

Abstrak

Latar Belakang: Kebugaran kardiorespirasi dipengaruhi oleh sistem respirasi, sistem kardiovaskuler dan sistem muskuloskeletal. *Marker* inflamasi seperti leukosit berbanding terbalik dengan kebugaran kardiorespirasi. Progresi penyakit aterosklerosis koroner dimulai oleh aktivasi jalur inflamasi.

Tujuan: Mengetahui efek penambahan *elastic taping* pada latihan otot inspirasi dengan *threshold IMT* terhadap jumlah leukosit pelari rekreasional.

Materi dan Metode: Dua belas orang yang termasuk kriteria inklusi, dibagi menjadi 2 kelompok, kelompok *threshold IMT* dan kelompok *threshold IMT* ditambah *elastic taping* selama 4 minggu. Latihan nafas dilakukan dua kali per hari, 30 repetisi per kali, lima hari seminggu dengan tahanan 60% repetisi maksimal. Tahanan dinaikkan setiap minggu. Latihan lari dilakukan tiga kali seminggu dengan total jarak 10 Km dalam seminggu di atas *treadmill*. Jumlah leukosit dinilai menggunakan *Hematology Analyser Sysmex XN 1000 B3/A1* sebelum memulai latihan dan empat hari setelah latihan terakhir di minggu ke empat.

Hasil: Jumlah leukosit setelah latihan empat minggu terdapat penurunan signifikan pada kelompok *threshold IMT* ($p= 0,033$) dan pada kelompok *threshold IMT + elastic taping* ($p= 0,049$). Penurunan jumlah leukosit antara kedua kelompok tidak terdapat perbedaan bermakna ($p= 0,742$).

Kesimpulan : Hasil penelitian ini menunjukkan latihan otot inspirasi menggunakan *threshold IMT* menyebabkan peningkatan kekuatan otot inspirasi. Peningkatan kekuatan otot inspirasi menyebabkan peningkatan kebugaran kardiorespirasi. Peningkatan kebugaran kardiorespirasi berbanding terbalik dengan kadar inflamasi

yang salah satunya adalah leukosit. Penambahan *elastic taping* pada latihan otot inspitasi dengan *threshold IMT* tidak memaksimalkan peningkatan kekuatan otot inspirasi.

Abstract

Background: Cardiorespiratory fitness is influenced by the respiratory system, cardiovascular system and musculoskeletal system. Inflammatory markers such as leukocytes are inversely proportional to cardiorespiratory fitness. Progression of coronary atherosclerosis begins with activation of the inflammatory pathway.

Aim: To determine the effect of adding elastic taping on inspiratory muscle training with threshold IMT to the number of recreational runner leukocytes.

Material and Methods: twelve people included in the inclusion criteria, divided into 2 groups, threshold IMT group and threshold IMT group plus elastic taping for 4 weeks. Breathing exercise is done twice per day, 30 reps per time, five days a week with 60% maximum repetition. Prisoners are raised every week. Running exercises are carried out three times a week with a total distance of 10 Km a week on a treadmill. The leukocyte count was assessed using the Hematology Analyzer Sysmex XN 1000 B3 / A1 before starting the exercise and four days after the last exercise in the fourth week.

Results: The number of leukocytes after four weeks of training there was a significant decrease in the threshold IMT group ($p = 0.033$) and in the threshold IMT + elastic taping group ($p = 0.049$). The decrease in the number of leukocytes between the two groups was not significantly different ($p = 0.742$)

Conclusion: The results of this study indicate that inspiratory muscle exercises using IMT thresholds cause an increase in inspiratory muscle strength. Increased inspiratory muscle strength causes an increase in cardiorespiratory fitness. The increase in cardiorespiratory fitness is inversely proportional to the level of

inflammation, one of which is leukocytes. The addition of elastic taping to the muscle inspiration exercise with threshold IMT does not maximize the increase in inspiratory muscle strength.