

ABSTRAK

Latar Belakang. Pasien dengan *systemic lupus erythematosus* mengalami penurunan fungsi kardiorespirasi yang dapat disebabkan karena proses inflamasi dari aktivitas penyakitnya sendiri yang memengaruhi jantung dan paru maupun proses inflamasi secara umum yang menyebabkan penurunan aktivitas fisik. Senam aerobik dapat diberikan kepada pasien LES dengan derajat aktivitas penyakit ringan dan berpotensi meningkatkan fungsi kardiorespirasi.

Tujuan. Membuktikan bahwa senam aerobik dapat meningkatkan fungsi kardiorespirasi pada pasien LES dengan derajat aktivitas penyakit ringan.

Metode. Penelitian quasi eksperimental pre-post test melibatkan 25 orang dengan lupus yang diberikan intervensi berupa senam aerobik. Intervensi diberikan 3 kali per minggu selama 6 minggu, masing-masing sesi 30 menit, dengan intensitas sedang skala Borg 5-6 dan 40-60% denyut nadi cadangan. Fungsi kardiorespirasi diukur menggunakan ambilan oksigen maksimal (VO_{2max}), *forced expiratory volume in 1 second* (FEV_1) dan *forced vital capacity* (FVC).

Hasil. Terdapat peningkatan signifikan pada semua parameter fungsi kardiorespirasi ($p < 0,05$). Rerata skor VO_{2max} sebesar $8,89 \pm 5,45$ dan $18,61 \pm 5,14$ di awal dan akhir penelitian. Peningkatan signifikan sebesar $9,72 \pm 2,88$ dengan $p \leq 0,001$. Rerata skor FEV_1 sebesar $1,79 \pm 0,48$ dan $2,05 \pm 0,42$ di awal dan akhir penelitian. Peningkatan signifikan sebesar $0,25 \pm 0,37$ dengan $p < 0,02$. Rerata skor FVC sebesar $1,87 \pm 0,47$ dan $2,89 \pm 0,32$ di awal dan akhir penelitian. Peningkatan signifikan sebesar $1,02 \pm 0,48$ dengan $p \leq 0,001$.

Kesimpulan. Senam aerobik dapat meningkatkan fungsi kardiorespirasi pada pasien LES dengan derajat aktivitas penyakit ringan.

Kata kunci: *systemic lupus erythematosus*, senam aerobik, fungsi kardiorespirasi, VO_{2max} , FEV_1 , FVC

ABSTRACT

Background. *Patients with systemic lupus erythematosus showed decreased cardiorespiratory function, which can be caused by the inflammatory process of the disease itself affecting the heart and lungs, or by a general inflammatory process that leads to decreased physical activity. Aerobic exercise can be prescribed to SLE patients with mild disease activity and has the potential to improve cardiorespiratory function.*

Objective. *To demonstrate that aerobic exercise can improve cardiorespiratory function in SLE patients with mild disease activity.*

Methods. *A quasi-experimental pre-post test study involving 25 individuals with lupus who received aerobic exercise intervention. The intervention was performed three times per week for six weeks, each session lasting 30 minutes, with a moderate intensity of 5-6 on the Borg scale and 40-60% heart rate reserve. Cardiorespiratory function was measured using maximal oxygen uptake (VO_{2max}), forced expiratory volume in 1 second (FEV_1), and forced vital capacity (FVC).*

Results. *There was a significant improvement in all cardiorespiratory function parameters ($p < 0.05$). The mean VO_{2max} scores were 8.89 ± 5.45 and 18.61 ± 5.14 at the beginning and end of the study, respectively. A significant increase of 9.72 ± 2.88 was observed with $p < 0.001$. The mean FEV_1 scores were 1.79 ± 0.48 and 2.05 ± 0.42 at the beginning and end of the study, respectively. A significant increase of 0.25 ± 0.37 was observed with $p < 0.02$. The mean FVC scores were 1.87 ± 0.47 and 2.89 ± 0.32 at the beginning and end of the study, respectively. A significant increase of 1.02 ± 0.48 was observed with $p < 0.001$.*

Conclusion. *Aerobic exercise can improve cardiorespiratory function in SLE patients with mild disease activity.*

Keywords: *systemic lupus erythematosus, aerobic exercise, cardiorespiratory function, VO_{2max} , FEV_1 , FVC*