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CORRESPONDENCE

Correspondence on: The effects of physical exercise on axial spondyloarthritis – a systematic review – reply

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Dear editor,

We read with interest the letter by Pimentel G *et al.*[1] pertaining to the systematic review (SR) about the effects of physical exercise (PE) on axial spondyloarthritis (axSpA)[2] and we are thankful for their interest in our previous work.

Analyzing the mentioned letter, we could conclude that, in general, both work groups agreed that PE has a positive effect on axSpA disease activity, physical function, and quality of life, without major safety concerns, which is in line with the more recent ASAS-EULAR axSpA management recommendations[3].

Regarding the cardiovascular risk, we agree that there is no reason for significant concern when prescribing high-intensity exercises to these patients. In most cases, the benefits outweigh the risks, as demonstrated in our research[2]. However, it is now widely acknowledged that patients with systemic inflammatory diseases, such as axSpA, face a heightened cardiovascular risk[4]. This recognition justifies implementing cardiovascular risk screening, especially for selected patients (such as smokers, obese patients, etc.), as a precautionary measure before prescribing high-intensity PE.

Indeed, for all individuals, particularly those with inflammatory rheumatic diseases like Rheumatoid arthritis and axSpA, a thorough assessment of disease and cardiovascular status, baseline cardiorespiratory fitness, and patient preferences should precede the initiation of any exercise program[5].

Furthermore, regarding the impact of prescribing supervised PE on adherence to the prescribed plan, most of the selected RCTs in our SR (all but seven) featured an intervention group (IG) with a supervised PE program. However, only one of the included studies[6] compared the adherence rate of the IG, with a supervised PE program, to the control group (CG) with an unsupervised home exercise program – and both groups demonstrated similar adherence rates. Therefore, based on our selected RCTs, we could not conclude that the supervised PE programs yielded better results in patient's adherence to the PE program. Several of the selected studies mentioned strategies aimed at improving PE adherence, such as educational programs, patient communication and feedback, and monitoring of unsupervised interventions. However, only two of them applied these strategies with subsequently proven efficacy. Nevertheless, considering the findings of several existing studies on this topic (not included in our SR due to our inclusion/exclusion criteria), we concur with Pimentel *et al.*[1] regarding all the potential benefits of a supervised PE program in axSpA Reinforcing this idea, a systematic review conducted by Cochrane has highlighted that patients participating in a supervised exercise program show greater improvements in their walking ability compared to those completing a home-based exercise program or simply adhering to walking advice[7]. Concerning the significance of prescribing and guiding PE programs by knowledgeable professionals and specialized centers, as highlighted by Pimentel *et al.*[1], definitive conclusions are elusive due to significant variability in the modalities of prescribed PE programs. The absence of comparative data between PE programs implemented by specialized centers and those by other health professionals further complicates the assessment. Nevertheless, in light of the findings from additional studies cited by Pimentel *et al.*[1], we concur that the efficacy and safety of PE programs could be positively influenced by comprehensive follow-up from a multidisciplinary team.

Understanding the precise effects of a specific type of physical exercise can be challenging, especially considering that they are typically administered together. Instead, our study[2] appears to suggest that all forms of aerobic (including high-intensity), strength, and flexibility PE programs have a positive impact on overall disease improvement, each influencing specific domains of disease impact, such as disease activity, joint mobility, and physical function. *Tai Chi* and *Pilates* emerged as two combined PE modalities consistently demonstrat-

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ing beneficial results in these patients[2]. However, we acknowledge, in alignment with Pimentel *et al.*[1], that these PE modalities could lack one of the three main types of PE previously mentioned. Therefore, as noted in our work, multimodality PE programs incorporating aerobic, strength, and flexibility exercises may offer the greatest benefits for axSpA patients[8].

Regarding the gender-specific aspects of axSpA patients, our study[2] was unable to conclude potential significant differences in PE programs for male or female patients, as the selected studies did not compare the effectiveness of interventions between genders. However, as mentioned by Pimentel *et al.*[1] the acknowledged variances between these patient groups highlight the importance of future research on this topic.

Finally, an important aspect related to adverse events that may affect adherence is highlighted. Our study[2] appears to indicate that the primary adverse event reported was increased pain intensity following various PE interventions, albeit considered a minor side effect. We did not encounter any data regarding the potential impact of this occurrence on adherence rates. We concur that It could be beneficial to investigate, in future studies, the possible ramifications on this event on the development of chronic pain and kinesiophobia, as well as its influence on the consistent maintenance of a PE program, as noted by Pimentel *et al.*[1].

Overall, we would like to emphasize the value of exchanging correspondence as it facilitates the discussion and clarification of various relevant aspects. Through this exchange, we were able to highlight the significance of PE as a non-pharmacological approach to managing axSpA, emphasizing the importance of individualized PE program prescriptions by specialized and multidisciplinary teams. With this in perspective, it is crucial to focus on patients' disease and cardiovascular status, baseline cardiorespiratory fitness, and preferences to maximize potential benefits. We believe that several aspects of this topic require further research to enable the development of precise and individualized programs.

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