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FRI0271

USE OF CONTRAST ENHANCED ULTRASOUND SONOGRAPHY (CEUS) IN LARGE VESSEL VASCULITIS (LVV)

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Background: C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) are important parameters in the monitoring of LVV. Since Tocilizumab is approved for treatment of LVV these cheap and easy repeatable parameters are worthless because of their normalisation by Tocilizumab. MRI and PET-CT as an alternative are not only much more expensive, they are also not arbitrarily repeatable and available. Thus, monitoring of LVV-Patients undergoing a Tocilizumab therapy remains unclear – especially upon showing a persisting thickened vessel wall.

Objectives: CEUS can increase the visibility of tissue perfusion, particularly if there is a very slow bloodflow, which cannot be detected by (power)-doppler sonography.

Methods: In this proof of concept study we investigated patients with active and inactive LVV (aLVV/iLVV) with CEUS. After injection of ultrasound contrast agent we measured the contrasted area of large vessels in a transverse section first if the lumen was completely contrasted and once again 4-8 seconds later. If the vessel wall incorporated the contrast agent the contrasted area increased (Fig 1). The increase of the contrasted area (CA) was correlated with CRP and ESR. Patients were only included if they were not treated with Tocilizumab and therefore ESR and CRP were usable to evaluate the disease activity.

Results: Investigated were 16 patients (13 female, 3 male), 8 with aLVV and 8 with iLVV, respectively. The mean CRP was 85 ± 69 (aLVV) vs. 4 ± 2 mg/l (iLVV) ($p < 0.0001$), the ESR 80 ± 28 (aLVV) vs. 7 ± 4 (iLVV) mm/h ($p < 0.0001$). The mean age was 74.6 ± 8.4 y (range 56-82). The increase of the CA was 66.6 ± 44.6 (aLVV) vs. 2.4 ± 6.6 (iLVV) ($p < 0.0001$). The increase correlated significantly with the CRP $r = 0.87$, $p < 0.0001$. An increase of CA of $\geq 20\%$ has a sensitivity of 92,3% and a specificity of 90% for active LVV.

Conclusion: The results of our proof of concept study demonstrate, that CEUS can detect aLVV with a good sensitivity and specificity. Including CEUS in clinical routine will be much easier repeatable, save, quicker and by far more cost-effective than MRI or PET-CT. CEUS might be a good method for monitoring disease activity in LVV treated with Tocilizumab. The limitation of our study is the small number of patients, the missing blinding of the investigator and the method intrinsic fact, that you can't investigate all involved vessels by ultrasound/CEUS.

REFERENCES:

None

A: Vessel before contrast agent (1: lumen; 2: thickened vessel wall)
B: Vessel after lumen is contrasted (3: contrasted lumen)
C: Vessel after lumen and wall is contrasted (4: contrasted lumen and wall)

Fig.1

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FRI0272

RISK OF POTENTIAL GLUCOCORTICOID-RELATED ADVERSE EVENTS IN PATIENTS WITH GIANT CELL ARTERITIS: RESULTS FROM A US-BASED ELECTRONIC HEALTH RECORDS DATABASE

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Background: Oral glucocorticoids (OGC) have been the mainstay of treatment for giant cell arteritis (GCA). However, OGCs are associated with several adverse events (AEs).

Objectives: To estimate the risk of potential OGC-related AEs in patients with GCA.

Methods: This retrospective, observational cohort study utilized the 2008-2017 IBM Explorys Electronic Health Records database which includes lab values. Inclusion criteria included age ≥ 50 years with ≥ 2 GCA diagnoses ≥ 7 days apart, 1 OGC prescription within 6 months of the first GCA diagnosis (index date = date of first OGC prescription) followed by a second OGC prescription, no other autoimmune disease requiring high-dose OGCs, no exposure to anti-tumor necrosis factor or anti-interleukin-6 therapies, ≥ 1 C-reactive protein (CRP)/erythrocyte sedimentation rate (ESR) lab test and 12 months of data available pre- and post-index. Potential AEs assessed during the 12 months post-index were descriptively summarized across cohorts of patients based on quartiles (Q) of mean daily dose of OGCs measured over 6 months post-index among this patient sample (Q1: ≥ 1.00 to ≤ 13.75 mg; Q2: > 13.75 to ≤ 25.00 mg; Q3: > 25.00 to ≤ 40.00 mg; Q4: > 40.00 mg). Potential AEs included type 2 diabetes (T2D) diagnosis, hemoglobin A1c (HbA1c), blood glucose level, serious infections, cataracts, gastrointestinal bleeding or ulcer and increases in body mass index (BMI). Actual OGC use by patient could not be confirmed and is a limitation of this study.

