improvement is assessed by the DAS28 (Disease Activity Score 28), particularly in the UK, where it is the basis of current NICE guidance¹.

Objectives: To develop a mapping function that charts ACR20/50/70 and ACRn to Δ DAS28 and EULAR response, and determine the relationship between the response measures.

Methods: Individual patient-level data from the 428 participants randomised to the ATTRACT² trial were used. The proportion of participants with ACRn (ACR10-ACR90) response and the change in DAS28 (Δ DAS28) at 30 weeks from baseline were calculated and analysed in participants with complete data. The cut points in Δ DAS28 that provided the equivalent proportion of participants achieving ACR10 to ACR90 at 30 weeks overall and per individual arm were searched for through tabulation. Regression models were conducted and misclassification rates calculated to test the accuracy of the mapping function. The minimum and maximum ACRn achieved per EULAR response category were also determined to establish the correlation of these two response criteria. R version 3.4.3 (2017-11-30) was used for all statistical analyses.

Results: 53%/27%/12% of all trial participants achieved ACR-ESR 20/50/70 responses, respectively. The mapping function shows that at 30 weeks a 20% improvement in ACR is equivalent to a 27.3% and 27.8% improvement from baseline in DAS28 calculated using ESR and CRP, respectively. 50% improvement in ACR is equivalent to a 45% and 46.2% improvement in DAS28-ESR and DAS28-CRP, respectively. 70% improvement in ACR is equivalent to a lower improvement in the DAS28, at 55.8% for ESR and 59.3% for CRP. Similar results were obtained when analysing the individual arms (Table 1 & Figure 1). Baseline DAS28 for all analysed groups was ≥ 6.0 . Moderate or good EULAR responses correspond to 80% and 90% improvement in ACR, respectively, whereas the no response EULAR category showed a maximum improvement in ACR-ESR/CRP of 30%-50%, respectively (Figure 2).

Conclusion: This novel mapping function enables the comparison of trials reporting ACR20/50/70 with those reporting Δ DAS28. The results imply nonlinearity in the relationship between ACR20/50/70, Δ DAS28 and EULAR response criteria. Limitations: The mapping is dependent on the population chosen to examine it, which in this analysis comprised trial participants with very active disease.

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Table 1. Mapping between the ACR criteria and change in DAS28

	Full cohort (n=428)	Placebo arm (n=88)	IFX arm* (n=86)
	Δ DAS28-ESR (%)	Δ DAS28-ESR (%)	Δ DAS28-ESR (%)
ACR-ESR criteria	(Accuracy (%))	(Accuracy (%))	(Accuracy (%))
20% improvement	27.3 (80)	24 (85)	29.5 (81)
50% improvement	45 (85)	39 (94)	44 (84)
70% improvement	55.8 (91)	44 (91)	57.9 (86)
	ΔDAS28-CRP (%)	ΔDAS28-CRP (%)	ΔDAS28-CRP (%)
20% improvement	27.8 (83)	27 (80)	30 (82)
50% improvement	46.2 (84)	44 (92)	47.5 (84)
70% improvement	59.3 (93)	50.8 (92)	50.8 (84)

ESR (erythrocyte sedimentation rate); CRP (C-reactive protein concentration).

Figure 1. Mapping between ACRn (ACR10-ACR90) and DAS28 improvement at 30 weeks.

Figure 2. Correlation of the EULAR and ACR response criteria at 30 weeks.

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FRI0685

PREVALENCE OF CARDIOVASCULAR SYMPTOMS IN PATIENTS WITH IDIOPATHIC INFLAMMATORY MYOPATHIES – A QUESTIONNAIRE BASED STUDY

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Background: Cardiovascular involvement in patients with idiopathic inflammatory myopathies (IIM) significantly worsen the prognosis and remain one of the major cause of death¹. Although it is usually subclinical, symptomatic manifestations are not infrequent and exert considerable impact on the course of IIM².

Objectives: To evaluate the frequency of subjective symptoms indicating cardiovascular involvement in patients with different subtypes of IIM and assess the impact of such ailments on daily living and degree of disability.

Methods: An online questionnaire was created and distributed by means of online support groups to English-speaking patients with IIM. Responders were asked to answer 40 questions concerning subtype and duration of disease, cardiac and musculoskeletal symptoms as well as to fill the Short 2-page Health Assessment Questionnaire (HAQ). Responses of patients with dermatomyositis (DM), polymyositis (PM), inclusion body myositis (IBM) and overlapping syndrome (OS) were analysed statistically.

