Autoimmunity Reviews 18 (2019) 315–316

Contents lists available at ScienceDirect

Autoimmunity Reviews

journal homepage: www.elsevier.com/locate/autrev

Beyond medicine: Physical exercise should be always considered in patients with systemic autoimmune myopathies

Dear Prof. Shoenfeld,

Many years have passed since the first reports regarding physical exercises and systemic autoimmune myopathies (SAM) [1,2]. During all these years, we observed by many different means that, regardless of disease activity, the prescription of resistance or aerobic exercise seemed safe, without causing disease relapse [3]. Besides, we have always nurtured a great conviction that exercise could not only improve physical condition and quality of life but also may reduce systemic inflammation.

With this philosophy, the respected Swedish myopathy group was the first to show that 7 weeks of strength training were capable not only of improving muscular function and of quality of life but of also modulating the gene expression related to muscle inflammation and fibrosis [4]. Additionally, other studies in patients without myopathy demonstrated that physical exercise is capable of improving complete lipid oxidation, reducing intramuscular lipids [5,6], and modulating the action of angiogenic and angiostatic cytokines [7]. All these mechanisms are of major interest if considered the glucocorticoid burden that our patients carry.

Therefore, we understand that, until present time and regarding dermatomyositis and polymyositis, the prescription of physical exercises: (a) is safe regardless of the phase of the disease (acute or chronic); (b) improves physical capacity and general quality of life (as expected also in healthy individuals); and (c) may diminish inflammation and improve oxidative metabolism as suggested by limited scientific evidences.

But the SAM do not comprise only dermatomyositis and polymyositis. In fact, it is possible that many patients diagnosed back in the 90s with polymyositis presented actually inclusion body myositis or even immune-mediated necrotizing myopathy (IMNM), two entities that gained a lot of attention in the last two decades. Thus, there are a few gaps to be filled in this history.

It is true that physical exercise in inclusion body myositis is already fairly documented. So far, at least four open studies [8–11] have demonstrated that resistance and aerobic exercise is safe and probably beneficial from the point of view of muscle strength and functionality. Moreover, a recent study has demonstrated the feasibility and efficacy of a combined exercise training strategy for patients with IMNM [12].

Confirmed the feasibility and safety of exercise training, a frequent question one could ask is: then what is the best exercise? We could observe during our protocols that, although fragile, the patients usually do not have erosive or deforming arthropathies, so that the major risk of lesion resides in the muscle weakness itself. Since most protocols have utilized supported exercises, with a low requirement of plyometric strength, advanced proprioception, and extreme flexibility, it is not surprising that adverse events or lesions were unremarkable throughout the years. In our experience, the most often complaint was related to delayed-onset muscle soreness, exactly how described in previous studies [13,14]. Alexanderson et al. [14] also described in many articles home-based programs, without adverse events. Therefore, we believe that all classic strengthening exercises can be performed in this population with substantial safety, as long as correct body support is provided, correct instructions are transmitted and correct weights are chosen, based on traditional models to do so [15]. In cases of extreme frailty, Mattar et al. [16] described that blood flow occlusion protocols in SAM is also safety.

Aerobic exercises seem to be also well tolerable in patients with MAS, with an unremarkable rate of adverse events in the heart rate that was study (between 50% and 70% of the maximal heart rate). It is striking, nevertheless, how aerobic capacity is low in this population at the beginning of the protocols, reinforcing how much the oxidative capacity is impaired in the inflammatory muscle diseases and how much physical training seems appealing, considering its effects on oxidative metabolism [17].

It is true that exercise training is gaining more and more attention in the last few years by people and by the media. It seems to be no different regarding MAS. One could imagine that the subject is already fully explored by the science but we could not agree less. We are convinced that there is a huge margin for study in this area, especially concerning multicentric trials and molecular studies.

Conflict of interest

All authors declare no conflict of interest.

Support

Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brazil: #2016/19771-5 to DSO and #2017/13109-1 to SKS.

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https://doi.org/10.1016/j.autrev.2018.11.003
Received 5 November 2018; Accepted 11 November 2018
Available online 11 January 2019

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