is shown in the general population. Treatment to BP goal is feasible in patients with IJD, and is not complicated by inflammation or use of anti-rheumatic medication.
Disclosure of Interest: None declared
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SAT0091 IS CLINICAL ARTHRITIS ALWAYS PRECEDED BY SUBCLINICAL INFLAMMATION? A LONGITUDINAL STUDY AT JOINT LEVEL IN PATIENTS WITH ARTHRALGIA THAT DEVELOPED ARTHRITIS

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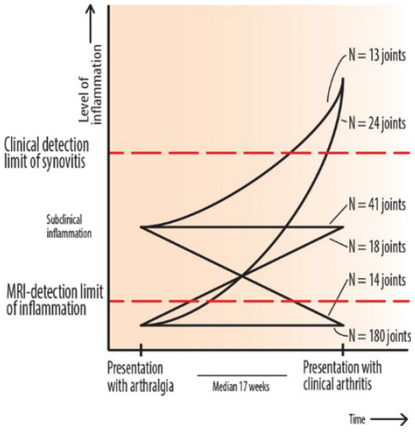
Background: The clinical phase of Rheumatoid arthritis (RA) is preceded by a phase with subclinical inflammation. MRI can detect subclinical inflammation and, at patient level, this is predictive for the development of clinical arthritis. However, at joint level it is unknown how arthritis develops. It is unknown how frequently joints with subclinical inflammation progress to clinical arthritis, and vice versa, how often joints that developed clinical arthritis had local subclinical inflammation during the preceding phase of arthralgia. A longitudinal MRI study in patients that developed arthritis can unravel if arthritis development is restricted to some locations in which the severity of inflammation increases over time or, alternatively, if the process is more generalized with a weak association between the locations of subclinical inflammation and subsequent clinical arthritis.
Objectives: This longitudinal study at joint level during progression from pre-RA to RA determined the relation between the location of subclinical inflammation and clinical arthritis over time.
Methods: 290 small joints (4 MCPs, 1 wrist, 5 MTPs per person) of 29 patients that presented with arthralgia and developed clinical arthritis were studied with 1.5T MRI at both time-points. MRIs were evaluated for BME, synovitis and tenosynovitis by three readers (ICCs 0.98, 0.96 and 0.97) that were blind to clinical data and the order in time. Subclinical inflammations was defined as presence of BME, synovitis and/or tenosynovitis.
Results: The median time between presentation with arthralgia and clinical arthritis development was 17 weeks. At presentation with arthralgia 68 joints had subclinical inflammation and no significant association was found between joint tenderness and the presence of local MRI-detected subclinical inflammation (OR 0.98; 95% CI 0.48–1.9). Over time, 21% of 68 joints had resolution of subclinical inflammation, 60% had persistent subclinical inflammation and 19% developed clinical arthritis. At arthritis development 37 joints were swollen. Of these, 24 (65%) had no prior subclinical inflammation at the time of presentation with arthralgia (Figure).



Conclusions: This first longitudinal MRI-study on joint level in pre-RA suggested that the majority of joints that developed clinical arthritis had no (long-lasting) preceding phase with subclinical inflammation.
Disclosure of Interest: None declared
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SAT0092 PROGRESSION OF ATHEROSCLEROSIS OVER 5 YEARS IN A COHORT OF EARLY INFLAMMATORY ARTHRITIS PATIENTS: RESULTS FROM THE NORFOLK ARTHRITIS REGISTER

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Background: Carotid artery intimal medial thickness (IMT) on ultrasound (US) is a validated measure of subclinical cardiovascular (CV) disease. Rates of IMT progression of 0.001cm/year[1] have been observed in the general population and faster progression is associated with increased CV risk.
Objectives: To describe change in IMT over 5 years in a cohort of early inflammatory arthritis (IA) patients and the association of IMT with estimated CV risk and IA related factors.
Methods: Between 2004 and 2010, patients enrolling in the Norfolk Arthritis Register (a UK inception cohort of IA patients) aged from 16 to 65 years with symptom duration less than 2 years, were invited to take part in the NOAR CVD sub-study. In addition to standard IA disease assessments at 0, 2 and 5 years, traditional CV risk factors were measured at baseline and Framingham based 10-year CV risk score was calculated. IMT was measured in the common carotid arteries at baseline and year 5 using a previously validated US protocol. Patient reported clinical CV events at follow up visits which were then verified by a physician. The associations of baseline CV risk and IA characteristics (tender and swollen joint count, rheumatoid factor, CRP, health assessment questionnaire (HAQ), baseline disease modifying anti-rheumatic therapy use) with baseline IMT (IMT_0) and change in IMT at year 5 (IMT_Δ) were tested using non-parametric statistics. The association of IMT_Δ with IA characteristics over time (cumulative joint counts, change in HAQ) and medication use during follow up (statins, biologic therapy) with IMT_Δ were explored using non-parametric statistics.
Results: 201 patients with a median (IQR) age and symptom duration of 51 (42, 58) years and 10.4 (7.7, 14.4) months respectively were studied. 143 (71%) subjects were female. Median IMT_0 was 0.06 (0.05, 0.07) cm and median IMT_Δ at 5-year follow up period was 0.01 (0, 0.01) cm with an estimated median annual IMT_Δ of 0.002cm. IMT had progressed in 104 (51.5%) patients and regressed in 23 (11.4%) patients by year 5. The median CV risk score at baseline was 5.6 (2.6, 10.7)% and was associated with IMT_0 but not IMT_Δ ($r=0.46, p<0.01$; $r=0.03$, $p=0.73$ respectively). There was no association between baseline IA characteristics and IMT_0 or IMT_Δ. There was a trend towards an association between cumulative swollen joint count and IMT_Δ ($r=0.14$, $p=0.057$) but no association with cumulative tender joint count, change in HAQ, statin or biologic use (all $p>0.05$). CV events occurred in 5 patients during follow up. Of these patients, 3 had IMT progression, 1 had no change and 1 had IMT regression.
Conclusions: Overall, patients with early IA had a higher than expected rate of IMT progression; a significant proportion however had regression in IMT over time. Trajectories of CV risk may vary within the IA population and identifying protective factors will help to better target strategies for CVD prevention in IA.
References:
[1] G Howard et al. Carotid artery intimal-medial thickness distribution in general populations as evaluated by B-mode ultrasound. ARIC Investigators. Stroke. 1993;24:1297–1304.
Disclosure of Interest: None declared
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SAT0093 HIGH TRIGLYCERIDES AND LOW HDL LIPID PROFILE AS A SURROGATE MARKER OF HDL DYSFUNCTION IN RA: POTENTIAL LINKS WITH INFLAMMATION AND OXIDATIVE STATUS

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Background: the interactions between inflammation and lipid profile in RA are