expenditures were related to higher bDMARD uptake (Table), though not meeting statistical significance (OR 1.91; 95% CI 0.93,3.92). Similar findings were found with country GDP (OR 1.72;95% CI 0.83,3.57).
Conclusions: There remains important residual variation across countries in bDMARD uptake of patients with SpA followed in specialized SpA centers. This is despite adjustment of well-known factors for bDMARD use such as clinical and country-level socio-economic factors.
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Early diagnosis of systemic sclerosis and myositis: biomarkers and diagnostic tool

OP0031 DEVELOPMENT OF A NOVEL EPITOPE-BASED DIAGNOSTIC ASSAY FOR SYSTEMIC SCLEROSIS

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Background: We described the conformational PDGFRα epitope of V_HPAM–Vκ16F4 agonistic autoantibody[1], cloned from memory B cells of a SSc patient, that can induce fibrosis in vivo[2]. We showed that peptides composing this epitope may be specifically recognized by serum IgG of patients with systemic sclerosis (SSc), but not of controls.
Objectives: i. To identify the immunodominant peptide within the discontinuous PDGFRα epitope of V_HPAM–Vκ16F4; ii. to identify other immunodominant epitopes recognized by agonistic autoantibodies; iii. to use these immunodominant peptides to develop an epitope-based assay for diagnosis of SSc and classification of SSc clinical subtypes.
Methods: i.The large PDGFRα peptide library used for epitope mapping of monoclonal anti-PDGFRα antibodies[1] was screened with 25 SSc (12 limited, 13 diffuse) and 25 healthy control (HC) serum samples. ii. A smaller PDGFRα peptide library containing only the top 20 conformational binders plus 20 linear and 20 conformational controls was synthesized. 60 conformational and linear peptides of a cognate protein forming a molecular complex with PDGFRα were included in the array. 20 scrambled peptides were added as negative controls. This library was screened with the same 50 serum samples. iii. A third library was synthesized, retaining the top cognate protein peptide binders, and 15 chimeric PDGFRα/cognate protein peptides, chosen among the best binders, with some nonbinding controls. This library was tested as before. Libraries were synthesized by Pepscan Presto, Netherlands. Statistical analysis was performed by Wilcoxon-Mann-Whitney test. Correlations between serological results and clinical status were made.
Results: i. An immunodominant peptide discriminating SSc from HC serum samples was identified in the first library. ii. This was confirmed by the second library, which highlighted also one immunodominant epitope from the cognate protein. Statistical analysis identified two cohorts of SSc samples (reactive vs nonreactive, the latter undistinguishable from HC) each composed by limited and diffuse SSc subtypes. iii. The third peptide library identified the chimeric peptide recognized exclusively by the reactive SSc serum samples, which were taken from patients with active, progressive disease regardless of limited vs diffuse classification, whereas the nonreactive SSc samples were taken from subjects with less active, non progressive disease.
Conclusions: We developed a conformational epitope-based assay detecting SSc-specific, agonistic, serum autoantibodies. The preliminary results suggest that this novel array may identify SSc patients with active disease, regardless of the canonical classification criteria. We propose this assay for prospective screening of large cohorts of patients affected by, or suspected for, SSc, to validate it as a tool for disease activity assessment and/or early diagnosis.
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OP0032 IS IMMUNOHISTOCHEMISTRY USEFUL TO PREDICT RESPONSE TO TREATMENT IN NECROTIZING MYOPATHIES?

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Background: Muscle biopsy is the gold standard for the diagnosis of inflammatory myopathies, but the role of immunohistochemistry in Necrotizing Myopathies (NM) has not been fully characterized yet.
Objectives: To determine if MHC-I expression and pattern of C5b-9 deposition in capillaries correlate with clinical phenotype and response to treatment in NM.
Methods: The Neuropathology Departmental database was searched to identify patients with a histological diagnosis of NM and follow up data for at least 6 months (30 patients). Electronic patient records were reviewed retrospectively to record demographics, autoantibodies, treatment, proximal muscle power at 3, 6 and 12 months by Manual Muscle Testing (MMT) (2), levels of CK and flares. Patients were classified as responders when there was improvement of MMT $\geq$20% and non-responders when MMT improvement was $<$20% (3). All biopsies were reviewed blindly by an experienced neuropathologist. MHC-I expression was classified as positive only if over expressed in all fibers. The patterns of C5b-9 deposition in endomysial capillaries were classified as specific (solid), non-specific (granular) or negative.
Results: MHC-I positive group (n=16/30) had a higher proportion of responders (62,5% vs 7,7%, p=0.002), higher number of patients with total recovery of muscle power (66,7 vs. 15,4%) and were more commonly positive for autoantibodies (75% vs. 35.7%, p=0.030) when compared to the MHC-I negative group (n=14). 17 patients were positive for auto-antibodies of which 9 were myositis specific antibodies [SRP (n=6), HMG-CoA reductase (n=1), Jo-1 (n=1), P155/140 (n=1)] and 4 were myositis associated antibodies [Ro-52 (n=2), Ku (n=1), Pm/Scl (n=1)]. 13/30 patients had C5b-9 deposition, with a specific pattern in 5 and non-specific in 8. The specific pattern group had a greater reduction of CK after 6 months compared to non-specific and negative respectively (98% vs. 77% vs. 56.8%, p=0.006), greater reduction in CK after 12 months (96.6% vs. 68.9% vs. 59.6%, p=0.024) and higher rates of responders (80% vs. 60% vs. 18,8%, p=0.001). Six patients were on immunosuppressants (azathioprine/hydroxychloroquine, n=2), steroids (n=3) or both (n=1) for a minimum of 4 weeks when the biopsy was performed. Differences in age, gender, clinical features or treatment were not found to be statistically significant.
Conclusions: Upregulation of MHC I and solid staining pattern of C5b-9 in the capillaries of NM patients appears to be associated with a better outcome.
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OP0033 SPECT- AND PET/CT IMAGING IN NEWLY ONSET IDIOPATHIC INFLAMMATORY MYOPATHY

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Background: Diagnosis of idiopathic inflammatory myopathies (IIMs) is challenging and so far no pathognomonic signs exist by imaging. Few radionuclide imaging techniques have been tested for this purpose, mainly ^{99m}Tc-pyrophosphate planar imaging and ^{18}F-fluorodeoxyglucose positron emission tomography/computed tomography ($^{18F-}$FDG-PET/CT). However, ^{99m}Tc-PYP uptake has been assessed visually and at best graded semi-quantitatively.
Objectives: We aimed for quantitative ^{99m}Tc-pyrophosphate single photon emission computed tomography/computed tomography (^{99m}Tc-PYP-SPECT/CT) as well as ^{18F}-FDG-PET/CT imaging in a group of newly onset IIM patients.
Methods: Thirteen patients (mean age 62 years) with newly diagnosed, untreated IIM underwent ^{99m}Tc-PYP SPECT/CT of the thorax, pelvis, and thighs. Seven of the patients also had a whole-body ^{18}F-FDG PET/CT scan. Forty-nine healthy controls (mean age 59 years) underwent ^{99m}Tc-PYP SPECT/CT and 26 healthy controls (mean age 57 years) had a ^{18}F-FDG PET/CT scan done. Volumes of interest (VOIs) covering the right biceps, triceps, and quadriceps muscles were drawn manually on each series. Registered ^{99m}Tc-PYP counts, respectively standardized uptake values (SUVs) of ^{18}F-FDG were obtained from all VOIs. Registered counts were decay- and attenuation-corrected and adjusted for body weight and administered dose of ^{99m}Tc-PYP, yielding a parameter similar to the SUV [g mL^{-1}].