with eGFR and TP clinically (β=0.955, 3.349; *p*=0.025, 0.008), and with CS pathologically (β=1.231, *p*=0.028). Neither AS nor AS-WL was included in the prognostic factors. Kaplan-Meier method with log-rank tests showed a significant difference in cumulative rate of CKD and/or death between CS ≥3 and CS <3 groups (*p*=0.049).

Conclusion: AS and CS were related to different clinical parameters at the time of renal biopsy. CS was associated with renal and life prognoses, while neither AS nor AS-WL was. These results revealed that these scores have different clinicopathological significance in LN.

References:
[1] Bajema IM, et al. Kidney Int. 2018;93:789-96.
[2] Zoshima T, et al. Lupus 2019, accepted.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.3016

FRIDAY, 05 JUNE 2020

Vasculitis

FRI0189 ENDOTHELIAL PROTEIN C RECEPTOR AND SCAVENGER RECEPTOR CLASS B TYPE 1 NEGATIVELY REGULATE ENDOTHELIAL ACTIVATION AND REPRESENT NOVEL AUTOANTIGENS IN TAKAYASU ARTERITIS

T. Shirai[1], T. Mutoh[1], H. Fujii[1], T. Ishii[1], H. Harigae[1]. [1]*Tohoku University Graduate School of Medicine, Hematology & Rheumatology, Sendai, Japan*

Background: Takayasu arteritis (TAK) is a chronic granulomatous vasculitis and affects large vessels in young female. It has been recognized that high numbers of patients with TAK possessed autoantibodies against vascular endothelium, which are called anti-endothelial cell antibodies (AECAs). Although their target antigens had not been identified for a long time, we utilized an expression cloning system for specific identification of cell-surface antigens and successufully identified endothelial protein C receptor (EPCR) and scavenger receptor class B type 1 (SR-BI) as major novel autoantigens in TAK. It was possible that identified novel autoantibodies were utilized for clinical application and elucidating pathomechanisms of TAK.

Objectives: To reveal the clinical impact and pathogenic potential of novel autoantibodies in TAK

Methods: Three hundred twenty-five patients with autoimmune diseases were enrolled: 80, TAK; 10, giant cell arteritis (GCA); and 235, other autoimmune diseases. The expressions of EPCR and SR-BI were examined in the aortic tissue from several diseases by immunohistochemistry. The presence of novel autoantibodies was measured in TAK and other autoimmune diseases. Clinical characteristics of patients with these autoantibodies were evaluated in TAK. To investigate the pathogenetic potential of these novel autoantibodies, vascular endothelial cells from umbilical vein, aortic artery, and pulmonary artery were examined for the endothelial cell activation. The effects of the novel autoantibodies upon the differentiation of immune cells were also evaluated.

Results: In non-inflammatory aortic tissue, the expressions of EPCR and SR-BI were observed in the endothelium of vasa vasorum. Their expressions in the endothelium were augumented in TAK tissue. Novel autoantibodies against EPCR or SR-BI were detected in 34.6 % or 36.5 % of cases, respectively in TAK, and overlap was obsereved only in two cases, indicating their exclusive nature. These autoantibodies were specific for TAK among autoimmune rheumatic diseases, and they were not detected in patients with GCA with cranial involvement, suggesting different pathomechanisms among these diseases. The clinical characteristics of patients with anti-EPCR autoantibodies included high prevalence of stroke and ulcerative colitis. Surprisingly, anti-EPCR autoantibodies were also detected in patients with primary ulcerative colitis, suggesting their common pathomechanisms with TAK. Serial measurement of these novel autoantibodies revealed their correlation with disease activity of TAK. In machanistic studies, EPCR and SR-BI functioned as negative regulators of endothelial activation and chemokine production. EPCR further functioned in human T cells and ameliorated Th17 differentiation. Autoantibodies against EPCR and SR-BI blocked the functions of their targets, thereby promoting pro-inflammatory phenotype.

