

EFFECT OF EXERCISE ON OBESITY AND CARDIOVASCULAR COMORBIDITIES IN PATIENTS WITH RHEUMATOID ARTHRITIS AND SPONDYLOARTHRITIS

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Studies show that the prevalence of obesity in rheumatoid arthritis (RA) patients is higher than in the general population (approximately 30-40% of patients with RA are obese). In patients with spondyloarthritis (SpA), up to 40% of them are obese, with varying rates depending on the specific SpA subtype. Obesity in RA and SpA patients can lead to more severe functional impairments, reduced physical quality of life and exacerbate inflammation. Furthermore, obesity may also influence the treatment response through alteration of drug metabolism and can also exacerbate comorbidities, such as cardiovascular disease (CVD) and type 2 diabetes - both more prevalent in RA and psoriatic arthritis (PsA) patients (1,2). Exercise can have a significant positive impact on managing obesity in these group of in patients, but it is important to consider the disease activity, structural damage and patient's overall general condition.

Three major areas which can be beneficial in terms of reduction of body fat include: weight management through calories burning and fat reductions (eg. low-impact exercises like swimming or cycling), reducing systemic and joint inflammation by lowering levels of pro-inflammatory cytokines, improving proprioception and muscle strength and increasing range of motion (eg. stretching, yoga, and tai chi). Study by Sobejana et al. showed that 12-week medium to high intensity exercise program was safe and improved cardiorespiratory fitness in RA patients with high risk for CVD by 14%, with stable C - reactive protein level (CRP), while withdrawals were not related to the exercise (3). Another study by Stavropoulos-Kalinoglou et al. demonstrated significant improvements in aerobic capacity, blood pressure, triglycerides and lipoprotein levels, body mass index, 10-year CVD event probability, CRP level, DAS28 and HAQ in exercise group compared to control group.

The strongest predictor for the observed improvements in all the assessed CVD risk factors and disease characteristics was change in VO₂max (4). Study by Thomsen et al. investigated the effects of high-intensity interval training on cycle ergometer during 11 weeks on CV factors in patients with PsA. maximal VO₂, as a predictor of CV morbidity and mortality, was significantly increased after 3 and 9 months in the exercise group (+ 3.72 ml/kg/min CI 95% 2.38 to 5.06 p < 0.001; +3.08 ml/kg/min CI 95% 1.63 to 4.53 p < 0.001) compared to the control group. Truncal fat was also significantly reduced after 3 months in the exercise group although did not show sustained reduction after 9 months (- 1.28% CI 95% - 2.51 to - 0.05 p = 0.04) (5). Recently published systematic literature review by Ortolan et al., based on the new ASAS/EULAR recommendations for the management of axial SpA, was performed. For non-pharmacological treatment authors found a moderate or high positive impact on disease activity, function,

and pain (range in RCTs of exercise for ASDAS: 0.29-0.94, BASDAI: 0.14-1.43, BASFI: 0.04-0.92, BASMI: 0.06-1.14), although type, intensity and duration of exercises were very heterogeneous (6). Randomized study by Niedermann et al investigated the effect of 12 weeks of CV training on fitness in patients with ankylosing spondylitis (AS) (7). The fitness level (assessed with a bicycle ergometer) in the training group was significantly higher than in the control group. Improvements in cardiorespiratory fitness is important in reducing CV morbidity and mortality and an increase in VO₂ peak corresponds to decrease in cardiac events in healthy population (8). In conclusion, individually tailored exercise plan to the patient's condition and capabilities, with an emphasis on low-impact activities, can help in managing obesity and CVD in RA and SpA patients. Engaging in a well-designed exercise program can significantly enhance both physical and mental well-being in these patients.

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