Disclosure of Interests: Belén Atienza-Mateo: None declared, José Luis Martín-Villas: None declared, J. Lorceria: None declared, Vanesa Calvo-Rio: None declared, Jenaro Graña: None declared, Gerard Espinosa: None declared, Clara Morano: None declared, Trinidad Pérez-Sandoval: None declared, Manuel Martín-Martinez: None declared, Elvira Díez Alvarez: None declared, María Dolores Garcia-Armario: None declared, Esperanza Martínez: None declared, Ivan Castellví Consultant for: I received fees less than 5000USD as a consultant for Kern and Actelon, Paid instructor for: I received fees less than 2000USD as a consultant for Boehringer-Ingelheim, Novartis and Gebro, Speakers bureau: NO, Patricia Moya: None declared, Francisca Sivera: None declared, Jaime Calvo Consultant for: Bristol-Myers Squibb, Janssen, Celgene, Sanofi Genzyme, Speakers bureau: Bristol-Myers Squibb, Isabel de la Morena Speakers bureau: Abbvie, Celgene, Pfizer, UCB, Ghebbo, Roche, Sanofi, Janssen., Francisco Ortiz-Sanjuán: None declared, José Andrés Román-Ivorra: None declared, Ana Pérez Gómez: None declared, Sergí Heredia: None declared, Alejandro Olive: None declared, Águeda Prieto-Español: None declared, Carolina Díez: None declared, Juanjo J Alegre-Sanchó: None declared, D Ybáñez-García: None declared, Ángels Martínez-Ferrer: None declared, J. Nárvaz Consultant for: Bristol-Myers Squibb, Ignasi Figueras: None declared, Ana Isabel Tumón : None declared, Susana Romero-Yuste: None declared, Pilar Trérón: None declared, Soledad Ojeda Grant/research support from: AMGEN, Speakers bureau: AMGEN, Santos Castañeda Consultant for: Amgen, BMS, Pfizer, Lilly, MSD, Roche, Sanofi, UCBJ, D. Prieto-Peña: None declared, Monica Calderón-Goercke: None declared, Lara Sánchez Bilbao: None declared, Ilhigo González-Mázon: None declared, Miguel A. González-Gay: None declared, Ricardo Blanco Consultant/research support from: Abbvie, MSD and Roche. Consultant for: Abbvie, Pfizer, Roche, Bristol-Myers, Janssen and MSD, Speakers bureau: Abbvie, Pfizer, Roche, Bristol-Myers, Janssen and MSDKI: 10.1136/annrheumdis-2019-eular.5965

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 Tocilizu- mab 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 – espe- cially upon showing a persisting thickened vessel wall.

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

Methods: This proof of concept study we investigated patients with active and inactive LVV (alLV/iLVV) with CEUS. After injection of ultra- sound 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 con- trasted 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: We included 16 patients (8 male, 8 female). Three patients were male, 8 patients were alLV and 8 with iLVV, respectively. The mean CRP was 85±69 (alLV) vs. 4 ±2 mg/l (iLVV) (p<0.0001), the ESR 80±28 (alLV) vs. 7±4 (iLVV) mm/h (p<0.0001). The mean age was 74±8.4 y (range 56-82). The increase of the CA was 66±4.46 (alLV) vs. 2.46±6.6% (iLVV) (p<0.0001). The increase correlated significantly with the CRP r= 0.87, p<0.0001. An increase of CA of >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 alLV with a good sensitivity and specificity. Including CEUS in clinical routine will be much easier repeatable, save, quicker and by far more cost-effective then MRI or PET-CT. CEUS might be a good method for monitoring disease activity in LVV treated with Tocilizu- mab. 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

Fig.1


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 (OGR) have been the mainstay of treat- ment 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 Explorx 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-inter- leukin-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 base- line 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 fol- low-up was 5.13 (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 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 exposure the potential risk of OGCs.

Acknowledgement: This work was supported by funding from Genentech, Inc