Conclusion: EPCR and SR-BI are preferentially expressed in the endothelium of vaso vasorum and upregulated in TAK tissue. Autoantibodies against EPCR or SR-BI are specific for TAK among autoimmune rheumatic conditions and detected in about 70 % of TAK, suggesting their usefulness for the diagnosis, subclassification, and monitoring of TAK. Autoantibodies inhibit the resolution of activated immune responses and thus would lead to the chronic vascular inflammation.

References:
[1] Shirai T et al. Arthritis Res Ther 2012;14:R157.
[2] Shirai T et al. Clin Dev Immunol 2013;2013:453058.
[3] Shirai T et al. J Neuroinflammation. 2013;10:128

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.654

FRI0190 COMPARATIVE EFFICACY AND SAFETY OF MYCOPHENOLATE MOFETIL VERSUS CYCLOPHOSPHAMIDE IN PATIENTS WITH ACTIVE ANTINEUTROPHIL CYTOPLASMIC ANTIBODY-ASSOCIATED VASCULITIS: A META-ANALYSIS OF RANDOMIZED TRIALS

Y. H. Lee[1], G. G. Song[1]. [1]*Korea University, Rheumatology, Seoul, Korea, Rep. of (South Korea)*

Background: Cyclophosphamide (CYC) is effective for induction of remission of AAV, resulting in complete remission rates of around 70%. Thus, CYC has been the standard remission induction therapy for antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV); however, it is toxic and causes infections, malignancies, and infertility. Therefore, other agents that are less toxic but that have similar efficacy were explored. Since the disease course of AAV usually requires long-term immunosuppression, mycophenolate mofetil (MMF), a less toxic agent compared to CYC, has been explored as an alternative to CYC.

Objectives: The aim of this study is to assess the efficacy and safety of MMF versus cyclophosphamide CYC in patients with active AAV.

Methods: We performed a meta-analysis of four randomized clinical trials (RCTs) (300 patients) to examine the relative efficacy and safety of MMF compared to CYC in patients with active AAV.

Results: There was no significant difference in remission at 6 months between MMF and CYC (OR 1.311, 95% confidence interval [CI] 0.570 – 3.017, *P* = 0.524). Additionally, the relapse rate did not differ between the MMF group and CYC group (OR 1.331, 95% CI 0.497 – 3.568, *P* = 0.570). There was no significant difference in serious adverse event (SAE) (OR 1.232, 95% CI 0.754 – 2.014, *P* = 0.404) and infection rate (OR 0.958, 95% CI 0.561 – 1.634, *P* = 0.873) between the MMF and CYC groups. Some heterogeneity was found in the meta-analysis of remission and relapse rate (*I2* = 57.4%, 63.4%), but no between-study heterogeneity was found during the meta-analysis of the SAE and infection rate. Egger's regression test showed no evidence of publication bias (Egger's regression test *P*-values > 0.1).

Conclusion: MMF was an equally effective alternative treatment to CYC, and MMF was comparable to CYC in patients with active AAV in terms of safety, suggesting that MMF can be used as an alternative to CYC for remission induction in AAV.

References:
[1] Han F, Liu G, Zhang X, Li X, He Q, He X, Li Q, Wang S, Wang H, Chen J (2011) Effects of mycophenolate mofetil combined with corticosteroids for induction therapy of microscopic polyangiitis. Am J Nephrol 33:185-192
[2] Jones RB, Hiemstra TF, Ballarin J et al (2019) Mycophenolate mofetil versus cyclophosphamide for remission induction in ANCA-associated vasculitis: a randomised, non-inferiority trial. Ann Rheum Dis 78:399-405
[3] Tuin J, Stassen PM, Bogdan DI, Broekroelofs J, van Paassen P, Cohen Tervaert JW, Sanders JS, Stegeman CA (2019) Mycophenolate Mofetil Versus Cyclophosphamide for the Induction of Remission in Non-life-Threatening Relapses of Antineutrophil Cytoplasmic Antibody-Associated Vasculitis: Randomized, Controlled Trial. Clin J Am Soc Nephrol 14:1021-1028
[4] Hu W, Liu C, Xie H, Chen H, Liu Z, Li L (2008) Mycophenolate mofetil versus cyclophosphamide for inducing remission of ANCA vasculitis with moderate renal involvement. Nephrol Dial Transplant 23:1307-1312

