results expressed according to their distribution. Categorical data, expressed in percentages, were analysed with χ^2 test and variance analysis. The associations of independent variables were analysed with one-tail exact Fisher test. Simple logistic regression was used for variable associations. The interobserver correlation was tested with calculation of the kappa coefficient.

Results: A poor interobserver correlation was found among pathologists (kappa = 0.19), and no airway sign or symptom was predictive of a positive GPA biopsy. Several pitfalls were noticed: lack of adequate clinical information on files (including endoscopic); incomplete relevant information sent to pathologists and inadequate tissue sampling. Nevertheless, in patients with generalised disease, a 2.6 probability to obtain a diagnostic GPA airway biopsy was found. After expert pathologist's review, and applying Devaney et al and Travis et al proposed criteria, from 16 initial GPA diagnoses, the number increased to 25. It further raised to 35/50 randomised biopsies when ANCA results were incorporated, and the EMA algorithm was applied.

Conclusions: Carefully retrieved clinical, endoscopic and serological data, coupled with systematic histopathologic sample review in patients with a GPA suspicion shall be incorporated in an orderly fashion in order to increase the diagnostic yield of this malady, especially in patients with the limited form of the disease.

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AB0682

RISK FACTORS ASSOCIATED WITH RELAPSE OF ANTI-NEUTROPHIL CYTOPLASMIC ANTIBODY-ASSOCIATED VASCULITIS

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Background: Several factors increasing the risk of anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis have been reported. These include pulmonary and cardiovascular lesions, PR3-ANCA-positivity in patients with granulomatosis with polyangiitis, and persistent ANCA-positivity or an increase in the titer of such antibodies.

Objectives: We aimed to identify potentially novel factors predicting relapse in patients with ANCA-associated vasculitis.

Methods: We reviewed data on 73 patients (61 with microscopic polyangiitis [MPA], 12 with granulomatosis with polyangiitis [GPA]; 46 females) treated in our centre from 1998 to 2017 for whom medical histories were available. All achieved at least one remission after induction therapy. Relapse was defined as novel organ involvement or a need for therapy intensification. Follow-up continued to the first relapse or for as long as possible if no relapse was noted.

Results: The median age at disease onset (interquartile range) was 74 years (range: 67–80 years). The relapse rate was 42.5% (MPA 41%, GPA 50%), thus not significantly different between the two groups ($p=0.75$). The median follow-up duration was 23 months (range: 11–65 months) and the median time to relapse was 18 months (range: 10.5–54 months). Although pulmonary and cardiac lesions reportedly increase the relapse rate, neither contributed significantly to the rate in this study. Furthermore, ANCA-positivity after remission and increases in ANCA levels prior to relapse did not significantly increase the relapse risk. In terms of medical histories recorded at the time of first onset of disease, the frequency of diabetes, dyslipidemia, coronary artery disease, and cerebral infarction did not differ significantly between patients who did and did not relapse. However, in MPA patients, a history of hypertension was significantly less in those who relapsed ($p=0.01$). In a multiple logistic regression analysis adjusted for sex and age, history of hypertension was a significant predictor of fewer relapse (odds ratio: 0.23; 95% confidence interval 0.07–0.69, $p=0.009$).

