to Hubert de Boysson, MD, Centre Hospitalier et Universitaire Cote de Nacre, Caen, France, extracranial involvement of large vessels in patients with GCA probably is underdiagnosed.

18-fluoro-deoxyglucose (FDG) positron emission tomography (PET) offers good sensitivity for the detection of large vessel involvement in patients with GCA [Blockmans D et al. *Arthritis Rheum* 2006; Besson FL et al. *Eur J Nucl Med Mol Imaging* 2011]. The objectives of this study were to characterize large vessel involvement using PET in a cohort of patients with GCA, describe the patients who had aortic complications, and identify factors associated with aortic complications.

Patients included in this retrospective observational study met at least three American College of Rheumatology (ACR) criteria for GCA (or two criteria plus extra-temporal biopsy-proven giant-cell vasculitis), had at least one PET at diagnosis or during follow-up, and had an aortic morphology assessment at diagnosis and during follow-up. Patients with aortic complications at diagnosis were excluded. A positive PET was defined as FDG vascular uptake superior to the liver in at least one of the following vascular segments: thoracic or abdominal aorta, or subclavian, axillary, carotid, upper limb, ilio-femoral, or lower limb arteries.

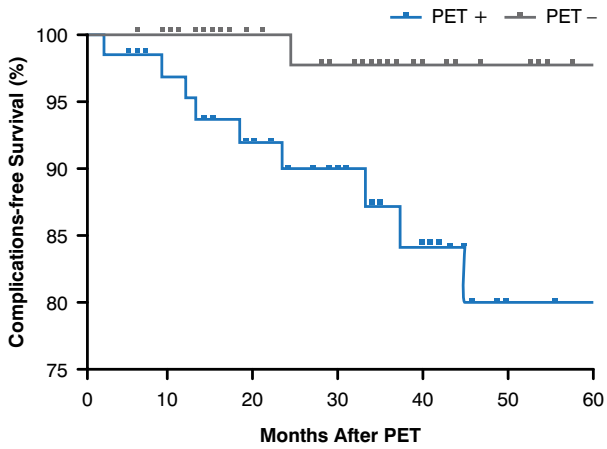
In total, 129 patients met the criteria and were followed for 35 months. Baseline characteristics, clinical characteristics and cardiovascular risk factors were similar in the entire cohort between patients with aortic complications and those without complication. Among the 129 patients, 65 (50%) had PET at diagnosis (ie, before or in the 10 first days of the treatment) and 64 (50%) had PET during follow-up. Aortic complications occurred in a total of 10 patients: 6 patients (60%) who had PET at diagnosis and 4 patients (40%) who had PET during follow-up.

Sixty-four (50%) patients had a positive PET (55% at diagnosis, 44% during follow-up). The three most-involved vascular areas were thoracic aorta (81%), subclavian arteries (73%), and abdominal aorta (58%). Nine of the 10 patients with aortic complications had a positive PET compared with 55 of 119 patients without complications (90% vs. 46%, p=0,008). Complications occurred at a median time of 19.5 (range, 3 to 43) months after PET and 27.5 (3 to 180) months after diagnosis. In the univariable analysis, patients with a positive PET had a significantly higher risk of developing aortic complications as compared with those with a negative PET (HR, 9.2; 95% CI, 1.2 to 72.7; p=0.01; Figure 1).

Among the 10 patients with aortic complications, the thoracic section was of a concern for 9 patients (8 had thoracic aorta dilatation or aneurysm, and 1 had aortic dissection), whereas 1 patient had an abdominal aorta aneurysm. Patients with a positive PET versus those with a negative PET had more extra-cephalic manifestations (64% vs 37%; p=0.002) and fewer cephalic symptoms (72% vs 89%; p=0.01). There were 7 deaths, including 2 from strokes, 2 from myocardial infarctions, 1 from colitis, 1 from pneumonia, and 1 from limb ischemia. Three of 5 patients with a cardiovascular event had a positive PET.

This study suggested that patients with GCA who had a positive PET at diagnosis or during follow-up had a higher risk of developing aortic complications. These patients had an atypical presentation with more extra-cephalic symptoms and fewer cephalic manifestations than is typically observed in GCA. Prospective studies are needed to confirm these results.