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.659

FRI0191 CRANIAL-LIMITED AND LARGE-VESSEL GIANT CELL ARTERITIS: PRESENTING FEATURES AND OUTCOME

A. Tomelleri[1], C. Campochiaro[1], S. Sartorelli[1], N. Farina[1], E. Baldissera[1], L. Dagna[1]. [1]*San Raffaele Hospital, Unit of Immunology, Rheumatology, Allergy and Rare Diseases, Milano, Italy*

Background: Giant cell arteritis (GCA) comprises two main phenotypes: cranial (C) and large-vessel (LV) disease[1]. A full baseline steroid-free vascular imaging evaluation is required to properly diagnose LV involvement[2]

Objectives: To compare presenting and prognostic features of LV-GCA and C-GCA patients after an adequate vascular imaging evaluation at baseline
Methods: Data from GCA patients followed-up at our Institution were retrospectively collected. Only patients who underwent large-vessel imaging (PET, CTA, MRA) at disease onset or within 1 week after steroid introduction were included. Patients with evidence of LV involvement were classified as LV-GCA. Differences between LV-GCA and C-GCA patients regarding presenting features, treatment, prognosis were evaluated. Non-parametric tests were used
Results: In our cohort, we identified 161/280 patients who underwent LV-imaging study at baseline. Of these, 100 (62.1%) had signs of LV inflammation. Table 1 compares demographic features, diagnostic delay, pre-existing comorbidities and complementary treatment between the 2 groups. Table 2 compares disease features at diagnosis. Mean follow-up was similar between LV- and C-GCA patients (31.8±31.8 vs 27.8±29.1 months; 70% vs 73.8% followed-up ≥12 months). Corrected cumulative prednisone dose (CCPD, grams/months) was equivalent (LV, 0.67±0.57; C, 0.87±1.37; p=0.871). A DMARD was added in 73% of LV- and in 55.7% of C-GCA patients (p=0.027), but, notably, it was introduced at baseline in 52% of LV- vs 23.5% of C-GCA patients (p=0.006). CCPD was equivalent even considering only patients who did not receive DMARDs (LV, 0.92±0.81; C, 0.94±1.18; p=0.522). Frequency of relapses was not significantly different (LV, 51%; C, 57.3%, p=0.515), even when considering only DMARD-receiving patients (LV, 36.1%; C, 38.2%, p=0.833). Aortic aneurysms incidence at 5 years was similar (LV, 17.3%; C, 15.7%; p=0.826). Rate of metabolic and infective complications was similar, in terms of arterial hypertension (LV, 3%; C, 0%, p=0.286), diabetes (2% vs 0%, p=0.524), osteoporotic fractures (7% vs 5%, p=0.742), severe infections (3% vs 3.3%, p=1)

Table 1. Demographic features, diagnostic delay, pre-existing comorbidities, and complementary treatment at baseline in LV and C-GCA patients

	LV imaging + n=100 (%)	LV imaging - n=61 (%)	p-value
Age (years)	73.2 ± 8.9	76 ± 8.8	0.018
Sex (female)	65 (65)	40 (65)	1
Diagnostic delay (months)	3.5 ± 4.6	2.3 ± 4.9	0.001
Pre-existing comorbidities			
- CAD	3 (3)	7 (11.5)	0.043
- Diabetes	4 (4)	6 (9.8)	0.181
- Dyslipidemia	17 (17)	17 (27.9)	0.114
- Hypertension	42 (42)	34 (55.7)	0.105
- Stroke	3 (3)	3 (5)	0.674
- Cancer	20 (20)	6 (9.8)	0.122
Ongoing complementary treatment			
- Antiplatelet	18 (18)	15 (25)	0.322
- Anticoagulant	1 (1)	6 (9.8)	0.012
- Statin	14 (14)	14 (23)	0.198

