POS0821

THE DIFFERENT SUBTYPES OF GIANT CELL ARTERITIS BY ULTRASOUND: RESULTS FROM A FAST-TRACK CLINIC

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Background: Giant cell arteritis (GCA) is a vasculitis that affects the medium and large vessels (LV). Although cranial artery involvement is better known, awareness of the importance of LV involvement is increasing. Imaging techniques currently constitute the basis for the diagnosis of LV-GCA and have improved its diagnosis and prevalence. In recent years, differences in clinical patterns and different inflammatory and etiopathogenic mechanisms of the disease have been suggested. Therefore, improving sensitivity to diagnosis is essential to improve the knowledge and care of our population.

Objectives: The aim of this study was to know the prevalence of the different ultrasound patterns of GCA in our area.

Methods: Retrospective records of available data were collected from all patients referred to our ACG fast track clinic in the past three years. The clinical and laboratory characteristics were evaluated at the time of referral. All patients underwent an ultrasound scan of cranial vessels (superficial temporal arteries (TA) and their frontal and parietal branches) and large vessels (axillary, subclavian and carotid arteries). The doctor confirmed the GCA diagnosis after at least six months of follow-up. The OMERACT definitions of halo sign with a hypoechoic wall thickness ≥ 0.34 mm were used for TA pathology for the ultrasound diagnosis of GCA and for axillary, subclavian and carotid arteries and homogeneous hypoechoic thicknesses ≥ 1 mm of the arterial wall were applied. Atherosclerosis lesions were evaluated to detect this disease as a possible false positive halo sign. An Esaote Mylab Twice with a 13 MHz probe in BT and 22 MHz for cranial vessels in 2017-2019 and an Esaote Mylab X8plus with a 15 MHz probe for BT and a 24 MHz probe for cranial arteries in 2019-2020 were used by two rheumatologist with long experience in ACG ultrasound.

Results: A total of 261 patients (180 women / 81 men) with suspected GCA were evaluated in our fast track clinic. The mean age ($\pm$ SD) was 76 ± 9.2 years and CRP at diagnosis was 75.7 ± 68.6 mg/L. The time elapsed since the first symptoms was less than 6, 6-12, 12-24 or >24 weeks in 37.5%, 19.9%, 12.3% and 15.7% respectively. Of the 261 cases explored, 160 had GCA, of which 102 were women and 58 men, and had a mean age of 77.21 ± 7.9 years. The ultrasound patterns of GCA were: 71 patients had exclusive involvement of the TA (cranial-GCA), 54 had a mixed pattern with involvement of both TA and LV (mixed-GCA), and 35 had isolated involvement of the LV (LV-GCA). That is, 125 patients had cranial involvement with or without LV involvement and 89 had LV-GCA associated or not with cranial involvement (Figure 1).

GCA= Giant Cell Arteritis; c-GCA= Cranial Giant Cell Arteritis; LV-GCA= Large Vessel Giant Cell Arteritis

Figure 1. Ultrasound patterns of GCA

Conclusion: Ultrasound is a useful tool for the screening of GCA and its different subtypes of vascular involvement. The isolated cranial subtype or associated with LV-GCA is the most common (78% of cases), but LV-GCA is also very common (55.6% of cases of GCA) and 21.9% presents as an isolated LV-GCA standard. The LV arteries should be included in the ultrasound examination for suspected GCA.

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Vasculitis – small vessel vasculitis

POS0822

NEW FACES OF POLYARTERITIS NODOSA: 18F-FLUORODEOXYGLUCOSE POSITRON EMISSION TOMOGRAPHY FINDINGS IN A SERIES OF 10 PATIENTS

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Background: ¹⁸F-fluorodeoxyglucose positron emission tomography with computed tomography (FDG-PET/CT) is widely used in patients with large-vessel vasculitis (1). The benefits of FDG-PET/CT in polyarteritis nodosa (PAN) has only been assessed in a few case reports (2-3).

Objectives: Our aim was to describe FDG-PET/CT findings in 10 patients with newly diagnosed PAN.

Methods: This was a retrospective study of patients with PAN who underwent FDG-PET/CT at the time of diagnosis, between 2017 and 2020. The FDG-PET/CT data were analysed retrospectively and compared with clinical, biological, histological and conventional imaging data.