Abstract AB0682 – Table 1. The clinical characteristics of two groups

	Relapse, n=31	Non-relapse, n=42	p	OR (95% CI)
Age, years	70.8±10.8	74.6±9.2	0.10	-
Mean±SD	73 (65–79)	76 (68–82)		
Median (interquartile range)				
Median follow up, month	18 (11–54)	30 (13–67)	-	-
*Time to 1st relapse				
Male/female	10/21	17/25	0.62	0.7 (0.23–2.05)
ANCA phenotype, n (%)	4 (13.0%)	7 (16.7%)	0.75	0.74 (0.14–3.29)
PR3-ANCA	27 (87.1%)	36 (85.7%)	>0.99	1.12 (0.24–5.97)
MPO-ANCA				
Disease type, n (%)	6 (19.4%)	6 (14.3%)	0.75	0.70 (0.17–2.94)
GPA	25 (80.6%)	36 (85.7%)		
MPA				
Organ involvement	24	33	>0.99	0.94 (0.27–3.41)
Pulmonary	1	2	>0.99	0.67 (0.01–13.44)
Cardiovascular				
Medical histories	7	3	0.09	3.70 (0.76–24.44)
Diabetes mellitus	9	7	0.26	
Dyslipidemia	10	28	0.005	2.02 (0.58–7.43)
Hypertension				0.24 (0.08–0.71)

ANCA: antineutrophil cytoplasmic antibody; PR3: proteinase 3; MPO: myeloperoxidase; GPA: granulomatosis with polyangiitis; MPA: microscopic polyangiitis; OR: odds ratio; 95% CI: 95% confidence interval

Conclusions: In addition to known factors, a history of hypertension recorded at the time of disease onset may predict fewer MPA relapse.

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AB0683

TREATMENT WITH STATINS IN PATIENTS STUDIED BY FDG-PET/CT FOR POSSIBLE LARGE VESSEL VASCULITIS IS ASSOCIATED WITH A LOW VASCULAR SCORE

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Background: Polymyalgia rheumatica (PMR), giant cell arteritis (GCA), and fever of unknown origin (FUO) may show large vessel vasculitis (LVV) when studied with FDG-PET/CT. Statins, widely used to lower cholesterol concentrations, have shown anti-inflammatory activity in both the atherosclerotic plaque and in rheumatoid arthritis.

Objectives: To test the hypothesis that the concomitant treatment with statins induces a low uptake of the vessels in patients with PMR, FUO and GCA.

Methods: Consecutive patients with a diagnosis of PMR, GCA or FUO underwent a thorough clinical examination, including drug history, and a PET/CT scan. Arterial uptake of FDG was scored relative to liver uptake as 0=no uptake present, 1=lower than liver uptake, 2=similar to liver uptake, 3=higher than liver uptake. The values of each district were summed to obtain a total vascular score (TVS). A further semi-quantitative analysis of FDG uptake was carried out, drawing regions of interest (ROIs) on the theoretical arterial wall and within the left ventricular chamber (blood-pool, BP). Arterial FDG uptake was quantified by calculating the mean standardised uptake value (SUV) within each ROI and the results expressed as the ratio between mean SUV value of each ROI and BP ROI (SUV/BP).

Results: 129 patients were included, 87 women, with median age of 74 years (range 50–92). 95 patients were diagnosed with PMR, 13 with GCA, 16 with both PMR and GCA and 5 patients presented with FUO. 37/129 patients (28.7%) were assuming glucocorticoids (GC) at the time of examination. The mean interval between onset of symptoms and PET/CT was 85 days (range 4–1957 days). LVV was present in 75 patients (58.2%) when a cut-off ≥ 2 was used and 32 patients (24.8%) had a score of 3.

Twenty/129 patients (15.5%) were treated with statins for hypercholesterolemia. The median TVS was significantly lower in these patients when compared with those not treated with statins (8 [range 1–27] vs. 12 [range 0–42], $p=0.02$). This difference was present at the ascending aorta ($p=0.017$), the aortic arch ($p=0.023$), and the femoral arteries ($p=0.025$). The analysis of SUV was not

significant ($p=0.45$). As expected, the arterial calcium load, corresponding to the extent of vessel calcification, was higher in patients treated with statins (14 [range 2–35] vs. 8 [range 0–35]; $p=0.012$). However, calcium load did not correlate with the TVS, whereas it inversely correlated with SUVs ($p=0.03$). At multiple regression, assumption of statins was not predicted by sex, type of diagnosis, GC treatment or presence of LVV at PET/CT. Only age predicted statin therapy ($p=0.04$), but age was not associated with LVV ($p=0.23$). Among clinical features, only fever was significantly less frequent in patients treated with statins ($p=0.03$).

