Figure 2

Figure 2A. Characterization of circulating skeletal stem cells. The histogram shows higher hSSCs percentage in HD than AR patients at T0. 1 month later Tofacitinib, hSSCs percentage increased significantly.

Figure 2B. Correlation between the percentage of hSSC cells and clinical parameters. The graphs show, in RA patients, a statistically significant inverse correlation between the percentage of circulating skeletal stem cells and disease activity indices.

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AB0086

NEW METHOD TO ASSESS SKELETAL MUSCLE ATROPHY IN COLLAGEN INDUCED ARTHRITIS (CIA) MODEL

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Background: Muscle quality in rheumatoid arthritis (RA) is a new concept that involves morphological features and function. A measurement that associates cell morphology with clinical and physical parameters has not been reported in the literature. CIA is a RA mice model characterized by loss of muscle mass similar to human RA, thereby it is a convenient model to study the disease impact in muscle physiology.

Objectives: Develop an index to measure the morphometry of muscle fibers and correlate the morphological features with the muscle functional performance in CIA.

Methods: 18 DBA/1J mice were induced using complete Freund's adjuvant and a booster after 18 days induction. Along experimental phase, we evaluated muscle strength using grip strength test and clinical disease score after onset of disease. 16 healthy mice were used as control. After 25 days CIA induction, 8 CIA and 8 controls were euthanized for muscle evaluation in mild disease and, at day 50, 8 CIA and 8 control mice were euthanized for evaluation in severe disease. Tibialis anterior were collected for myofiber histological analysis. Using the Image Pro Plus software (Media Cybernetics, China), we segmented muscle fibers and assessed its area and its regularity (the last through an index named Muscle Fiber Irregularity Index, MFII). The index works as a threshold to set to

screen the degree of normal, atrophic and hypertrophic based on the morphometry of muscle fibers. Values are compared to area and shape of control (healthy) fibers. Frequency analysis and Pearson Correlations were used and statistical significance was considered as $p < 0.05$.

Results: We found 1.5% atrophic muscle fibers in control animals. Mild CIA showed the same atrophic muscle fibers percentage compared to control. However, severe CIA showed 11.8% of atrophic muscle fibers. Decrease muscle strength in CIA over time were associated with a greater atrophic muscle fiber proportion ($r = -0.8$, $p = 0.021$) and increased disease score ($r = -0.8$; $p = 0.019$).

Conclusion: Here we developed a new, objective method applied to screen for muscle quality through the morphometry of muscle fibers. Muscular Morphometric Analysis (MusMA) has potential to be used in combination with clinical parameters in several human pathophysiological analysis. Besides that, we can speculate that although muscle strength is associated with atrophic cell percentage, loss of strength does not only depend of atrophy, but disease activity also seems to influence muscle strength reduction.

References:

- [1] Turesson C, Matterson EL. – Management of extra-articular disease manifestations in rheumatoid arthritis. *Curr Opin Rheumatol*. 2004; 16(3) 206-11
- [2] Mielants H, Van den Bosch 2. – Extra-articular manifestations. *Clin Exp Rheumatology* 2009; 27(Suppl. 55): S56-S61
- [3] Bouchard DR, Janssen I. Dynapenic-obesity and physical function in older adults. *The journals of gerontology Series A, Biological sciences and medical sciences*. 2010; 65(1):71–7.
- [4] MANINI, T. M.; CLARK, B. C. Dynapenia and aging: An update. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences*, v. 67 A, n. 1, p. 28–40, 2012. ISSN 10795006. Citado na página 19.

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AB0087

FEATURES OF ANTIPHOSPHOLIPID ANTIBODIES SPECTRUM IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Currently, some data have been accumulated on the participation of antiphospholipid antibodies (aPL) in the development of thrombotic complications in patients with autoimmune rheumatic diseases (ARD), in particular, in patients with systemic lupus erythematosus (SLE). The most studied aPL in this pathology are IgG and IgM antibodies to cardiolipin (aCL), anti-β2-glycoprotein 1 antibodies (aβ2-GP 1), lupus anticoagulant (LA). The participation of IgG and IgM antibodies to prothrombin (aPT) and to annexin V (aAnV), antibodies to oxidized low density lipoproteins (aOxLDL) in hypercoagulation and the development of thrombosis is also discussed. However, the studies focusing on the investigation of aPL in patients with rheumatoid arthritis (RA) are few.

Objectives: To estimate the levels and the frequency of occurrence of aPL in patients with RA in comparison to the SLE patients and the control group.

Methods: The study included 85 female patients with ARD (RA (n=45), mean age 43,0 (33,0; 52,0) years old, disease duration 9,0 (5,0; 13,0) years, disease activity (DAS28= 5,37 (4,69; 5,89) points) and SLE (n=40), mean age 33,5 (27,5; 44,5) years old, disease duration 8,0 (5,0; 14,5) years, disease activity SLE-DAI-2K 7,0 (4,0; 11,5) points). Fifty four healthy women (mean age 38,5 (35,0; 46,0) years old) formed the control group.

The levels of antiphospholipid antibodies (IgG/IgM aCL, aβ2-GP 1, aAnV and aPT, aOxLDL) were determined with ELISA according to the instruction of a manufacturer. LA was determined by one-stage clotting assay using reagents for screening and confirmation (Technoclott LA Screen and Technoclott LA Confirm, Austria).

Results: The frequency of occurrence of elevated levels of all investigated aPL in patients with RA was similar to SLE patients and was revealed in 57,8% of cases for IgG/IgM aCL, 44,4% for IgG/IgM aβ2-GP-1, 26,7% for IgG/IgM aAnV, 8,9% for aPT, 52,6% for LA, 64,4% for aOxLDL. The patients with SLE had an increased levels of IgG/IgM aCL in 60,0% of cases, IgG/IgM aβ2-GP-1 in 57,5%, IgG/IgM aAnV in 15,0%, IgG/IgM aPT in 17,5%, high levels of LA in 68,8%, of IgG aOxLDL – in 80,0% of cases. The control group had a high levels of IgG/IgM aCL in 1,8%, IgG/IgM aβ2-GP-1 in 3,7%, IgG/IgM aAnV in 5,6%, IgG/IgM aPT in 1,8%, high levels of IgG aOxLDL – in 42,6% of cases. None of the controls had an increased level of LA. The frequency of occurrence of elevated levels of aPL and their mean levels in both groups of patients with ARD was higher as compare to the control group ($p < 0,05$).