Table 2. Diseases features at onset in LV and C-GCA patients

	LV imaging + n=100 (%)	LV imaging - n=61 (%)	p-value
Temporal biopsy positive	17/31 (55)	9(43)	0.573
Symptoms			
- Headache	65 (65)	52 (85)	0.006
- Jaw claudication	22 (22)	20 (32.8)	0.142
- Scalp tenderness	31 (31)	26 (42.6)	0.174
- Ocular symptoms	14 (14)	20 (32.8)	0.006
- Ischemic optic neuropathy	7 (7)	17 (27.9)	<0.001
- Stroke	3 (3)	0 (0)	0.290
- Polymyalgia rheumatica	42 (42)	31 (50.8)	0.328
- Fever	44 (44)	12 (19.7)	0.002
- Fatigue	72 (72)	21 (34.4)	<0.001
- Weight loss	37 (37)	7 (11.5)	<0.001
- Cough	10 (10)	1 (1.6)	0.053
Laboratory findings, mean			
- C-reactive protein, mg/L	80.8 ± 60.8	65.7 ± 58.2	0.057
- Erythrocyte sedimentation rate	76.8 ± 30	71.5 ± 27	0.360
- Hemoglobin, g/dL	11.4 ± 1.5	12 ± 1.6	0.007
- Platelet count	389.4 ± 116.6	366.8 ± 125.2	0.758

Conclusion: LV-GCA patients are younger and suffer of a greater diagnostic delay. Although a greater systemic inflammation seems to be a feature of LV-GCA patients, the vascular prognosis is similar to C-GCA patients, who, conversely, have a greater incidence of ocular complications
References:
[1] Dejaco C, et al. Nat Rev Rheumatol (2017)
[2] Kermani T, et al. Rheumatology (2019)
Disclosure of Interests: Alessandro Tomelleri: None declared, Corrado Campochiaro Speakers bureau: Novartis, Pfizer, Roche, GSK, SOBI, Silvia Sartorelli: None declared, Nicola Farina: None declared, Elena Baldissera Speakers bureau: Novartis, Pfizer, Roche, Alpha Sigma, Sanofi, Lorenzo Dagna Grant/research support from: Abbvie, BMS, Celgene, Janssen, MSD, Mundipharma Pharmaceuticals, Novartis, Pfizer, Roche, SG, SOBI, Consultant of: Abbvie, Amgen, Biogen, BMS, Celltrion, Novartis, Pfizer, Roche, SG, and SOBI
DOI: 10.1136/annrheumdis-2020-eular.705

FRI0192 **MORTALITY IN IGA VASCULITIS: A LONGITUDINAL POPULATION-BASED STUDY**

J. Nossent[1,2], M. Ognjenovic[1], W. Raymond[1], H. Keen[1,3], C. Inderjeeth[1,2], D. Preen[4]. [1]*The University of Western Australia, Rheumatology Section, School of Medicine, Crawley, Australia*; [2]*Sir Charles Gairdner Hospital, Rheumatology, Nedlands, Australia*; [3]*Fiona Stanley Hospital, Rheumatology, Murdoch, Australia*; [4]*The University of Western Australia, School of Population and Global Health, Crawley, Australia*

