Compared to C-GCA, patients with large vessel involvement (LV-GCA and LV-C-GCA) were younger and more frequently women, and the difference was further significant for patients with isolated LV-GCA. Patients with isolated LV-GCA had also the longer duration of symptoms at GCA diagnosis [LV-GCA 20(16-82) vs LV-C-GCA 12(4-16) vs C-GCA 4(3-12) weeks; $p < 0.001$]. Systemic symptoms, as fever and fatigue, were associated with large vessel involvement, both in LV-GCA and LV-C-GCA groups. Polymyalgia rheumatica was equally reported in all three cohorts of patients and no significant differences were found in inflammatory markers levels according to vessel involvement.

In patients with large vessels involvement (LV-GCA and LV-C-GCA) thoracic aorta, subclavian arteries and abdominal aorta were the most frequently involved arteries.

Conclusion: GCA is not a single entity but includes several patterns of disease. Female gender, younger age and systemic symptoms are associated with large vessel involvement, regardless the presence or absence of cranial symptoms. The different clinical manifestations of large vessel GCA lead to a longer time to diagnosis if compared to C-GCA. For these reasons, in patients with the aforementioned characteristics, a large vessel involvement should be considered in order to reduce the time to diagnosis.

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	GCA (n: 100)	C-GCA (n: 61)	LV-C-GCA (n: 23)	LV-GCA (n: 16)	p
Age: median (IQR)	76 (67-79)	75 (71-80)	74 (69-77)	63 (59-72)	0.001
Female/ Male	68 (68%) / 32 (32%)	38 (62%) / 23 (38%)	17 (74%) / 6 (26%)	13 (81%) / 3 (19%)	0.276
Time between symptom onset and diagnosis (weeks)	8 (4-20)	4 (3-12)	12 (4-16)	20 (16-82)	<0.001
Cranial symptoms (overall)	84 (84%)	61 (100%)	23 (100%)	0 (0%)	<0.001
New temporal headache	77 (77%)	58 (95%)	19 (83%)	0 (0%)	<0.001
Visual symptoms	39 (39%)	34 (56%)	5 (22%)	0 (0%)	<0.001
Jaw or tongue claudication	35 (35%)	27 (44%)	8 (35%)	0 (0%)	0.004
Fever	48 (48%)	23 (38%)	14 (61%)	11 (69%)	0.032
Fatigue	75 (75%)	40 (66%)	21 (91%)	14 (88%)	0.023
Weight loss	52 (52%)	28 (46%)	13 (57%)	11 (69%)	0.235
Polymyalgia rheumatica	43 (43%)	27 (44%)	13 (57%)	3 (19%)	0.061
Arm or leg claudication	5 (5%)	0 (0%)	4 (17%)	1 (6%)	0.005
CRP (C-reactive protein)	83 (45-127)	77 (39-115)	89 (50-134)	95 (20-124)	0.461
ESR (erythrocyte sedimentation rate)	72 (47-96)	70 (46-88)	75 (28-105)	66 (44-91)	0.711
Cranial arteries	84 (84%)	61 (100%)	23 (100%)	0 (0%)	<0.001
Carotid arteries	19 (19%)	0 (0%)	12 (52%)	7 (44%)	<0.001
Subclavian and upper limb arteries	21 (21%)	0 (0%)	10 (43%)	11 (69%)	<0.001
Thoracic aorta	29 (29%)	0 (0%)	15 (65%)	14 (88%)	<0.001
Abdominal aorta	21 (21%)	0 (0%)	10 (43%)	11 (69%)	<0.001
Iliac and inferior limb arteries	10 (10%)	0 (0%)	6 (26%)	4 (25%)	<0.001

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POS0798

GIANT CELL ARTERITIS TREATMENT PATTERNS AND RATES OF SERIOUS INFECTIONS

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Background: Giant cell arteritis (GCA) afflicts older adults, who may have age- and comorbidity-related risks for infection, and is treated with glucocorticoids and other immunosuppressants that might increase the risk of serious infections.

Objectives: To examine GCA treatment patterns and rates of serious infections in two real-world cohorts in the U.S.

Methods: Using claims data from two U.S. health insurance databases, Medicare (public, 2007-2017) and MarketScan (commercial, 2015-2019), we selected a cohort of patients with GCA based on a validated claims-based algorithm requiring ≥ 2 diagnosis codes for GCA plus dispensing of high-dose oral glucocorticoid (PPV 84.8%) [1]. The Medicare cohort included Medicare enrollees aged ≥ 65 years with GCA who were treated at a large Massachusetts-based healthcare system; the MarketScan cohort included a nationwide sample of GCA patients aged ≥ 50 years. GCA index date was the date of 1st glucocorticoid prescription. We assessed baseline comorbidities in the year prior to index date. Immunosuppressants and prophylactic antibiotics dispensed within 30 days

of index date were recorded. Influenza vaccine administration in the year after index date was identified. We calculated the incidence rate of serious infections, defined as infections requiring hospitalization, after index date through end of cohort follow-up (12/31/17 in Medicare; 12/31/2019 in MarketScan), disenrollment, or death.

