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运动对BALB/c小鼠肺巨噬细胞吞噬活性的影响 [点此下载全文](#)

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摘要:

摘要目的: 探讨运动对BALB/c小鼠肺巨噬细胞(BAMs)吞噬活性的影响。方法: 选择300只8—10周龄的雄性BALB/c纯系小鼠为实验对象, 随机分为对照组(CE)、急性中度组(ME)或剧烈运动组(SE), 每组100只, 在传动式跑步机上持续跑步。CE组不运动, ME组和SE组速度由9m/min开始, 每隔3min增速1次, ME组强度为17m/min, SE组运动直至体力耗尽为止。各组小鼠经由重复的肺部冲洗收集巨噬细胞(BAMs), 应用荧光显微镜及流式细胞分析仪分析BALB/c小鼠巨噬细胞吞噬活性的变化, 比较各组肺巨噬细胞吞噬活性之间的差异。结果: 急性中度运动与剧烈运动分别造成约40%及100%以上的白细胞增加。剧烈运动后白细胞计数呈两相式增加, 剧烈运动刚结束时淋巴细胞和性粒细胞分别比运动前增加24.9%和21.6%。中度运动组以及剧烈运动组吞噬细胞百分比(%P)和平均吞噬颗粒数(PI)分别为: 34%、79%和1.92、5.09, 与对照组比较剧烈运动可促进肺泡巨噬细胞吞噬失调颗粒的能力, 而中度运动则否。剧烈运动结束后(Post-SE 0h)的肺巨噬细胞(BAMs)吞噬活性最强, 且随休息时间增加而渐减, Post-SE 1h仍有显著的促进作用, 而在4h后回到基值, 一直到16h后不再变化。Post-SE 0h组%P和PI与同组对照组比较增加明显(P<0.05), 而吞噬IgG和IgG/c'颗粒活性只稍微增加, 与同组对照组比较差异未达到显著水平(P>0.05)。结论: 急性剧烈运动对BALB/c小鼠肺巨噬细胞吞噬无失调颗粒的能力具有促进作用。

关键词: [运动](#) [BALB/c小鼠](#) [C57BL/6纯系小鼠](#) [肺巨噬细胞](#) [吞噬活性](#)

The effect of exercise on phagocytosis of pulmonary bronchoalveolar macrophages in BALB [Download Fulltext](#)

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Fund Project:

Abstract:

Abstract Objective: Exploring the influence of exercise on BALB/c laboratory rats' alveolar macrophage phagocytic activity. Method: A total of 300 male BALB/c pure lines laboratory rats are selected to be randomly and averagely distributed into Control Group (CE), Medium Group (ME) and Strenuous Exercise Group (SE). Traditional running machine is equipped for the test. Rats in CE group will be kept still. Rats in ME and SE groups participate in the test with 9m/min as the basis, then increasing once in every three minutes, until being increased to 17m/min for ME group and becoming exhausted for SE group. Macrophages of laboratory rats are to be collected through repeated lung washing. During the test, fluorescence microscope and flow cytometer are used to analyze amount variation of rats' alveolar macrophage, and to compare the difference between control group and exercise group. Result: Acute medium exercise and strenuous exercise separately lead to 40% and 100% leukocyte growth. After strenuous exercise, the amount of leukocyte also increases. Moreover, lymphocyte and leukocyte separately increase by 24.9% and by 21.6%, compared with that before the exercise. The phagocyte proportion (%P) and average phagocytic particle (PI) in medium exercise group and strenuous exercise group are separately raised by 34%, 79% and 1.92, 5.09. Through comparison, it is discovered that, strenuous exercise could improve pulmonary alveoli macrophages' ability in phagocytizing imbalance particles. However, medium exercise is faced with different situation. After strenuous exercise (Post-SE?0h), lung macrophages' (BAMs) phagocytic activity is of the highest, decreasing with rest time. By Post-SE?1 h, there is still significant promotional role. Four hours later, the influence returns back to normal. 16 hours later, it is stabilized. Compared with control group, %P and PI of Post-SE?0h?also increase significantly (P<0.05). By contrast, phagocytic IgG and IgG/c' particle activity increase quite slightly, not reaching to a significant level compared with the control group (P>0.05). Conclusion: Acute strenuous exercise has promotional role on BALB/c laboratory rats' lung macrophages' ability in phagocytizing imbalance particles.

Keywords: [exercise](#) [BALB/c mice](#) [pulmonary bronchoalveolar macrophage](#) [phagocytosis](#)

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