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Positron emission tomography scanning in ANCA associated vasculitis

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Introduction.– Tools for evaluations of activity in patients with anti-neutrophil cytoplasmic antibodies (ANCA) associated vasculitis (AAV) include scoring clinical manifestations, determination of biochemical parameters of inflammation and obtaining tissue biopsies. These tools, however, are sometimes inconclusive. 18F-fluorodeoxyglucose (FDG) positron emission tomography (PET) scans are commonly used to detect inflammatory or malignant lesions. The aim of this study is to evaluate the added diagnostic value of PET scans in patients with AAV with suspected disease activity.

Methods.– All PET scans made between December 2006 and October 2011 to assess disease activity in biopsy-proven AAV patients were retrospectively included. All scans were examined visually and quantitatively using maximum standard uptake values (SUVmax) and positive findings were classified according to their localization. Clinical data, hsCRP and ANCA levels both at the time of scanning and during a follow-up period of at least 1 year were obtained.

Results.– Fifteen scans were performed during a period of suspected active disease. 48 positive sites were found in total, most commonly the nasopharynx (n = 11 scans, mean SUVmax = 3.7) and the lung (n = 9, mean SUVmax = 4.8). Interestingly, 18 clinically occult sites were found, such as the thyroid gland (n = 5), aorta (n = 4) and bone marrow (n = 6). Four follow-up scans were made and showed decreased SUVmax values.

Conclusion.– FDG PET scans in AAV patients with active disease show positive findings in multiple sites of the body, including sites clinically unsuspected and difficult to assess otherwise. PET scans may offer an added diagnostic value when other evaluations are inconclusive.

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Circulating microRNAs in ANCA vasculitis correlate to renal function, hemoglobin and risk of relapse

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Introduction.– MicroRNAs (miRs) are present in microspheres in plasma and are stable during storage, and might have a potential as new prognostic biomarkers in ANCA associated vasculitis (AAV).

Methods.– A PCR-panel with 48 miRs was run on RNA extracted from plasma samples from 68 patients in a discovery cohort and compared with 27 healthy controls. Results were confirmed in a replication cohort of 38 AAV patients and 45 healthy controls. RNA was also extracted from peripheral blood mononuclear cells (PBMCs) as well as from polymorphonuclear cells (PMNs) and analyzed by qPCR.

Results.– In the discovery cohort levels of 15 miRs were significantly different from the controls. The differential expression was confirmed for six miRs in the replication cohort (miR-20a, -29-a, -34a, -92a, -142-3p, and -221) and remained significant when patients with active vasculitis were removed from the analysis (7 and 10 respectively). When comparing the six circulating miRs with clinical features among remission patients in the discovery cohort (n = 57), significant correlations in univariate analysis (Spearman) were found for estimated glomerular filtration rate (eGFR; in 6/6 miRs), Hemoglobin (6/6), C reactive protein (2/6), leucocyte count (1/6) and prednisolone doses (2/6), but not for thrombocyte count, age and sex. The levels of 3 of the 6 miRs were significantly different in patients with subsequent relapses (n = 11, follow-up range 10–23 months) as compared to those who remained in stable remission (n = 46). For miR-221 the correlation to subsequent relapse remained significant also after controlling for eGFR. Intracellular levels of miR-142-3p and miR-34a in PBMCs and miR-142-3p in PMNs correlated with circulating miRs.

Conclusion.– Circulating miRs are related to several clinical features in AAV, including eGFR, Hb and subsequent relapses and their levels can partly be traced to intracellular levels in PBMCs and PMNs. More work is needed to understand the basis of these correlations and reveal any possible clinical utility.

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Hemorrhagic emergency due to intrahepatic aneurism rupture in a patient with Polyarteritis Nodosa after long time of episodic fever: A case report

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Introduction.– Transmural vessel involvement in Polyarteritis Nodosa (PAN) can lead to aneurysm formation. Spontaneous visceral haemorrhage due to a ruptured aneurysm is uncommon and potentially fatal. We present a patient with PAN complicated by a ruptured intra-hepatic aneurism responsive to endovascular treatment and immunosuppressant drugs.

Methods.– A 60-years-old man had 2 episodes of fever of unknown origin [FUO] (1980, 2005) spontaneously resolved. Due to obesity, bariatric surgery was performed in 2005. During surgery a liver biopsy (consented unrelated study) was done, showing perivascular mononuclear infiltrates, non-necrotizing granulomatous hepatitis and no steatosis. No action was taken at that time. In 2008, he presented another episode of fever, myalgia, anemia, elevated ESR and dysmorphic hematuria. Positive ANA (1/160) and negative ANCA. Extensive study for connective tissue diseases, cancer, infection, and drugs was negative. No liver (images, enzymes) involvement was found. Renal biopsy showed minimal glomerular changes and interstitial nephritis. With suspected vasculitis, PDN and MIF were given,
achieved complete remission and repeated negative ANA. After 2 years he stopped treatment.