Results: Questionnaire was completed by 377 responders, among which 38,78% had IBM, 34,07% DM, 16,62% PM and 10,53% OS. Dyspnoea at rest affected at least a few times a month 48,33% patients with PM, 43,09% with DM, 28,95% with OS but only 20,71% with IBM (PM vs OS $p=0,057$, IBM vs DM $p<0,001$, IBM vs PM $p<0,001$). Dyspnoea during daily activities was declared by 55,26%-60,98% of patients with OS, PM and DM, but only 37,14% with IBM (IBM vs OS $p=0,04$, IBM vs DM $p<0,001$, IBM vs PM $p=0,003$). Dyspnoea at exercise was more prevalent in PM and DM groups (respectively 80% and 86,18% vs 71,05% and 52,14% in OS and IBM; DM vs OS $p=0,03$, IBM vs OS $p=0,04$, IBM vs DM $p<0,001$, IBM vs PM $p<0,001$). Chest pain was noted mostly by participants with DM, OS and PM as in 38,33%-45,53% of them it occurred at least a few times a month, while it affected only 1/5 of responders with IBM (IBM vs OS $p=0,002$, IBM vs DM $p<0,001$). Only 37,14% of patients with IBM experienced palpitations while it was declared by 51,67%-63,16% of participants with PM, DM, OS (IBM vs OS $p=0,004$, IBM vs DM $p<0,001$, IBM vs PM $p=0,056$). In contrary to bradycardia, a feeling of too fast heart rate was common, mostly in patients with DM. Ankle oedema and dry cough occurred in respectively 43,90-60% and 43,33-52,03% of participants. Degree of disability, assessed with HAQ was significantly higher in IBM patients. Regardless of myositis subtype dyspnoea during daily activities hindered reaching, dressing and gripping (respectively $p=0,015$, $p=0,03$, $p<0,01$ if comparing patients with and without dyspnoea). Arising, walking and maintaining hygiene was less troublesome for participants with exertional dyspnoea, chest pain, palpitations or tachycardia as compared to patients without those symptoms.

Conclusion: Symptomatic cardiovascular involvement is frequent in patients with IIM. Patients with IBM are less affected by cardiac symptoms yet present the highest degree of disability. Most of cardiac symptoms do not aggravate disability.

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FRI0686

RELATIONSHIP BETWEEN VITAMIN D SUPPLEMENTATION AND MUSCULAR STRENGTH IN ELDEST POPULATION. A SISTEMATIC REVIEW

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Background: Sarcopenia is the loss of skeletal muscle mass, strength and function that occurs as a consequence of aging. This condition result in physical disability, which limits the capacity to walk, increases the risk of falls and osteoporotic fractures. Several studies suggested an inverse relation between 25OHD serum levels, muscular strength and physical performance in the eldest.

Objectives: To evaluate if vitamin D supplementation in patients > 50 years improves muscle mass, strength and performance in older patients.

Methods: We performed a systematic review through Medline, Cochrane Library, and EMBASE. Inclusion criteria: 1) patients > 50 years old, 2) receiving treatment with vitamin D 3) muscle mass and muscle strength measurements 4) systematic reviews (SR) 5) randomized clinical trials (RCT) 6) Papers written in English or Spanish.

Results: Five studies were included (4 SR and 1 RCT), n patients ranged from 121 to 5615. Patients mean age oscillated between 58-88 years, receiving variable vitamin D dose. Follow-up period fluctuated from 6 to 12 months.

Author	Nº clinical studies-patients	Results
Beaudart 2014 SR	N=30(CS) n=5.615	Significant increment in patients with 25OHD < 30nmol/L and > 65 years. Muscular strength SMD 0.17 (P=0.02)
Muir 2011 SR	N=13(CS) n=2.268	Significant improvement with vitamin D supplementation in: 1-Postural balance reduction DME -0.20 (IC95% -0.39 a -0.01, P=0.04, I2 = 0%) 2-Reduction in time to finish the test TUG -0.19 (IC95% -0.35 a -0.02, P=0.03, I2 = 0%)
Beaudart 2017 SR	N=2 (CS) n=121	No additional effect of vitamin D, except for TUG (n=1)
Stockton 2011 SR	N=17(CS) n=5.072	Patients with serum 25(OH)D <25 nmol/L caused significant improvement in hip muscular strength with vit D supplementation (DME 3.52, IC95% 2.18, 4.85).(n=2)
Cangussu 2015 RCT	N=160	Significant increment in vitamin D group. Muscular strength (chair test) 25.3% (p <0.0001)

CS= Clinical studies, SR=Systematic reviews, RCT=Randomized clinical trials, SMD=Standardized mean difference, TUG= Time UP and Go.