Results: Ten patients were included: 9 men and 1 woman, median age of 67 (43–78) years. PAN was diagnosed according to ACR criteria (6) in 9 patients, and histologically in the remaining patient. The clinical manifestations were: systemic (n=10), muscular (n=6), joint (n=3), skin (n=3), peripheral nervous system (n=3), and gastrointestinal (n=2). All patients had high C-reactive protein levels (median, 223 mg/L). One patient had incomplete FDG-PET exploration. Three patients had begun corticosteroid therapy before their FDG-PET/CT scan. The main FDG-PET/CT abnormality was increased tracer uptake in the muscles, particularly in the connective tissue (perimysium, epimysium) (n=7), in linear (n=5) or focal (n=2) patterns. Increased FDG uptake in large-diameter vessels was observed in 4 patients, in the humeral (n=4), femoral (n=1) and the common interosseous (n=1) arteries. Nine patients had bone-marrow FDG uptake, six had splenic FDG uptake. Three patients had synovitis. Three had lymph-node uptake. One patient had subcutaneous FDG uptake, with a "leopard skin" appearance.

Conclusion: FDG-PET/CT seems to be a useful non-invasive imaging technique for diagnosing PAN, particularly in patients with non-specific systemic features. Tracer uptake in muscular connective tissue seems to be a recurrent sign in patients with PAN.

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POS0823

ARTHRITIS IN ADULT IGA VASCULITIS

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Background: Arthritis is one of the main clinical features of IgA vasculitis (IgAV). Joint involvement represents the second most common manifestation in childhood IgAV with the predilection for the knees and ankles.

Objectives: We aimed to describe the characteristics of arthritis in adult IgAV cohort.

Methods: We analysed medical records of histologically proven adult IgAV cases, diagnosed between January 2010 and December 2020 at our secondary/

tertiary rheumatology centre. The frequency, temporal occurrence and the localization of arthritis was recorded. In addition, we searched for potential differences in other IgAV features between patients with and without arthritis.

Results: During the 132-month observation period we identified 328 new IgAV cases (59.5% males, median (IQR) age 64.3 (45.1; 76.1) years). Forty-eight (14.6%) patients developed arthritis. Arthritis was the first IgAV manifestation in 16 (4.9%) patients. Arthritis was mono-, oligo- and poly- articular (involving up to 15 joints) in 13 (4.0%), 25 (7.6%) and 10 (3.0%) patients, respectively. Arthritis was most common in wrists and ankles (each in 18 (37.5%) patients); metacarpophalangeal joints and knees (each in 11 (22.9%)); proximal interphalangeal joints (9 (18.8%)); elbows (8 (16.7%)) and metatarsophalangeal joints (4 (8.3%)). Clinical differences between IgAV patients with and without arthritis are presented in table 1. Patients with arthritis were significantly younger, more commonly developed gastrointestinal tract involvement compared to those without arthritis. Arthritis remitted in all with immunomodulatory treatment (given predominantly for necrotic skin purpura or visceral involvement). Follow up (FU) data accessible for 42/48 (87.5%) patients with arthritis showed that IgAV relapsed in 10 (23.8%) patients during a median (IQR) 24.5 (12.9; 40.7) month FU. Relapses were limited to skin and/or kidneys, there were no relapses of arthritis.

Table 1. Clinical characteristics of IgA vasculitis patients with and without arthritis

Clinical characteristics	Arthritis IgAV (48)	Non-arthritis IgAV (280)	P value
Male gender (%)	56.3	60.0	0.636
Age (years)*	49.9 (36.1-66.9)	65.4 (48.4-77.5)	<0.001
Ever smoker (%)	50.0	43.6	0.435
Prior infection (%)	43.8	30.4	0.094
Generalized purpura	50.0	50.0	1.0
Skin necroses (%)	35.4	49.6	0.085
GI involvement (%)	47.9	25.0	0.002
Renal involvement (%)	47.9	46.8	1.0
Elevated serum IgA (%)	33.3 (11/33)	52.0 (115/221)	0.061

Legend: * median and IQR; GI gastrointestinal;

Conclusion: Arthritis in adult IgAV was frequently oligoarticular, involved large and small joints of both upper and lower extremities, and was not prone to chronic course and recurrence. In addition, we found an association between arthritis and gastrointestinal tract involvement.

