Impact of large veseel vasculitis of the axillary artery on cumulative glucocorticoud dose and relaps rate in giant cell arteritis

P. Bosch[1], C. Dejaco[1,2], W.A. Schmidt[3], A. Krause[3], K.-D. Schlüter[3], G. Pregartner[4], V.S. Schäfer[5]

[1]Department of Rheumatology and Immunology, Medical University Graz, Graz, Austria
[2]Rheumatology Service, Hospital of Bruneck, Bruneck, Italy
[3]Medical Centre for Rheumatology Berlin-Buch, Immanuel Krankenhaus Berlin, Berlin, Germany
[4]Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria
[5]Clinic of Internal Medicine III, Department of Rheumatology and Clinical Immunology, University Hospital Bonn, Bonn, Germany

Background

Prognostic markers for clinical outcomes in giant cell arteritis (GCA) are urgently needed. While large vessel GCA (LV-GCA) has been associated with higher glucocorticoid (GC) dose and increased relapses, data are still controversial. The axillary artery is almost always affected in LV-GCA patients (axGCA), however, it is not yet clear whether axGCA patients have more relapses and a higher GC need, compared to GCA with exclusive cranial vessel involvement (crGCA).

Aim

The aim of this study was to determine the prognostic value of axillary artery involvement in GCA in respect to cumulative GC doses and relapse rates.

Methods

Ultrasound (US) of the axillary arteries was performed in GCA patients at the time of diagnosis and at multiple follow-up visits. Patients with US signs of axillary artery vasculitis at the time of diagnosis were compared with patients in whom US was exclusively positive in cranial arteries. Cumulative GC doses and relapse rates were calculated for the most recent study visit and survival analysis was performed to determine differences between the groups concerning the time until the first relapse and the cessation of GC treatment. Linear mixed models were used to assess the effect of GC and relapses on the axillary artery wall in axGCA patients.

Results

Sixty-seven patients had US signs of vasculitis of the axillary arteries at baseline (=**axGCA group**), while 34 patients had exclusively signs of vasculitis in the cranial arteries (=**crGCA group**). Demographic data at the most recent follow-up are presented in Table 1.

Median time until GC cessation was 60 months (95% CI: 60-108) in the axGCA group compared to 48 months (95% CI: 42-72) in the crGCA group (p=0.0239), as depicted in figure 1, while median time until the first relapse was 42 months (95% CI: 24-84) vs 27 months (95% CI: 21-42; p=0.029). Median cumulative GC doses were higher in the axGCA group with 6801mg (range: 1748-34169), compared to the crGCA group with 5633mg (range: 2553-19967; p=0.052), as shown in figure 2. Median cumulative number of relapses were similar with 2 (range: 0-16) and 1 (range: 0-13) in the axGCA and crGCA group, respectively (p=0.67), while relapse-symptoms were different, with axGCA patients suffering from more general symptoms like nightsweats and dizziness compared to crGCA patients (figure 3). While we observed a continuous decline of the intima media thickness (IMT) over the entire study period, the cumulative GC dose had no significant effect on IMT decrement. In contrast, a clinical relapse resulted in an increase of the IMT by 0.18mm (95% CI: 0.07-0.30; p=0.003).

Conclusion

GCA patients with vasculitis of the axillary artery have longer GC treatment and higher cumulative GC doses compared to GCA patients without vasculitis of axillary arteries. Relapse rates are similar between the groups but might be more difficult to detect in patients with large vessel involvement. Also, relapses lead to an IMT increase of axillary arteries.

Table 1. Demographic data at the most recent follow up

	axGCA n=67	crGCA n=34	p
Age, years ±SD	72.6 ± 7.0	76.4 ± 6.84	0.013
Female, n°(%)	48 (71.6)	19 (55.9)	0.173
Months since diagnosis	48 (16-137)	48 (16-102)	0.486
PMR, n°(%)	34 (50.7)	17 (50.0)	1.000
Immunosuppressive treatment, n°(%)			
Methotrexat	18 (26.9)	5 (14.7)	0.260
Azathioprin	1 (1.5)	0 (0.0)	
Tocilizumab	0 (0.0)	1 (2.9)	

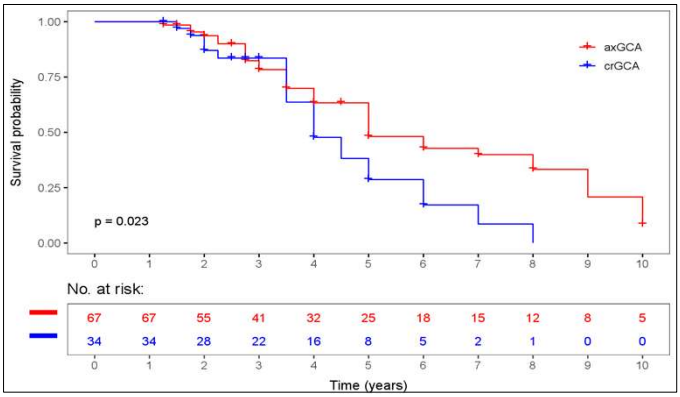

Figure 1. Time until the first cessation of GC treatment

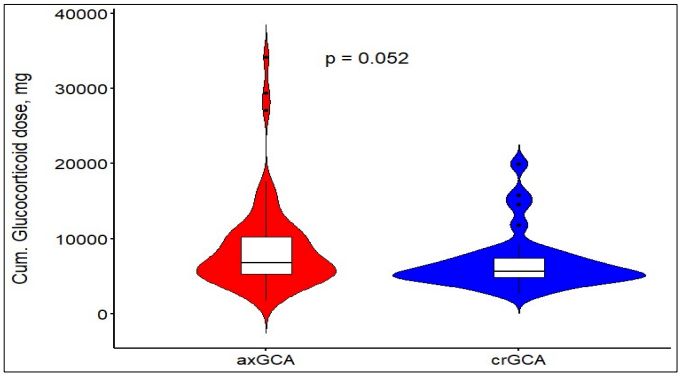

Figure 2. Cumulative GC doses at the most recent follow up

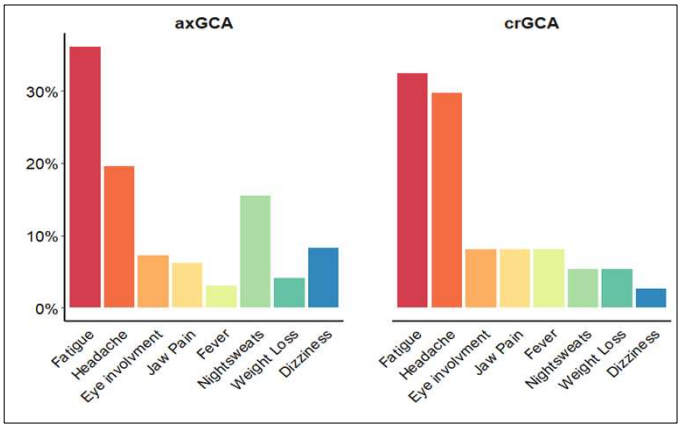

Figure 3. Distribution of relapse symptoms