Conclusion: • Vitamin D supplementation in patients > 65 years with inadequate 25OHD serum levels, improve muscular strength.

• There were no benefits in muscle mass or muscular performance.

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FRI0687

NEUROMYELITIS SPECTRUM DISORDERS ASSOCIATED WITH AUTOIMMUNE DISEASES: DIFFERENCES IN CLINICAL CHARACTERISTICS AND MRI FINDINGS

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Background: Neuromyelitis Optica Spectrum disorders (NMOSD) is a rare autoimmune disease characterized by optic neuritis (ON) and/or longitudinal extensive transverse myelitis (LETM). It is commonly associated with other autoimmune diseases (OAD). Recent reports suggested racial differences in clinical phenotype and presentation of NMOSD. However, data on Black population is scarce.

Objectives: We aim to characterize, in our largely Black population, the clinical, laboratory and radiologic features of patients with NMOSD and OAD. We also aim to ascertain differences in clinical presentation between NMOSD patients with and without OAD.

Methods: In a retrospective analysis, patients ≥ 18 years of age with a confirmed diagnosis of NMOSD as per the International Panel for NMOSD Diagnosis Criteria, seen at 2 NYC urban hospitals from 1/2005 to 4/2017 were identified. Demographic, clinical, and laboratory data were extracted together with expanded disability status scales (EDDS) and imaging studies. Brain magnetic resonance imaging (MRI) was reviewed by a neuro-radiologist who applied the NMOSD Radiological criteria to identify typical findings of the disease.

Results: Forty-one patients fulfilled NMOSD criteria. 85.4% were women with a mean age of 44.7±2.03 years. 82.9% of the patients were Black and 34.1% (14/41) had an associated OAD. Systemic lupus erythematosus (SLE) was the most common OAD present prior to NMOSD diagnosis, followed by thyroid disease and Sjogren's syndrome. Aquaporin 4 immunoglobulin G (AQP4IgG) was positive in 82.9% of the entire cohort and in 76.9% (10/13) of patients with NMOSD and OAD. Hypertension (33.3% vs. 15.3%), and cardiovascular disease (13.3% vs. 4%) were more frequent in NMOSD with OAD, compared with the NMOSD only group. On initial presentation of the NMOSD only group, visual changes (40% vs. 28.5%) and ON (38.4% vs. 20%) were predominant. In the initial presentation of NMOSD with OAD group, sensory loss (78.5% vs. 57.7%), acute myelitis (40% vs. 23.1%), and elevated C reactive protein (CRP) (20.85±11.2 vs. 3.2±1.85mg/d/L) were more frequent. Disability scores (EDDS) were 5.5 for each group. Brain MRI revealed lesions affecting corpus callosum in a marble pattern, (21.4% vs. 13.6%), the hemispheres in a spindle like pattern (33% vs. 22.7%), the dorsal medulla (50% vs. 39.1%), the area postrema (38.5% vs. 27.3%) and the pons (21.4% vs. 13.4%) for NMOSD with OAD and without respectively. LETM with predilection for the thoracic region was (66.7% vs. 54.5%), cord edema (69.2% vs. 40.9%) and gadolinium enhancement (69.2% vs. 59.1%) for NMOSD with OAD and NMOSD only patients respectively.

Conclusion: AQP4IgG-positivity was observed in most of the cases in our predominantly Black NMOSD population. Over a third of the NMOSD patients had OAD. SLE was the most commonly reported. NMOSD with OAD patients tended to present with sensory loss, acute myelitis, and elevated CRP, while in NMOSD without OAD presented more with visual changes and ON. The NMOSD with OAD group had more MRI lesions involving corpus callosum, hemispheres, brainstem and LETM, compared to those with NMOSD only group.

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