



Exercise Biochemistry Review

Proceedings of IBEC 2018, Beijing, China, October 23-25
PL-019-

Effect of early exercise on autophagy of liver tumor in mice

Ning Jiang,Zhe Wang,Jing Li,Xinghao Wang
Tianjin University of Sport

Objective To investigate whether the liver autophagy level can be altered by pre exercise training in mice liver tumors.

Methods 40 Male C57BL/6J mice aged 7 months were randomly divided into 2 groups: control group (YC) and exercise group (YE). YE were exercised on a treadmill for 12 weeks (12m/min). After 12 weeks each group was randomly divided into two groups. The tumor model was constructed by injection of HEPA1-6 mouse hepatoma cell into liver tissue. Then the groups were control group (YC), exercise group (YE), tumor group (YCT), exercise tumor group (YET). The experimental samples were prepared on the 13 day after the tumor model was constructed. The hematoxylin and eosin stain of the liver was observed. The expression of autophagy related protein BECLIN1, LC3-II and ATG5 in liver tissues of mice was detected by Western blot.

Results Compared with YCT group, the boundary of inflammatory cells and tumor cells in YET group was clear with normal cells. Compared with YCT group, the expression levels of BECLIN1, LC3-II and ATG5 in liver tissue of YET group were significantly higher ($p < 0.01$, $P < 0.01$, $P < 0.05$).

Conclusions Early exercise can help the 7 month old mice to resist the occurrence and development of the liver tumor. It's probably associated with increased level of autophagy in the liver by early exercise training.