Conclusions: With the limits of an observational retrospective study, our data suggest that treatment with statins may lower arterial uptake in patients studied for LVV. This finding was seen using the theoretically more subjective TVS but not with SUV analysis. We feel that the latter is more easily influenced by the presence of calcific plaques, as suggested by its inverse correlation with arterial calcium load. The role of statins in tempering arterial inflammation deserves further studies.

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AB0684 A REVIEW OF TEMPORAL ARTERY BIOPSIES AT A DISTRICT GENERAL HOSPITAL

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Background: Giant cell arteritis is the most common vasculitis in the western world in the over 50 population. The morbidity associated with its natural progression and treatment is significant. No single investigation has been identified to accurately confirm or reject its diagnosis, though for some years biopsy of the superficial temporal artery has been carried out to support the diagnostic process. More recently, doppler ultrasound of the artery has gained prominence, though its widespread use is limited.

Temporal artery biopsy (TAB) is a significant use of resources, involving a surgeon and their team, as well as a histopathologist. It is an invasive procedure with the risks that this entails. It behoves the referring doctor to ensure that the probability of a positive result is as high as practicable.

Objectives: To determine the factors providing the highest likelihood of a positive TAB result.

Methods: The notes of all patients undergoing a TAB during a 3 year period 2013–2016 were requested from the Medical Records department at a district general hospital. The first 100 of these were reviewed by the authors. Each set of notes was examined for the following:

- Demographics (sex, age)
- The first department the patient was referred to (Rheumatology/Ophthalmology/Neurology/direct from the General Practitioner to Vascular Surgery)
- Period of time from symptom onset to biopsy
- Period of time on steroids to biopsy
- Initial dose of steroids prescribed
- Pre-treatment ESR
- Pre-treatment CRP
- Presence of symptoms (headache/jaw claudication/polymyalgia rheumatica)
- Other causes for a raised ESR
- The pre-test probability of a positive TAB result as assessed by the reviewer
- TAB result as reported by local histopathologist
- Evidence of the biopsy result impacting treatment

Results: Of the 100 TAB's reviewed, 16 yielded positive results (16%). A breakdown of the notes review for these patients is included in the following table:

Abstract AB0684 – Table 1

Positive TAB	16/100	Visual symptoms	6/16
Age (years)	58–88, Mean 73	Jaw claudication	5/16
Female:Male	13:3	Headache	11/16
GP referral direct to Vascular Surgery	5/16	PMR	1/16
Initial referral to Rheumatology	4/16	Other causes of raised ESR	3/16
Initial referral to Ophthalmology	4/16	Pre-test probability of positive result	9/16
Initial referral to Neurology	3/16	Biopsy influencing treatment	6/7
Symptom onset to TAB (days)	14–90, Mean 52		
Steroid duration before TAB	1–28 days		
Steroid starting dose range	30–500 mg		

Conclusions: This study has shown that less than a fifth of TAB's conducted during this period at our district general hospital yielded a positive result. There is scope to improve this yield significantly if we identify candidates for TAB better.

There was no positive result for any of the 16 patients less than 58 years of age. The majority had a raised CRP and ESR, though one patient had a CRP of 2. This reflects the need for vigilance before discounting GCA as a diagnosis. One patient had a positive TAB even after 28 days of prednisolone 40 mg daily. The majority (14/16) had their biopsy within 3 weeks of steroid initiation, indicating that a short delay in biopsy does not rule out a positive result.

This study will help us develop a local pathway including Ophthalmology, Neurology, Vascular Surgery and Primary Care to improve the yield of positive TAB. This will improve patient experience as well as ensure appropriate use of resources.

