Pengaruh latihan interval terhadap kadar protein aktin dan myosin heavy chain otot rangka tikus pada proses penuaan = The effect of interval training on skeletal muscle actin and myosin heavy chain levels of rat in the aging process / Sari Tri Yulianti

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Abstrak

ABSTRAK
Proses penuaan menyebabkan penurunan massa otot rangka, terutama pada protein kontraktil. Latihan interval merupakan salah satu latihan fisik yang dapat menginduksi sintesis miofibril, sehingga berpotensi dapat meningkatkan massa otot rangka pada proses penuaan. Penelitian ini bertujuan untuk mengetahui pengaruh latihan interval terhadap kadar protein aktin dan myosin heavy chain (MHC) otot rangka tikus dewasa muda dan dewasa. Penelitian ini menggunakan 24 tikus strain Wistar jantan usia 6 dan 12 bulan yang dibagi menjadi 6 kelompok (n=4). Latihan interval terdiri dari berlari selama 4 menit (intensitas tinggi) dengan interval istirahat aktif 1 menit sebanyak 4 kali pengulangan. Kecepatan berlari pada treadmill ditingkatkan dari 16 m/menit hingga 25 m/menit. Latihan diberikan selama 8 minggu. Kadar aktin dan MHC jaringan otot gastrocnemius diukur dengan ELISA. Pada penelitian ini ditemukan bahwa tidak terdapat penurunan bermakna kadar protein kontraktil aktin dan MHC otot rangka antara kelompok usia dewasa muda dengan usia dewasa. Tidak terdapat peningkatan kadar protein kontraktil aktin dan MHC antara kelompok tanpa latihan dan dengan latihan interval pada kelompok usia dewasa muda. Pada kelompok usia dewasa, tidak terdapat peningkatan bermakna kadar protein kontraktil aktin dan MHC otot rangka antara kelompok tanpa latihan dan dengan latihan interval
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ABSTRACT
<hr /> Aging process leads to decline skeletal muscle mass, particularly in contractile protein. Interval training is the one of physical training that induce myofibrillar protein synthesis, thus increase skeletal muscle mass in aging process. This study aims to determine the effect of interval training on actin and myosin heavy chain (MHC) levels in rats skeletal muscle young adult and adult. This study use twenty-four male Wistar rats aged 6 and 12 months were divided into six groups (n=4). Interval training consisted of 4 min running (high intensity) interspersed by 1 min of active rest, 4 repetitions. The running speed of the treadmill were gradually increased from 16 to 25 m/min. The treatments were given for 8 wk. Actin and MHC gastrocnemius muscle levels were measured by ELISA. This study shows that there were no significant decrease in actin and MHC skeletal muscle levels between young adult and adult groups. There were no increase in actin and MHC skeletal muscle levels between interval training group and control group in the young adult group. For adult group, there were no significant increase in actin and MHC skeletal muscle levels between interval training group and control group.