Results: The Medicare cohort included 734 patients, 28% male, mean age 77.1 (SD 7.4); the MarketScan cohort included 1022 patients, 30% male, mean age 68.4 (SD 10.9). The most common comorbidity was hypertension (80% Medicare; 72% MarketScan) followed by hyperlipidemia, cancer, coronary artery disease, and diabetes (Table 1). High-dose prednisone was the most common initial treatment; a small percentage received tocilizumab within 30 days of index date. Prophylaxis against pneumocystis pneumonia was similar in Medicare (13%) and MarketScan cohorts (10%). Influenza vaccination was more common in the Medicare (56%) than MarketScan (22%) cohort in the year after GCA index date. During the mean follow-up time of 2.6 (SD 2.5) years in Medicare and 1.5 (SD 0.9) years in MarketScan, 27.9% of the Medicare and 7.2% of MarketScan patients developed serious infections: incidence rate per 100 person-years = 10.7 (95% CI 9.3, 12.2) in Medicare and 6.3 (95% CI 5.0, 7.9) in MarketScan.

Conclusion: In these 2 real-world GCA cohorts in the US, over 25% of Medicare and 7% of MarketScan patients developed serious infection during follow-up. The incidence rate of serious infection was similar to ANCA-associated vasculitis [2]. Use of prophylactic antibiotics and influenza vaccination was suboptimal among GCA patients.

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Table 1. Comorbidities, medication use, and infection rates in GCA cohorts

	Medicare cohort (n=734)	MarketScan cohort (n=1022)
Baseline comorbidities		
Hypertension	80%	72%
Hyperlipidemia	71%	61%
Cancer	38%	24%
Coronary artery disease	34%	25%
Diabetes	34%	31%
No. rheumatology visits, mean (SD)	1.4 (2.2)	0.8 (1.7)
Medications within 30 days of index date		
Prednisone maximum dose ≥ 60 mg daily	87%	91%
Tocilizumab IV or SC	<2%	5%
Methotrexate	3%	4%
Bactrim, atovaquone, or dapsone	13%	10%
Vaccines in the year after index date		
Influenza vaccine	56%	22%
Serious infection incidence rate (95% CI) per 100 person-years	10.7 (9.3, 12.2)	6.3 (5.0, 7.9)

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POS0799

THE EFFICACY AND SAFETY OF TOCILIZUMAB IN PATIENTS WITH GIANT CELL ARTERITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Tocilizumab (TCZ) has been proven to be safe and effective for the treatment of giant cell arteritis (GCA) in 2 randomized controlled trials; however, data from additional types of studies provide valuable information related to the treatment of GCA with TCZ.

Objectives: To review and analyze efficacy and safety data for TCZ in GCA based on peer-reviewed publications to date.

Methods: A systematic literature review was conducted according to the PRISMA guidelines. Publications were retrieved from the MEDLINE, Embase, Cochrane, Scopus and Web of Science databases. Publications of clinical trials and retrospective or prospective observational studies (April 11, 2005-October 8, 2019) including patients with GCA (classified based on ACR criteria and/or positive biopsy vs imaging) treated with TCZ and reporting a measure of efficacy were eligible for inclusion. Extracted data included year of publication, year(s) when the study was conducted, number of patients with GCA, method of GCA diagnosis, age and sex, TCZ treatment details (dose, route of administration, frequency, duration), clinical outcome (remission, relapse), serious adverse events

(SAEs) following treatment with TCZ, corticosteroid dose before and following TCZ initiation and imaging data following TCZ treatment. Results are presented for the studies (unweighted) and as the weighted population mean. Unweighted mean proportions were calculated as the average of the proportions reported from each study; unweighted means were calculated by computing the mean of individual reported study means. The weighted population proportion was estimated by calculating the total number of patients achieving an outcome and dividing by the total number of patients in all of the studies. The weighted population mean was equivalent to the sum of the individual patient's outcome values divided by the total number of patients in all of the studies.

Results: The search retrieved 664 references; 55 full-text articles were reviewed for eligibility, and 36 studies were included in the meta-analysis (Figure 1); the once-weekly and every-2-weeks subcutaneous (SC) TCZ arms of the GiACTA trial were counted as separate studies. A total of 519 patients were included. The median (IQR) duration of treatment with intravenous and SC TCZ was 26.0 (20.0-37.3) and 52.0 (26.0-52.0) weeks, respectively, across all studies in the unweighted analysis and 25.8 (20.8-41.9) and 38.9 (32.4-45.5) weeks in the weighted analysis. The mean (SE) proportion of patients achieving investigator-defined remission at the end of the study was 86.3% (4.3%) and 79.3% (6.0%) in the unweighted and weighted analyses, respectively (Table 1). The mean (SE) proportion of patients who relapsed while receiving TCZ was 2.6% (1.3%) and 12.0% (4.5%) in the unweighted and weighted analyses, respectively. The median prednisone dose at the end of the study was < 5 mg/day, and the mean proportion of patients with SAEs after TCZ initiation was ~ 14.0%.

