



ISEI Abstract – “Session theme number – 9”

Profile of cytokines and soluble TNF receptors in response to moderate and intense exercises in active and remission patients with systemic lupus erythematosus

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ABSTRACT

Introduction: systemic lupus erythematosus (SLE) is a rheumatic autoimmune disease characterized by chronic inflammation that is associated with clinical symptoms and disease severity. Therefore, strategies to reduce inflammation, such as physical exercise, have a potential therapeutic role in SLE due to its anti-inflammatory effects. This study sought to compare cytokines and soluble TNF receptors response to: (1) moderate vs. intense aerobic exercise in active SLE (SLE_{ACT}) and remission SLE (SLE_{REM}) patients; (2) SLE_{ACT} vs. SLE_{REM} patients undergoing moderate and intense aerobic exercises; and (3) SLE patients vs. healthy controls (HC) undergoing moderate and intense aerobic exercises. **Methods:** twelve SLE_{REM} (age: 35.3±5.7 yrs; BMI: 25.6±3.4 kg/m²), 11 SLE_{ACT} (age: 30.4±4.5 yrs; BMI: 26.1±4.8 kg/m²) and 10 age- and BMI-matched HC (age: 30.6±5.2 yrs; BMI: 24.1±2.3 kg/m²) performed 30-min sessions of moderate (~50% of VO₂max) and intense (~70% of VO₂max) exercises. Serum cytokines (INF- γ , IL-10, IL-6, TNF- α) and soluble receptors (sTNFR1 and sTNFR2) were measured at rest, immediately after the exercise, every 30-min during three hours of recovery, and 24 h after the end of exercise session. **Results:** there were no differences for cytokines and sTNFRs responses between moderate and intense aerobic exercise for SLE_{ACT} and SLE_{REM} patients ($P>0.05$). Similar responses were found when SLE_{ACT} and SLE_{REM} patients were compared for moderate and intense exercises, except for 1) serum TNF- α , which was lower in SLE_{ACT} than SLE_{REM} patients after moderate exercise ($P<0.05$); 2) serum sTNFR1, which was higher in SLE_{REM} than SLE_{ACT} patients at 30th and 60th minutes of moderate exercise recovery ($P=0.027$ and $P=0.036$, respectively); and 3) serum sTNFR2, which remained higher during both sessions of exercise and recovery for SLE_{REM} in comparison to SLE_{ACT} patients ($P<0.01$). Also, a time-effect was observed for serum IL-6 and TNF- α ($P<0.05$) after intense exercise with a posterior reduction under baseline values, reaching the values experienced by HC. **Conclusion:** cytokines and sTNFRs were not different in both exercise intensities for SLE_{ACT} and SLE_{REM}, except for a few differences, which pointed out to a "less inflammatory pattern" in SLE_{ACT} patients, suggesting that exercise (even more intensive) can be safely performed by SLE patients with active disease. Finally, the reduction shown in serum IL-6 and TNF- α after intense exercise in SLE_{ACT} patients supports evidences for an anti-inflammatory effect of exercise and reinforces the importance of physical exercise to SLE treatment.

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