Disclosure of Interests: None declared

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POS0824

THE LONG-TERM CLINICAL COURSE OF MUSCULAR VASCULITIS DEPENDING ON THE ANTI-NEUTROPHIL CYTOPLASMIC ANTIBODY STATUS: A RETROSPECTIVE OBSERVATIONAL STUDY

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Background: Skeletal muscle is known as one of the organ involvements of primary systemic vasculitis.^{1,2} Muscle inflammation is detected by magnetic resonance imaging, and necrotizing vasculitis is proved by muscle biopsy.³ As with systemic vasculitis or single organ vasculitis, glucocorticoid (GC) and immunosuppressants are used in its treatment.⁴ There are not many reports about muscular vasculitis, and its long-term clinical course after initial treatment, including the rates of relapse and mortality, remains unclear.

Objectives: To identify the predictors of relapse and mortality in patients with muscular vasculitis, especially focusing on the status of anti-neutrophil cytoplasmic antibody (ANCA).

Methods: We retrospectively reviewed patients diagnosed with necrotizing vasculitis with muscle involvements in our hospital between 2004 and 2020. In all cases, muscular vasculitis was identified by muscle biopsy or magnetic resonance imaging. To focus on the clinical features of muscular vasculitis, we excluded patients with such severe organ involvements as cardiovascular, abdominal, cerebral, severe renal, and severe pulmonary involvements. We compared the 5-year cumulative incidence of relapse, the overall survival rate, and the dose of GC over 5 years between the ANCA-positive and ANCA-negative groups. A relapse was defined as any new or worsened state of disease activity requiring an escalation of GC dose. Gray's method was used for assessing the cumulative incidence of relapse. The log-rank test was used for assessing overall survival. The Mann-Whitney U test was used for assessing the dose of GC. The possible factors for relapse in 5 years in a univariate analysis were selected for a multivariate analysis using the Cox proportional hazards model.

Results: Forty-nine patients were enrolled. The median age of onset was 77 (69-82) years and 71.4% were women. There were 30 ANCA-positive patients (90.0%

with anti-myeloperoxidase) and 19 ANCA-negative patients. The median age and the number of patients with renal involvements were higher in the ANCA-positive group than in the ANCA-negative group (73.0 ± 9.29 years vs. 79.5 ± 20.28 years, $p=0.0062$ and 7/30 [23.3%] vs. 0/19 [0.0%], $p=0.034$, respectively). The Birmingham Vasculitis Activity Score (ver. 3), the induction dose of GC, and the rate of immunosuppressants use were not significantly different between the two groups. During the observational period, 24 patients relapsed. The 5-year cumulative incidence of relapse was significantly higher in the ANCA-positive group than in the ANCA-negative group ($p=0.026$) (Figure 1). The Cox proportional hazards model revealed that the presence of ANCA was an independent risk factor for relapse (hazard ratio: 3.15; 95% confidence interval 1.06–9.38; $p=0.040$). During the observational period, 9 patients died (3 died from cancer, 1 from interstitial pneumonia, 1 from cerebral hemorrhage, 1 from infection, and 3 from unknown reasons). The ANCA-positive group exhibited a higher mortality rate than the ANCA-negative group without a statistical significance ($p=0.12$). The 5-year cumulative dose of GC was larger in the ANCA-positive group than in the ANCA-negative group without a statistical significance (14786 [11246–19138] mg vs. 10088 [7129–12634] mg, $p=0.12$).

Conclusion: In muscular vasculitis, the presence of ANCA is an independent risk factor for long-term relapse. Stratified treatment depending on the ANCA status may reduce the relapse rate and the occurrence of side effects of GC in patients with muscular vasculitis.

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POS0825

DEVELOPMENT OF A NEW AND SIMPLIFIED FORMULA TO PREDICT MORTALITY IN PATIENTS WITH ANCA-ASSOCIATED VASCULITIS ADMITTED TO THE INTENSIVE CARE UNIT

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Background: ANCA-associated vasculitis (AAV) can present with a wide range of symptoms, including acute kidney injury (AKI) requiring renal replacement therapy or diffuse alveolar hemorrhage (1). These two manifestations often require admission to an intensive care unit (ICU) and are associated with increased mortality. To predict ICU mortality, the Simplified Acute Physiology Score version 2 (SAPS2) is often used but has not been formally tested in AAV patients (2). In addition, it is cumbersome to assess.

Objectives: To develop a novel, simplified formula to predict ICU mortality in an AAV ICU population from an academic tertiary care center.