Conclusion: A high proportion of patients with GCA treated with TCZ were in investigator-defined remission at the end of the study across all studies analyzed. These meta-analysis findings add to the evidence of the efficacy and safety of TCZ in GCA.

Figure 1. Study Types Included in Meta-Analysis

*The subcutaneous TCZ once-weekly and every-2-weeks treatment arms of the GiACTA trial were counted as separate studies.

Table 1. Summary of Remission, Relapse and Adverse Events

Mean (SE) [95% CI]	Across GCA Studies; Unweighted (n = 36 studies)	Weighted Population Mean (n = 519 patients)
Percentage of patients in investigator-defined remission at the end of the study	n=35 86.3 (4.3) [77.6 to 94.9]	n=411 79.3 (6.0) [67.2 to 91.4]
Percentage of patients who relapsed while receiving TCZ	n=31 2.6 (1.3) [-0.18 to 5.3]	n=39 12.0 (4.5) [2.8 to 21.2]
Percentage of patients who relapsed after TCZ discontinuation	n=20 26.4 (7.8) [10.1 to 42.7]	n=41 14.8 (5.8) [2.7 to 26.9]
Percentage of patients receiving no steroids at the end of follow-up	n=31 41.8 (6.8) [27.8 to 55.8]	n=170 49.4 (8.1) [32.8 to 66.0]
Percentage of patients with SAEs after TCZ initiation	n=35 14.0 (4.1) [5.5 to 22.4]	n=72 14.3 (1.3) [11.7 to 17.0]

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POS0800

VISUAL ISCHEMIA DURING RELAPSE AND FOLLOW-UP OF GIANT CELL ARTERITIS: A SYSTEMATIC REVIEW

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Background: Visual ischemia (VI) is one of the most feared complications in giant cell arteritis (GCA). While the frequencies of VI development at or near diagnosis are better studied, limited information is available regarding the frequency of VI during relapse.

Objectives: The purpose of this study was to characterize the frequency of visual ischemia (VI) as a manifestation of relapse or during follow-up in patients with GCA through performance of a systematic literature review.

Methods: Potentially eligible studies were identified from Medline and EMBASE databases from inception to November 31, 2019 using a search strategy that comprised of terms for "giant cell arteritis," "temporal arteritis," or "Horton's disease," with "relapse," "recurrence," "flare," "outcome," "follow-up," or "prognosis." VI was defined as transient or permanent, full or partial, monocular or binocular visual field loss. VI occurring within 4 wks of GCA diagnosis was considered due to active disease and not included as a relapse event. Inclusion criteria used: (1) original research reported in English, (2) GCA definition provided, (3) VI outcome described as one of the following: (a) relapse rate/frequency denoting the presence or absence of VI, or (b) absolute number of VI events (> 4 weeks after GCA diagnosis) even if total cohort relapse rate/frequency was not provided. In order to reduce bias from under-reporting of negative results, studies that reported relapse rates/frequencies with accompanying relapse characteristics but did not provide initial detail regarding the presence/absence of VI were also identified. In such circumstances, the primary authors were directly contacted for patient-level data regarding VI and these studies were included in the final analysis if such data were available and provided.

Results: A total of 913 unique articles were identified and underwent screening. Among these, 148 articles underwent independent full-text review by two physicians (K.B. and M.J.K.). 33 articles met full inclusion criteria and an additional 21 articles included data on relapse but did not report VI patient data in the publication. Responses were received from authors of 11 of these 21 studies allowing for inclusion. 44 studies accounting for 3,649 patients with GCA were identified. Average percentage of baseline VI was 19% (range 0-66%). The average length of follow-up was 3.4 years (range 0.4 to 8.7). VI developing > 4 weeks after GCA diagnosis was recorded in a total of 53 patients (1.5%).

Study-defined relapses were reported in 36 studies. A total of 1,215 patients with at least one or more relapses were recorded among 2,592 patients under observation (47%). Among these 36 studies, VI occurred in 37 patients (3.0%) with at least one study defined relapse event.

Comparing trial design, retrospective studies (n=25) reported 27 of 2,718 (1%) patients developed VI during follow-up whereas 19 of 541 (3.5%) patients in randomized controlled trials (n=8) developed VI during the trial or post-trial follow-up.

Conclusion: This report outlines the first systematic review evaluating VI as a manifestation of relapse and during follow-up in GCA. Overall, VI > 4 weeks after GCA diagnosis is uncommon (1.5%) but is noted in up to 3% of patients with at least one relapse event. Frequencies of reported VI were 3.5 times higher in randomized controlled trials compared to retrospective studies.

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POS0801

VASCULITIS IN PATIENTS WITH SARCOIDOSIS: A SINGLE-INSTITUTION CASE SERIES OF 17 PATIENTS

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