Results: Mean age of the 785 eligible patients was 76 years (SD 9); 70% were female. Mean Deyo Charlson Comorbidity Index score at baseline was 1.57 (SD 2.01). The most common baseline comorbid conditions were cerebrovascular disease, diabetes, chronic pulmonary disease, and renal disease. Mean daily OGC dose was 28.9 mg during the first 6 months post-index. Mean (SD) CRP and ESR during the 12-month follow-up was 5.1 (13.6) and 26.5 (20.7), respectively. The proportion of patients with newly diagnosed T2D or with HbA1c ≥ 7.5 during the 12-month follow-up ranged from 7.5% to 24.5% from OGC daily dose Q1 to Q4 cohorts. The proportion of patients with glucose ≥ 200 mg/dL ranged from 7.5% to 15.0% from Q1 to Q4. Serious infections ranged from 16.8% to 24.8% from Q1 to Q4 and cataract ranged from 12.0% to 21.7% from Q1 to Q4. The proportions of patients with gastrointestinal bleed/ulcer ranged from 6.0% in Q1 to 11.8% in Q4. An increase in BMI of 5 ranged from 4.1% to 6.4% from Q1 to Q4.

Conclusion: In patients with GCA, potential OGC-related AEs increased with increased daily OGC dose. This highlights the need for effective therapies that reduce the exposure and potential risk of OGCs.

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Table 1. Adverse Events During the 12-Month Post-Index Period, Stratified by OGC Daily Dose

	Dose Q1 ≥ 1.00 to < 13.75 mg N = 184	Dose Q2 ≥ 13.75 to < 25.00 mg N = 184	Dose Q3 ≥ 25.00 to < 40.00 mg N = 198	Dose Q4 ≥ 40 mg N = 161
Patients without type 2 diabetes and without HbA1c ≥ 7.5 in the pre-index period, n	120	136	130	110
With type 2 diabetes diagnosis or HbA1c ≥ 7.5 in the post-index period, n (%)	9 (7.5)	16 (11.8)	16 (12.3)	27 (24.5)
Maximum HbA1c value across HbA1c lab results during post-index, mean (SD)	7.75 (2.46)	8.30 (2.86)	8.25 (2.42)	8.61 (3.09)
Patients with diabetes diagnosis in the pre-index period but without HbA1c ≥ 7.5 in the post-index period, n	31	18	40	15
With worsening diabetes with HbA1c ≥ 7.5 in the post-index period, n (%)	10 (32.3)	6 (33.3)	20 (50.0)	4 (26.7)
Patients without blood glucose level ≥ 200mg/dL in the pre-index period, n	173	169	179	147
With blood glucose level ≥ 200mg/dL in the post-index period, n (%)	13 (7.5)	15 (8.9)	24 (13.4)	22 (15.0)
Adverse events in the post-index period, n (%)				
Serious infection requiring hospitalization for infection and/or IV antibiotics	31 (16.8)	39 (21.2)	44 (22.2)	40 (24.8)
Serious infection requiring IV antibiotics	29 (15.8)	33 (17.9)	42 (21.2)	35 (21.7)
Serious infection requiring hospitalization for infection	6 (3.3)	12 (6.5)	12 (6.1)	8 (5.0)
Cataracts	22 (12.0)	27 (14.7)	34 (17.2)	35 (21.7)
Gastrointestinal bleeding or ulcer	11 (6.0)	11 (6.0)	13 (6.6)	19 (11.8)
Patients with BMI in pre- and post-index, n	171	162	181	141
Increase in BMI by 5, n (%)	7 (4.1)	5 (3.1)	9 (5.0)	9 (6.4)

BMI, body mass index; HbA1c, hemoglobin A1c; IV, intravenous; Q, quartile.

FRI0273 SURVEYING PATIENTS WITH TAKAYASU ARTERITIS WITH A DELAYED DIAGNOSIS

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Background: Takayasu arteritis (TA) is a well known, but rarely identified variety of large vessel vasculitis. Frequency of initial misdiagnosing in TA patients has been reported to reach 80%. Up to 80% of TA cases are correctly diagnosed only 2 to 11 years after the symptoms presentation. Objectives: to study possible reasons for misdiagnosing in TA patients with a delayed diagnosis.

Methods: cross-sectional survey included 30 TA patients. All subjects met ACR criteria for TA and more than 12 months since the onset of the clinical manifestations delayed diagnosis. The subjects were asked to recall if vessels auscultation (VA), measurement of both arms and legs blood pressure (BP), assessment of BP and pulse asymmetry (PA) were performed during their first physician visit following the symptoms onset.

Results: 19 (67%) patients reported no VA during the initial examination, only 3 (10%) subjects confirmed the test performed, 5 (17%) were not sure and 3 (10%) did not apply for medical aid during the first year of the symptoms occurrence. Arms BP asymmetry was not assessed in 13 (43%) patients, in 6 (20%) subjects correct BP tests were performed, 8 (27%) responders were not sure and 3 (10%) had not consulted any physician timely. PA was assessed in 7 (23%) cases, PA was not tested in 12 (40%) patients, and 8 (27%) subjects were not sure. Arms and legs BP was not assessed in 26 (87%) patients during their initial examination.

