

عنوان مقاله:

The effect of 8 weeks of interval training combined with the consumption of cineole, linalool, and bourbonene on MAPK/Arc gene expression and learning in rats with Alzheimer's disease

محل انتشار:

مجله دانشگاه علوم پزشکی شهرکرد، دوره 26، شماره 1 (سال: 1403)

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خلاصه مقاله:

Background and aims: This research aimed to investigate the effect of 8 weeks of interval training and the use of cineole, linalool, and bourbonene on MAPK/Arc gene expression and learning in Alzheimer's disease (AD) rats. **Methods:** In this experimental study, 40 AD rats were randomized into eight groups, including (1) control, (2) AD, (3) AD+aerobic training (AT), (4) AD+linalool, cineole, and bourbonene (LCB), (5) AD+AT+LCB, (6) AT+AD, (7) LCB+AD, and (8) AT+LCB+AD. AD was induced by injecting amyloid-beta ($A\beta$ 1-42) into the hippocampus of rats. The interval training protocol was performed five days per week for eight weeks before and after AD induction. Linalool at a concentration of 25 mg/kg, cineole at a concentration of 10 μ M, and β -bourbonene at a concentration of 10 μ g/mL were used for eight weeks. One-way analysis of variance was used for between-group comparisons, and Tukey's test was used for pairwise comparisons at $P \leq 0.05$. **Results:** AD induction caused a significant decrease in MAPK/Arc gene expression in hippocampal tissue ($P=0.001$). Interval exercise and consumption of three herbal drugs significantly increased gene expression of Arc ($P=0.001$) and MAPK ($P=0.001$). AD induction decreased learning ($P=0.001$). Interval exercise and consumption of three herbal medicines caused a significant increase in learning ($P=0.001$). **Conclusion:** Interval exercise and using three herbal medicines have more favorable effects on improving MAPK/Arc gene expression and learning in AD than each alone.

کلمات کلیدی:

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