Exercise Biochemistry Review

Proceedings of IBEC 2018, Beijing, China, October 23-25
PO-198

Effect of aerobic exercise on antioxidation ability of mice kidneys

Sisi He,Haitao Wang
Hebei Normal University， Sport College

Objective To study the total antioxidant capacity of the kidney in the Aged mice Total Antioxidant Capacity(T-AOC), Malondialdehyde (MDA) and superoxide dismutase (SOD) expression level by aerobic exercise. Objective to explore the effect of aerobic exercise on antioxidation ability of mice.
Methods 30 Male C57BL/6 strain mice were randomly divided into adult group (group CC) in the 13 months old, in the control group (Group C), 5 months of quiet feeding, the aerobic exercise group (Group E) ran for 5 months, 10 per group, and the adult group (group CC) compared with the control group (Group C), The Analysis control Group (Group C) was compared with the aerobic exercise group (Group E). After 5 months of Treadmill running in Group E, Determination of antioxidant index of each group. The statistical method is processed by SPSS20.0 statistic software, the experimental data is expressed by the mean ± standard deviation, the two mean numbers are analyzed by independent sample t test, and the difference of (p<0.05) is statistically significant.
Results T-AOC of adult Group was (0.99±0.13) U/mg Prot, control group was (0.27±0.07) u/mg prot, aerobic exercise group (0.39±0.10) U/mg prot, adult group SOD as (46.32± 1.84) U/mg, control Group (29.71±7.64) U/mg, aerobic exercise group (39.85±5.83) U/mg, adult group MDA (8.15±0.16) nmol/mg, control Group (8.83±0.26) nmol/mg, The aerobic exercise group was (6.31±1.23) nmol/mg, the adult group was SOD/MDA (5.69±0.32), the control group was (3.38±0.9) and the aerobic exercise group was (6.55±1.08). Compared with the adult group, the control group T-AOC and SOD decreased significantly, MDA significantly increased, the difference was very significant (p<0.01), sod/mda significantly decreased, SOD/MDA difference was significant (p<0.01). Compared with the control group, the aerobic exercise group T-AOC and SOD obviously increased, MDA significantly decreased, the difference was significant (p<0.01), SOD/MDA increased significantly, the difference was very significant (p<0.01).
Conclusions To sum up, with the increase of the age of mice MDA expression is increased, the 18 months old SOD expression is lower than 13 months old, indicating that the antioxidant capacity with the increase in age, The results of this study are consistent with the results of previous scholars. The results show that aerobic exercise has some antioxidant effect, and aerobic exercise can decrease expression of kidney tissue SOD, raise the expression of kidney tissue T-AOC, increase the expressionof kidney tissue, increase the expression of SOD/MDA, and reduce the oxidative stress of kidney to some extent, So as to protect the role of the kidney, aerobic exercise and kidney-related mechanisms also need our further study.