**Conclusion:** In GCA, TCZ seems equally effective and safe regardless of the route of administration IV or SC.

**REFERENCES:**


**Disclosure of Interests:** None declared

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**POS0273**

**THE ROLE OF FACIAL, OCCIPITAL AND CAROTID ARTERIES ULTRASOUND IN THE DIAGNOSTIC ASSESSMENT OF GIANT CELL ARTERITIS**

**J. Martinho**, 1, 2, M. J. Sousa Bandeira, 1, 2, T. Fontes, 1, 2, 3, S. C. Barreira, 1, 2, N. Khmelinskii, 1, 2, C. Ponte, 1, 2, 3, Centro Hospitalar Universitário Lisboa Norte, 4, 5, 6, 7, Rheumatology Department, Lisbon, Portugal; 7, Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Centro Académico de Medicina de Lisboa, Unidade de Investigação em Reumatologia, Lisboa, Portugal; 8, Hospital Divino Espírito Santo, Rheumatology Department, Ponta Delgada, Portugal.

**Background:** Giant cell arteritis (GCA) is the most common form of primary systemic vasculitis in patients aged >50 years. It predominantly affects the cranial arteries; however, extra-cranial disease involving the aorta and its major branches can also be present. Currently, ultrasound of the temporal (TA) and axillary (AX) arteries is the first imaging modality recommended in patients with suspected predominantly cranial GCA. Nevertheless, other arteries such as facial (FA), occipital (OC), subclavian (SC), and common carotid (CC) arteries can also show vasculitic changes on ultrasound. However, there are still conflicting data to support the inclusion of these arteries in the routine ultrasound assessment of patients with suspected GCA.

**Objectives:** To assess the value of adding the evaluation of the FAs, OCs, SCs and CCs in the ultrasonographic diagnosis of patients with GCA.

**Methods:** Single-center observational retrospective study, using data from patients diagnosed with GCA registered at the Rheumatic Diseases Portuguese Registry (Reuma.pt). All patients underwent ultrasound of the TAs and AXs ± FAs, OCs, SCs or CCs at the time of diagnosis. The halo sign was considered a positive ultrasonographic finding for GCA. Only patients with the presence of halo sign in at least one arterial segment were included. Binary logistic regression modelling was performed to explore associations between the presence of halo sign in different arterial segments.

**Results:** We included 84 patients, 57 (67.9%) females, with a mean ± standard deviation age at diagnosis of 75.6 ± 8.8 years. Halo sign was found in the TAs of 66/84 (78.6%) patients, AXs of 40/84 (47.6%) patients, FAs of 37/74 (50.0%) patients, OCs of 15/61 (24.6%) patients, SCs of 30/49 (61.2%) patients, and CCs of 13/60 (21.7%) patients. Of the 18/84 patients diagnosed with GCA without the presence of TA halo, 17/18 (94.4%) showed halo in the AXs, 1/18 (5.6%) in the FAs, 3/18 (16.7%) in the OCs, 15/17 (88.2%) in the SCs and 6/17 (37.5%) in the CCs. Of the 44/84 patients with GCA without the presence of AX halo, 43/44 (97.7%) showed halo in the TAs, 24/39 (61.5%) in the FAs, 12/32 (37.5%) in the OCs, 4/18 (22.2%) in the SCs and 3/33 (9.1%) in the CCs. A total of 83/84 (98.8%) patients had halo sign on the ultrasound of either the TA or AX arteries. The patient with normal TA and AX ultrasound had the presence of halo sign in the SCs. Table 1 shows the proportion of patients with positive TA and AX ultrasounds according to the presence of halo in the FA, OC, SC or CC arteries. Patients with involvement of the cranial arteries were more likely to have a TA halo (FA: OR 30.6, 95%CI 3.8-247.3; OC: OR not applicable) and less likely to have an AX halo (FA: OR 0.37, 95%CI 0.14-0.95; OC: OR 0.19, 95%CI 0.05-0.77). As opposed to patients with involvement of the extra-cranial arteries in whom the halo sign was more frequently found in the AXs (SC: OR 18.2, 95%CI 4.2-78.9; CC: OR 5.9, 95%CI 1.4-24.4) but not in the TAs (SC: OR 0.12, 95%CI 0.02-0.60; CC: OR 0.32, 95%CI 0.09-1.15).

