赖红梅,万平,刘正云.有氧运动训练对大鼠下丘脑、垂体IL-1βmRNA、IL-6mRNA的影响[J].中国康复医学杂志,2007,(8):693~695

有氧运动训练对大鼠下丘脑、垂体IL-1βmRNA、IL-6mRNA的影响

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赖红梅 万平 刘正云

[1]中国福利会国际和平妇幼保健院医学中心,上海市衡山路910号200030 [2]上海师范大学生物系,上海市衡山路910号200030 [3]上海中国福利会国际和平妇幼保健院内科,上海市衡山路910号200030

基金项目:

DOI:

摘要:

目的:研究长时间运动对老年机体下丘脑、垂体IL-1、IL-6的基因表达的影响。方法:将大鼠随机分为3组:青年安静组(A组)、老年安静对照组(B组)、老年运动训练组(C组),运动组大鼠在水中进行90d渐进游泳训练,采用PT-PCR的方法检测各组大鼠下丘脑、垂体IL-1、IL-6的基因表达。结果:在下丘脑老年大鼠与青年鼠相比IL-1mRNA和IL-6mRNA表达量显著升高(P〈0.01),在垂体水平老年大鼠IL-1βmRNA的水平明显高于青年大鼠(P〈0.01),而IL-6mRNA变化不显著(P〉0.05)。通过3个月的游泳训练老年大鼠下丘脑IL-6mRNA、垂体IL-1βmRNA水平有所下降(P〈0.01),下丘脑IL-1βmRNA、垂体IL-6mRNA的表达水平变化不显著(P〉0.05)。结论:随着老化机体脑组织中炎性细胞因子的基因表达水平明显升高,运动可以抑制老年大鼠下丘脑、垂体细胞因子的基因表达水平,降低老年期神经细胞对炎症的反应性,有利于下丘脑-垂体-肾上腺轴的正常作用。

关键词:下丘脑 垂体 白细胞介素1βmRNA 白细胞介素-6mRNA

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LAI Hongmei WAN Ping LIU Zhengyun

International Peace Maternity Child Hospital of Shanghai, Shanghai, 200030

Fund Project:

Abstract:

Objective: To study long time aerobic training effect on IL-1mRNA and IL-6mRNA of hypothalamus and pituitary in old rats. Method: 45 rats were randomly divided into three groups. Groups A(n=15) younger rats did not received training;Group B (n=15) old rats did not received training; Group C(n=15) old rats received gradually training for 90 days. Reverse-transcription polymerase chain reaction(RT-PCR) was used to observe IL-1mRNA and IL-6mRNA on hypothalamus and pituitary in all rats. Result: Through experiment, we discovered comparing with younger rats, IL-1mRNA and IL-6mRNA of hypothalamus and IL-1mRNA of pituitary in old rats were significantly increase(P<0.01), while IL-6mRNA of pituitary showed no significant difference (P>0.05). After training,IL-1mRNA of pituitary and IL-6mRNA of hypothalamus were significantly lower than that of the control group of old rats(P>0.05), while the others revealed no significant difference (P>0.05). Conclusion: The results indicated that in old rat level of gene expression of inflammatory cytokine is increase, training could decline the level of gene expression of cytokine and the response of neuron to inflammation to restore normal function of HPA.

Keywords:hypothalamus pituitary IL- 1 mRNA IL-6mRNA

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