Disclosure of Interest: None declared

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AB0685 THE INCIDENCE OF GIANT CELL ARTERITIS IN SLOVENIA – PROSPECTIVE STUDY

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Background: Giant cell arteritis (GCA) represents the most common vasculitis in adults over age of 50 years in Europe. Recently the diagnostic options greatly improved with the implementation of imaging techniques such as colour Doppler ultrasonography (CDS) and positron emission tomography-computed tomography (PET/CT).

Objectives: The aim of our single centre prospective study was to determine the incidence of GCA in well-defined Slovenian region, based on the temporal artery (TA) biopsy (TAB) and/or the result of CDS and/or PET/CT.

Methods: The study was conducted at University medical centre Ljubljana (UMC Ljubljana), that represents the only secondary/tertiary centre in a region, serving a population of 3 23 297 residents aged 50 years or more (1 76 104 females and 1 47 193 males). Patients with suspected GCA are referred either to the Department of Rheumatology, or in case of severe visual disturbances, to the Department of Ophthalmology. In the analysis we included all GCA cases diagnosed between 1 January 2012 and 31 December 2017. The diagnosis of cranial GCA (c-GCA) was established with the help of American College of Rheumatology (ACR) 1990 classification criteria, positive TAB and/or TA CDS. Cases of extracranial large vessel vasculitis (lv-GCA) were diagnosed using CDS of branches of the aortic arch and/or PET-CT.

Results: During the six-year observation we identified 169 new GCA cases (66.3% females), with a median (IQR) age of 75.1 (68.6–80.0) years. Forty-two (24.8%) patients had lv-GCA, and the others had c-GCA. One-hundred and thirty-nine patients (24 lv-GCA and 115 c-GCA) fulfilled ACR 1990 classification criteria. The others patients had positive arterial CDS or PET-CT (18 CDS, 9 CDS and PET-CT, 3 PET-CT). TAB was performed in 119 patients and was positive in 88.2%. Clinical characteristics of our GCA cases are presented in table 1. The estimated annual incidence rate of GCA was 8.7 per 1 00 000 adults aged ≥ 50 years (95% CI 7.5–10.1), in c-GCA 6.5 per 100.000 adults aged ≥ 50 years (95% CI 5.5–7.8) and in lv-GCA 2.2 per 100.000 adults aged ≥ 50 years (95% CI 1.6–2.9).

Abstract AB0685 – Table 1. Characteristics of GCA cohort

Characteristics	all GCA	lv-GCA	c-GCA
No. of cases	169	42	127
Female gender (%)	66.3	76.2	63.0
Age (years)*	75.1 (68.6-80.0)	69.5 (64.4-78.1)	75.7 (72.2-81.6)
Disease duration (day)*	30 (14-60)	60 (30-97.5)	28 (14-45)
Constitutional symptoms (%)	69.2	71.4	68.5
Headache (%)	71.6	45.2	80.3
PMR (%)	14.2	11.9	15.0
Jaw claudication (%)	45.0	26.2	51.2
Vision disturbances (%)	33.1	19.0	37.8
Clinically abnormal TA [‡]	62.1	38.0	69.3
TAB (%)	88.2(105/119)	79.2 (19/24)	85.6 (89/104)
TA CDS (%)	76.9 (130/160)	54.8 (23/42)	92.4 (109/118)
ESR ≥ 50 (mm/h) (%)	82.8	81.0	85.0
ACR criteria (%)	82.2	57.1	90.5

Legend: GCA giant cell arteritis; lv-GCA extracranial large vessel GCA; c-GCA cranial GCA; PMR polymyalgia rheumatica; TA temporal artery; [‡] TA tenderness or decreased pulse; TAB temporal artery biopsy; CDS colour Doppler sonography; ESR erythrocyte sedimentation rate; ACR American College of Rheumatology; * median (interquartile range);

Conclusions: GCA is the most common vasculitis in adults aged 50 years or above, with an annual incidence rate of 8.7 per 100.000. c-GCA is nearly 3 times more common than lv-GCA.

Disclosure of Interest: None declared

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