disease activity in RA, although the effect of the other antibiotics on disease activity should be examined.

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SAT0124

AORTIC STIFFNESS AND TIME TO WAVE REFLECTION ARE ASSOCIATED WITH LEFT VENTRICULAR DIASTOLIC DYSFUNCTION MEASURES IN RHEUMATOID ARTHRITIS

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Background: Patients with rheumatoid arthritis (RA) experience an increased frequency of heart failure with a preserved ejection fraction (HFpEF) (1). The treatment of HFpEF is currently suboptimal. Elucidation of the underlying pathophysiological mechanisms of HFpEF may provide potential targets for its management. Diastolic dysfunction often precedes the progression to HFpEF (2). Abnormalities in aortic function contribute to diastolic dysfunction in non-RA populations (3,4).

Objectives: The aim of this study was to determine whether impaired aortic function is associated with left ventricular diastolic dysfunction in RA.

Methods: Arterial function was determined by applanation tonometry using SphygmoCor software and left ventricular diastolic function was assessed by echocardiography in 176 patients with RA. Markers of arterial function included carotid femoral pulse wave velocity (PWV), central systolic and pulse pressure, pulse pressure amplification and the magnitude and timing of the forward and reflected waves. Markers of diastolic function included the ratio of early-to-late transmitral blood flow velocity (E/A), the ratio of E to the mean of the lateral and septal wall myocardial tissue lengthening at the mitral annulus (e')/(E/e') and the septal and lateral e'. Relationships of comprehensively evaluated arterial function with markers of LV diastolic function were determined in confounder adjusted multivariate regression models.

Results: The timing of the forward (Ft) and reflected (Rt) waves were each associated with E/A (Ft: partial $r=0.20$, $p=0.02$; Rt: partial $r=0.30$, $p=0.001$) and Rt was further associated with lateral e' (partial $r=0.36$, $p<0.0001$) and septal e' (partial $r=0.36$, $p<0.0001$); PWV was associated with E/e' (partial $r=0.18$; $p=0.03$). Reflected wave timing was associated with two indices of impaired relaxation (E/A<0.8: OR (95% CI)=0.51 (0.29-0.91), $p=0.01$; lateral e'<10: OR (95% CI)=0.43 (0.26-0.71), $p=0.001$); PWV was associated with an increased left ventricular filling pressure (E/e'>12: OR (95% CI)=1.58 (1.04-2.38), $p=0.03$).

Conclusions: Aortic stiffness and time to wave reflection are associated with increased filling pressure and impaired relaxation of the left ventricle, respectively. The development of diastolic dysfunction in RA may be partly mediated by changes in large artery function.

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SAT0125

THE IMPACT OF SELECTED COMORBIDITIES ON TREATMENT OUTCOME IN PATIENTS WITH RHEUMATOID ARTHRITIS: AN EXPLORATORY COHORT STUDY.

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Background: Patients with Rheumatoid Arthritis (RA) may present with various comorbidities resulting in worse treatment response.[1-2]

Objectives: To investigate the impact of selected comorbid diseases on RA outcome with the aim of Disease Activity Score in 28 joints-C-Reactive Protein (DAS28-CRP).

Methods: All our RA patients were included in this study. Patients' demographics, serology results and DAS28-CRP at the time of diagnosis and after 4 months of treatment initiation were collected. Patients' electronic hospital records were evaluated for a positive history of thyroid diseases, Diabetes Mellitus (DM), primary hyperparathyroidism, vitamin B12 deficiency and presence of other diagnosed autoimmune diseases.

Results: 1035 RA patients were included. 63.4% were female, mean of age 67.1 years, mean of disease duration 9.6 years, 58.6% rheumatoid factor positive and 51.3% anti-cyclic citrullinated peptide positive. The observed prevalence of thyroid diseases was 11.8%, DM 10.4%, primary hyperparathyroidism 2.8%, vitamin B12 deficiency 5.8%, and other diagnosed autoimmune diseases 1.6%. There were significant associations between presence of thyroid diseases and female gender ($p<0.001$); DM and greater age ($p<0.001$); primary hyperparathyroidism and longer disease duration ($p=0.002$); other diagnosed autoimmune diseases and antinuclear antibody positivity ($p<0.001$). RA patients with thyroid diseases ($p=0.001$) and other comorbid autoimmune diseases ($p<0.001$) had significantly poorer initial response to the RA treatment compared to patients with isolated RA. Univariate analyses revealed that age, presence of thyroid diseases, presence of other diagnosed autoimmune diseases and DAS28-CRP at the time of diagnosis were significantly associated with Δ DAS28-CRP. Additionally, multivariate analysis demonstrated that Δ DAS28-CRP deterioration was significantly correlated to the presence of thyroid diseases (unstandardized regression coefficient (standard error):-0.188(0.088), $p=0.030$) and presence of other diagnosed autoimmune diseases (-0.537(0.208), $p=0.010$). (table1)

Table 1. Univariate and multivariate analysis of risk factors for Δ DAS28-CRP.