Background: There is sparse population-level data on outcome in patients with Immunoglobulin-A vasculitis (IgAV) and none from Australia
Objectives: We compared long-term mortality for paediatric and adult IgAV patients with age- and gender-matched controls.
Methods: Linked health data for pediatric (<20 years=473) and adult (20+ years, n=267) IgAV patients were obtained from state-wide hospital and deaths registries in Western Australia for the period 1980-2015. All-cause mortality rates (MR) (deaths/1000 person-years) were compared with controls using mortality rate ratios (MRR) and with the general population of Western Australia by standardised mortality rate ratios (SMRR) with Poisson derived 95% confidence intervals (CI). We used Kaplan-Meier survival estimates and multivariate Cox regression derived hazard ratios (HR) for time dependent analyses.
Results: In pediatric patients (mean age 7.2 years, 60 % male) MRR was 1.27 (CI: 0.34-4.08, p=0.68) and SMRR was 2.31 (CI: 0.72-5.7, p=0.47) (Table 1) with a 20-year survival rate (>99%) similar to controls. Despite higher rates of renal failure (1.5% vs 0.2%, p=0.002) deaths in pediatric IgAV patients were mainly from unrelated causes. In adult IgAV patients (mean age 55.8 years, 48% males) MMR was 2.06 (CI 1.70-2.50, p<0.01) and SMRR 6.16 (3.04 -14.3, p<0.01) (Table) during a mean of 19.5 years follow-up with significantly reduced survival at five (72.7 vs. 89.7 %) and twenty years (45.2% vs. 65.6 %) (p<0.05). Renal disease (HR: 1.47, CI 1.04 - 2.06), the presence of any comorbidity (HR:1.30, CI 1.23 - 1.37) and male gender (HR:1.23; CI 1.04 - 1.47) were independent predictors of death. While cardiovascular events (34.2%) and malignancy (19.4%) were the most frequent causes of death, only death from infections (5.8 vs 1.8%, p=0.02) and renal disease (3.6 vs 1.8%, p=0.03) were more frequent in adult IgAV patients than controls.
Mortality data for childhood and adult-onset IgAV patients and controls. Figures indicate mean (±SD), numbers (%) or rate/1000 patient months (95% CI)

	Pediatric			Adult		
	IgAV	Controls	P value	IgAV	Controls	P
Mean follow-up (yrs)	22.71 (±5.2)	23.75 (±3.17)	0.001	11.9 (±9.04)	15.94 (±8.30)	0.001
Non-survivors (%)	<5 (0.8)	9 (0.9)	0.5	137 (51.3)	394 (33.4)	<0.001
Person-years	10275	29520		3178	18815	
MR	0.39 (0.1, 0.9)	0.30 (0.1, 0.5)		43.11 (36,1,50.9)	20.94 (18.9, 23.1)	
MRR	1.27 (0.34, 4.08)		0.67	2.06 (1.70, 2.50)		<0.001
SMRR	2.31 (0.71, 5.71)		0.71	6.16 (3.04, 14.3)		<0.001

Conclusion: Compared to controls and general population, mortality risk was not increased in paediatric IgAV patients for at least 20 years following diagnosis despite a higher rate of end stage renal failure. However, in adult IgAV patients, all-cause mortality risk was six times higher than in the general population leading to significantly reduced five-year survival, especially for male patients with comorbidity including renal disease.
Acknowledgments: The authors thank the Data Custodians of the Hospital Morbidity Data Collection (HMDC), Emergency Department Data Collection (EDDC), the Western Australian Cancer Registry (WACR), the State Registry of Births, Deaths and Marriages, the WA Electoral Commission, and the NCIS for use of the CODURF dataset, and the staff at Data Linkage Branch at the Western Australian Department of Health for their assistance in provision of data. This work was supported by an unrestricted grant from the Arthritis Foundation of Western Australia. Author WDR received a PhD Scholarship in Memory of John Donald Stewart from the Arthritis Foundation of Western Australia.
Disclosure of Interests: Johannes ("Hans") Nossent Speakers bureau: Janssen, Milica Ognjenovic: None declared, warren raymond: None declared, Helen Keen Speakers bureau: Pfizer Austrlaia, Abbvie Australia, Charles Inderjeeth Consultant of: Linear Research Perth, David Preen: None declared
DOI: 10.1136/annrheumdis-2020-eular.1655