**Table 1. Differences in the presence of halo sign in the temporal and occipital arteries according to the arterial segment affected.**

<table>
<thead>
<tr>
<th>Arterial segment with halo</th>
<th>Temporal arteries with halo</th>
<th>Occipital arteries with halo</th>
<th>Common carotid arteries (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial arteries (n=37)</td>
<td>36/37 (97.3%)</td>
<td>13/37 (35.1%)</td>
<td>7/13 (53.8%)</td>
</tr>
<tr>
<td>Occipital arteries (n=15)</td>
<td>15/15 (100.0%)</td>
<td>3/15 (20.0%)</td>
<td>6/13 (61.5%)</td>
</tr>
<tr>
<td>Subclavian arteries (n=30)</td>
<td>15/30 (50.0%)</td>
<td>26/30 (86.7%)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** Our results support the need to assess both TAs and AXs in patients with suspected GCA, resulting in a diagnostic sensitivity of 99%. Only by adding the evaluation of the SCs to the already recommended TAs and AXs increased the diagnostic sensitivity of ultrasound to 100%. All patients with a positive FA, OC or CC ultrasound for GCA also showed a halo sign in either the TAs or AXs. Hence, the additional assessment of these arteries did not improve the diagnostic yield of ultrasound and, therefore, should not be recommended in routine practice.

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**POS0274**

**PREDICTION OF VASCULAR COMPLICATIONS IN TAKAYASU ARTERITIS BY MACHINE LEARNING: A PROOF-OF-CONCEPT STUDY BASED ON A PROSPECTIVE COHORT**

**X. Qiao,** 1, Y. Li, 2, Y. Sun, 1, L. Jiang, 1, 2, Zhongshan Hospital Fudan University, Rheumatology, Shanghai, China; 3, Vanderbilt University Medical Center, Otolaryngology-Head and Neck Surgery, Nashville, United States of America

**Background:** Vascular complications are common poor prognosis in Takayasu arteritis (TAK). A reliable prediction model for this outcome has not been performed using machine learning (ML) due to the lack of a dataset with sufficient sample size.

**Objectives:** We aimed to develop ML models for prediction of vascular complications in TAK based on the prospective data of the largest sample in China from the East China Takayasu Arteritis (ECTA) cohort.

**Methods:** Data were collected from the ECTA cohort in which patients were enrolled from January 2009 to August 2020 and followed till February 2021 (n = 517). Predictor variables included 53 baseline features and outcome of interest was incident vascular complications. Data were randomly split into a training (85%) and test (15%) set. Logistic regression (LR), support vector machine, random forest (RF), k-nearest neighbors, XGBoost (XGB), and light gradient boosting machine models were trained using five-fold cross validation, and evaluated on the test set for recall, specificity, precision and area under ROC (AU-ROC) and precision-recall curves (AU-PRC). Permutation score was applied to assess feature importance to the outcome.

**Results:** Over a median follow-up of 30 (15–44) months, incident vascular complications were observed in 29.0% (150/517) patients. The RF model demonstrated the best overall predictive performance (AU-ROC = 0.84, AU-PRC = 0.63). Both the RF and LR models had the highest specificity (0.98), and the XGB model had the highest recall (0.87). Progressive clinical course was an important feature significantly associated with the outcome for all models.

**Conclusion:** It demonstrated the feasibility of developing ML models for prediction of vascular complications in TAK. The XGB model could help for early identification of high-risk patients, and RF and LR models could further confirm.

**Disclosure of Interests:** None declared

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**POS0275**

**SEROLOGICAL RESPONSE FOLLOWING THREE DOSES OF SARS-COV-2 MRNA VACCINE IN PATIENTS WITH GIANT CELL ARTERITIS: EXPERIENCE OF A SINGLE-CENTRE COHORT**

**A. Bartolletti,** 1, G. Franchi, 1, C. Formara, 2, P. Delvino, 1, 2, F. Baldanti, 1, D. Lilleri, 1, C. Montecucco, 1, 2, 3, 4, M. Monti, 1, 2, 3, Fondazione I.R.C.S. Policlinico San Matteo, Microbiology and Virology, Pavia, Italy; 2, Fondazione I.R.C.S. Policlinico San Matteo, Microbiology and Virology, Pavia, Italy; 3, University of Pavia, PhD in Experimental Medicine, Pavia, Italy

**Background:** The spread of COVID-19 pandemic raised the need to perform an additional vaccine dose to overcome the diffusion of the infection and possible