Figure 1. Risk of Aortic Complications in Patients With a Positive Versus Negative PET



Number at risk							
PET +	66	60	47	38	28	15	14
PET –	63	59	46	40	30	20	20

PET=positron emission tomography.

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Study Confirms Biosimilarity of HD203 and Etanercept in Patients With RA

Written by Toni Rizzo

The new agent HD203 is a biosimilar of etanercept, a recombinant fusion protein that blocks tumor necrosis factor activity. The amino acid sequence of HD203 is identical to that of etanercept and is produced by the same method. A Phase 1 trial in healthy volunteers indicated that the pharmacokinetics, safety, and tolerability

Table 1. Secondary Endpoints: ACR Responses per Protocol Set, n (%)

	HD203	Etanercept	p Value[a]
Week 12	115	118	
ACR20	92 (80.0)	89 (75.4)	0.4016
ACR50	59 (51.3)	53 (44.9)	0.3921
ACR70	20 (17.4)	22 (18.6)	0.8036
Week 24	115	118	
ACR50	75 (65.2)	62 (52.5)	0.0494
ACR70	36 (31.3)	37 (31.4)	0.9932
Week 48	110	112	
ACR20	96 (87.3)	96 (86.5)	0.8626
ACR50	75 (68.2)	61 (54.5)	0.0359
ACR70	42 (38.2)	38 (33.9)	0.5093

ACR=American College of Rheumatology.
[a]Pearson χ^2 test.

of HD203 were comparable to those of etanercept [Yi S et al. *BioDrugs* 2012].

The objective of the Trial to Evaluate Equivalence in Efficacy and Safety of HD203 and Enbrel in RA Patients [HERA; NCT01270997], presented by Sang-Cheol Bae, MD, PhD, Hanyang University Hospital for Rheumatic Diseases, Seoul, Korea, was to evaluate the equivalence in efficacy of HD203 and etanercept in combination with methotrexate in patients with rheumatoid arthritis (RA). The patients were randomly assigned to HD203 (25 mg; n=115) or etanercept (25 mg; n=118), subcutaneous injection, twice weekly, for 24 weeks. An extension study continued for an additional 24 weeks.

The inclusion criteria included fulfillment of 1987 American College of Radiology (ACR) criteria for RA; class I to III ACR functional status; active RA; positive rheumatoid factor, anti-CCP antibody, or bone erosion in the hands or feet; and inadequate response to methotrexate. The primary efficacy endpoint was the ACR20 score, assessed at Week 24. The secondary endpoints were ACR20, ACR50, and ACR70, assessed at Weeks 12, 24, and 48, and the index of improvement in RA, Disease Activity Score in 28 joints (DAS28), and European League Against Rheumatism (EULAR) response, assessed at Weeks 24 and 48. Efficacy equivalence was defined as a 95% CI between the 2 drugs of –20% to +20%.

The mean patient age was ~51 years in each group, and 85.6% to 87.8% of patients were women. ACR functional status was similar between the 2 groups. The primary endpoint of ACR20 at Week 24 was achieved by 83.48% of patients in the HD203 group, compared with 81.36% of patients in the etanercept group (95% CI, 7.65 to 11.89; p=0.6706).

There were no significant differences between the groups in the percentage of patients achieving ACR20 at Weeks 12 and 48; ACR50 at Week 12; and ACR70 at Weeks 12, 24, and 48 (Table 1). A significant difference was observed for ACR50 in the HD203 group versus the etanercept group at Weeks 24 (65.2% vs 52.5%; p=0.0494) and 48 (68.2% vs 54.5%; p=0.0359).

At Weeks 24 and 48, there were no significant differences between the groups in mean change in DAS28 (Week 24, p=0.9170; Week 48, p=0.2534) or EULAR response rate (Week 24, p=0.5991; Week 48, p=0.1264).

The adverse event (AE) rate at 48 weeks was 76.9% in the HD203 group and 78.1% in the etanercept group. Serious AEs were reported in 12.9% of HD203 patients and 12.3% of etanercept patients. The withdrawal rate was 6.8% in the HD203 group and 7.5% in the etanercept group. Ten patients in the HD203 group and 4 in the etanercept group developed transient antidrug antibodies over 48 weeks.

This study demonstrated the equivalent efficacy and comparable safety of HD203 and etanercept in patients with RA. These findings confirm the biosimilarity of the 2 drugs.