Results.— In 2011, he was admitted to the hospital in shock, with abdominal pain and fever, ANCA (-), ANA (-). Abdominal CT angiography showed liver hematoma and multiple aneurysms of the hepatic artery. Successful emergency embolization was performed. Evolution was favorable under induction with 3 g i.v. MTP, PDN and 6 pulses of 1 g CYC monthly.

Discussion.— This case illustrates the difficulties of diagnosing and treating PAN. Presentation as FUO has been described, with diagnosis based on recognition of vascular changes. We hypothesized that the peri-vascular infiltrate findings in liver biopsy could be a preliminary asymptomatic phase of PAN, which to our knowledge has not been previously reported. The intra-hepatic aneurysm rupture is a rare and life threatening complication, which was successfully managed in this case.

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Clinical characteristics of ANCA associated vasculitis in hispanic patients: Single centre experience in Chile
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Introduction.— ANCA associated vasculitis (AAV) is a group of severe diseases affecting multiple organs and requiring potent immunosuppressant therapy. Little data exists on clinical manifestations and complications in Hispanics from developing countries. Our aim is to describe clinical features and the most frequent complications of AAV in a Chilean cohort of patients.

Methods.— Retrospective review of electronic medical records of all consecutive cases hospitalized from 2006 to 2012 at Hospital Clínico P. Universidad Católica de Chile. Patients were included according to ACR and Chapel Hill criteria. A pre-designed written form was used to abstract data from hospital and follow-up records, laboratory tests and histological reports. Values were expressed as median (range).

Results.— A total of 79 patients were included; age 62 yr (26–89), 66% female. The diagnoses were: GPA (52%), MPA (42%), renal limited disease (4%) and EGPA (2%). Reasons for hospitalization were disease onset (55%), disease relapse (17%) and other reasons (28%). Median follow-up since hospitalization to last available control was 21 months (0–78). At disease onset, the main clinical features were: constitutive symptoms (66%), pulmonary (33%), renal involvement (25%), upper airway (25%). At follow up the main clinical features were: constitutive symptoms (34%), pulmonary (29%), upper airway (16%) and renal involvement (9%). During first hospitalization, 5 patients died (6%) (Alveolar hemorrhage n = 2; infections n = 2 [pneumonia, renal mucormicosis]; intestinal hemorrhage n = 1). During follow up, 34% had a relapse, 40% had infections and 46% required consecutive hospitalizations. Global treatment included glucocorticoids (75%), CYC (70%), AZA (22%), MTX (20%), MMF (4%), RTX (17%), plasma exchange (17%) and hemodialysis (11%).

Conclusion.— The clinical features of our patients are similar to other published data. In our AAV patients, the main organ systems affected were lung, upper airway and kidney, with intra hospital mortality according to the literature.

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Outcome

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Long-term outcomes of patients with Reversible Cerebral Vasocostriction Syndrome (RCVS)
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Introduction.— RCVS is characterized by acute onset of severe headaches, with or without neurologic deficit with evidence of reversible cerebral vasocostriction. Natural history and long term outcome of RCVS has not been thoroughly investigated.

Objectives.—
– To assess long-term neurologic outcome of patients with RCVS using validated outcome measures for stroke and headache;
– To determine the impact of RCVS on patient’s health related quality of life (QoL).

Methods.— Prospective cohort analysis of patients recruited from the RCVS registry was conducted. Validated questionnaires were mailed to the patients. The forms included: Headache screening form, Headache Impact Test-6 (HIT-6), Migraine Disability Assessment Test (MIDAS), Barthel index (BI), Patient Health Questionnaire (PHQ-9) and EuroQol (EQ-5D-5L).

Results.— From a total of 57 patients, three refused, 26 were lost to follow-up, eight never replied and 20 participated. Median follow-up time was 91.5 months (range 10–254). Of the 20 patients (90% female), 19 (95%) presented with thunderclap headache and had ischemic stroke (50%), subarachnoid (45%) or intracerebral (15%) hemorrhage. Eleven (55%) patients continued to have headache, but majority (91%) reported improvement in character with only 1 having worsening. Headache impact on life measured by HIT-6 showed that 2 (13%) patients had a severe impact (HIT score > 60). The mean MIDAS score was 10.67 and two (13%) patients had severe disabling headaches (MIDAS score > 21). Sixteen (94%) patients were independent by BI scores ≥ 85. EQ-5D-5L measurements showed that 12 (71%), 14 (82%) and 12 (71%) patients had no problems with mobility, self-care and leisure respectively.

Conclusion.— These data on long term outcomes suggests that half of them will continue to have headache, although decreased in severity and frequency. Although close to three-quarter of patients suffered an initial ischemic stroke or hemorrhage, almost all were independent with little disability. Pain and anxiety however decreased the QoL.

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Treatment related damage in the ANCA-associated vasculitides: An analysis of cohorts from the European Vasculitis Study Group (EUVAS) therapeutic trials
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