	Variables	Univariate analysis	Multivariate analysis
	Backward analysis		
	Gender	0.028 (0.066)	0.058 (0.056)
Age	0.007 (0.002)**	0.003 (0.002)	
	Disease duration	0.000 (0.003)	- 0.003 (0.003)
IgM-rheumatoid factor	-0.055 (0.065)		0.014 (0.068)
	Anti-cyclic citrullinated peptide antibody	-0.098 (0.065)	-0.041 (0.068)
Antinuclear antibody	0.003 (0.086)		-0.042 (0.067)
	Presence of Thyroid diseases	-0.315 (0.098)**	-0.188 (0.088)*
0.160	(0.081)*		
	Presence of Primary		

Hyperparathyroidism-0.059 (0.193)0.008 (0.159)Presence of Diabetes Mellitus0.077 (0.104)-0.023 (0.086)Presence of vitamin B12 deficiency0.102 (0.136)0.047 (0.112)Presence of other diagnosed autoimmune diseases-0.895 (0.249)**-0.537 (0.208)*-0.565 (0.204)*Thyroid stimulating hormone level0.013 (0.008)0.011 (0.007)DAS28-CRP at time of diagnosis0.724 (0.027)*0.711 (0.029)**0.715 (0.029)**P value <0.05, ** P value <0.005

Conclusions: RA patients are at increased risk of specific comorbidities with possible impact on the treatment outcome. The authors, therefore, recommend to do periodical assessment of comorbidities to diagnose concurrent comorbid diseases as early as possible.

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SAT0126 CHARACTERIZING HETEROGENEOUS CARE PATHWAYS OF INCIDENT RHEUMATOID ARTHRITIS PATIENTS

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Background: Clinical pathway analysis is the process of characterizing clinical activities in patients' (pts) care. Little is known about the clinical pathways that pts with rheumatoid arthritis (RA) follow after their diagnosis, and how treatment patterns differ between such pathways.

Objectives: To identify and characterize distinct clinical pathways in the management of incident RA pts and evaluate differences in treatment patterns.

Methods: A retrospective cohort study was conducted in RA pts identified using electronic medical records of the Kaiser Permanente Southern California health plan. Between 01/01/2007 and 31/12/2015, we identified adult pts (aged ≥18 years) who had at least two RA diagnoses within a 12-month period, a disease-modifying antirheumatic drug (DMARD) prescription and laboratory test for anti-citrullinated peptide antibody. Latent class analysis (LCA) method was applied to identify ≥2 heterogeneous care pathways. RA-specific healthcare utilization during the first year following the RA diagnosis was used as a marker of underlying latent classes. We characterized the latent classes based on the distribution of markers, co-morbidities and RA treatment patterns including switch, augmentation and discontinuation of DMARDs. Chi-square and F-tests were used to evaluate differences between the classes.

Results: We identified 2843 incident RA pts. LCA indicated five latent classes representing mutually exclusive pathways of managing pts with RA. Pts in Class 1 (low disease activity-low progression) had lowest RA office visits and labs to detect inflammation with the highest DMARD discontinuation. Pts in Class 2 (low-disease activity-moderate progression) were characterized by higher lab, imaging and DMARD augmentation. Class 3 (moderate disease activity with pain) was characterized by highest use of NSAIDs across any class. Pts in Class 4 (high disease activity-moderate progression) were characterized by above-average RA office visits and the highest corticosteroid use. Class 5 (high disease activity-high progression) had pts with the highest number of RA office visits, biologic DMARD use, DMARD augmentation, DMARD switching and the lowest initial treatment discontinuation.

Classification factors	Class 1 n=367	Class 2 n=1105	Class 3 n=516	Class 4 n=616	Class 5 n=239	Total N=2843
Age, years (mean)*	54	56	56	60	50	56
Co-morbidities, n (mean)*	0.7	0.9	0.7	1.0	0.6	0.8
Female, %*	76	78	80	72	74	76
Medicare/Medicaid, %*	22	30	26	37	10	28
Switch to new DMARD, %*	2	5	9	8	13	6
Augment initial DMARD, %*	7	16	37	36	80	29
Discontinue initial DMARD, %*	73	49	31	30	6	41
Mean predicted utilization of select markers						
RA office visits, mean count	3	5	7	8	9	6
Traditional DMARD fills, mean count	3	4	6	6	5	5
Biologic DMARD fills, mean count	<0.01	0.01	0.02	0.04	6.5	0.56
NSAID fills, mean count	1	1	4	<0.5	2	1
Corticosteroid fills, mean count	1	1	2	4	3	2
CT scans, %	9	13	19	28	17	17
MRI, %	5	8	15	13	16	11
RF lab, %	2	22	17	19	15	17
ESR lab, %	29	98	88	93	97	85
CRP lab, %	7	74	66	65	75	61

*Difference between classes are statistically significant; p<0.05

Conclusions: We identified five distinct classes/care pathways; these could be used to identify care gaps, implement standardized care plans and guide quality initiatives in the management of pts with RA.

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SAT0127 THE EFFICACY OF TOFACITINIB IN PATIENTS WITH RHEUMATOID ARTHRITIS STRATIFIED BY BASELINE BODY MASS INDEX

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Background: Tofacitinib is an oral Janus kinase inhibitor for the treatment of rheumatoid arthritis (RA).

Objectives: This post hoc analysis aims to explore the efficacy of tofacitinib in patients (pts) with RA based on their baseline (BL) body mass index (BMI).

A) ACR20 response rates

B) ACR50 response rates

C) ACR70 response rates

*p<0.05; **p<0.001; ***p<0.0001 vs placebo
 ACR, American College of Rheumatology; BID, twice daily; BMI, body mass index; CI, confidence interval; FAS, full analysis set; NRI, non-responder imputation

Figure 1. ACR20/50/70 response rates at Month 6 for each treatment group stratified by BMI category (FAS, NRI). *p<0.05; **p<0.001; ***p<0.0001 vs placebo. ACR, American