Conclusion: the data obtained confirm paramount importance of proper physical examination during initial physician's consultation for timely and correct Takayasu arteritis diagnosis.

REFERENCES:

- [1] Arend W.P., Michel B.A., Bloch D.A., et al. The American College of Rheumatology 1990 criteria for the classification of Takayasu arteritis. *Arthritis Rheum.* 1990; 33(8): 1129-1134.
- [2] Pokrovskii AV, Zotikov AE, Kul'bak VA, Burtseva EA. Problems of diagnostics and treatment strategy in patients with Takayasu' arteries. *Vestn Ross Akad Med Nauk.* 2010;(10):9-19.
- [3] Ringleb PA, Strittmatter EI, Loewer M, et al. Cerebrovascular manifestations of Takayasu Arteritis in Europe. *Rheumatology* 2005; 44 (8): 1012-5.

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FRI0274 ULTRASOUND CUT-OFF VALUE FOR INTIMA-MEDIA THICKNESS OF THE AXILLARY ARTERIES IN PATIENTS WITH CHRONIC LARGE-VESEL GIANT CELL ARTERITIS

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Background: The European League Against Rheumatism (EULAR) recently recommended the use of ultrasound for the detection of inflamed

artery walls in giant cell arteritis (GCA) for diagnostic purposes. Intima media thickness (IMT) values, defining the "halo" sign in acute GCA patients, have also recently been proposed. In patients with chronic GCA, already receiving a treatment, the ultrasound appearance of inflamed artery walls changes and becomes difficult to detect.(1-4)

IMT measurement may help to identify patients with chronic large-vessel GCA (LV-GCA) by assessing the axillary arteries; however, a cut-off for distinguishing between chronically affected arteries and unaffected ones is not yet available.

Objectives: To determine an ultrasound IMT cut-off value for axillary arteries in patients with chronic LV-GCA.

Methods: Ultrasound of temporal and axillary arteries was performed in 127 GCA patients at the time of diagnosis and at one or two follow-up visits. Axillary arteries of GCA patients with sonographic signs of inflammation at the time of diagnosis were compared to unaffected axillary arteries of GCA patients and to axillary arteries of healthy controls. Receiver operating curves (ROC) were calculated using follow-up data to identify the optimal IMT cut-off.

Results: 148 axillary arteries of GCA patients showed signs of ultrasound inflammation at baseline (=LV-GCA group). The control group consisted of 162 axillary arteries, including 82 (50.6%) axillary arteries of GCA patients without signs of ultrasound inflammation at baseline or follow-up exam and 80 (49.4%) axillary arteries of 40 healthy controls. The mean age and gender distribution of the two groups at follow-up were 71 years (S. D. 7.9) with 69.9% females, respectively in the chronic LV-GCA group and 74 years (S.D. 6.9) with 59.8% females, respectively in the control group. The mean IMT values in the LV-GCA group were 1.14 (S.D. 0.38, n=78) for the right and 1.18 (S.D. 0.47, n=70) for the left axillary arteries as compared to 0.60 (S.D. 0.11, n=77) for the right and 0.62 (S. D. 0.11, n=85) for the left axillary arteries in the control group. Intervals from diagnosis to follow-up were 0.5-3 years, 3-6 years and >6years, with a distribution of 96 (65%), 32 (22%) and 20 (13%) exams in the LV-GCA group and 29 (35%), 41 (50%) and 12 (15%) exams in the control group (excluding healthy controls), respectively.

The optimal IMT cut-off value for the axillary arteries in patients with chronic LV-GCA was 0.87 mm with 75.0% sensitivity and 99.4% specificity (see figure 1). Sensitivity analysis (comparing patients with and without an involvement of the temporal artery at the time of diagnosis) validated this cut-off value.

Conclusion: An ultrasound IMT cut-off value for the axillary arteries can distinguish between patients with chronic LV-GCA and patients without chronic large vessel involvement.

REFERENCES:

- [1] Dejaco C, Ramiro S, Duftner C, et al. EULAR recommendations for the use of imaging in large vessel vasculitis in clinical practice. *Ann Rheum Dis* 2018;77:636-43.
- [2] Schäfer VS, Juche A, Ramiro S, et al. Ultrasound cut-off values for intima-media thickness of temporal, facial and axillary arteries in giant cell arteritis. *Rheumatology* 2017;56:1479-83.
- [3] De Miguel E, Beltran LM, Monjo I, et al. Atherosclerosis as a potential pitfall in the diagnosis of giant cell arteritis. *Rheumatology* 2017;57:318-21.
- [4] Czihal M, Schrott A, Baustel K, et al. B-mode sonography wall thickness assessment of the temporal and axillary arteries for the diagnosis of giant cell arteritis: a cohort study. *Clin Exp Rheumatol* 2017;35 Suppl 103:128-33.

ROC curve for axillary artery cut-off

Figure. 1. Receiver operating curve for the axillary artery cut-off in chronic large-vessel giant cell arteritis.

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