with eGFR and TP clinically (β=0.955, 3.349; p=0.025, 0.008), and with CS pathologically (β=1.231, p=0.026). 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 clinico-pathological significance in LN.

**References:**

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2020-eular.3016

FRIDAY, 05 JUNE 2020

Vasculitis

**FRIO189**

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

T. Shiral i, T. Mutoh, H. Fujii, T. Ishii, H. Harigae. 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 (AECA s). 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 successfully 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 vaso rumin. Their expressions in the endothelium were augmented 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 observed 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 mechanistic studies, EPCR and SR-BI functioned as negative regulators of endothelial activation and chemokine production. EPCR further contributed 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 vaso rumin 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.
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 one 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±21.9 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 who did not receive DMARDs (LV, 0.92±0.81; C, 0.94±1.18; p=0.522). Frequency of vascular events (34.2%) and malignancy (19.4%) were the most frequent causes of death 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 was 6.16 (3.04 -14.3, p<0.01) (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 was 6.16 (3.04 -14.3, p<0.01) (Table 1) 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).

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") Nossett Speakers bureau: Abbvie, BMS, Celgene, Janssen, MSD, Mundipharma, Amgen, Biogen, BMS, Celtrion, Novartis, Pfizer, Roche, SG, SOBI, Milica Ognjenovic: None declared, warren raymond: None declared, Helen Keen Speakers bureau: Pfizer Australie, Abbvie Australie, Charles Indejeuth Consultant of: Lisenced Research Perth, David Preen: None declared

DOI: 10.1136/annrheumdis-2020-eular.1655