

Cytokine Pattern is Affected by Training Intensity in Women Futsal Players

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Abstract

To find the relation between exercise and cytokines, we examined the effect of the training intensity on the levels of cytokines, including interferon-gamma (IFN- γ), interleukine-4 (IL-4) and interleukine-4/interferon-gamma ratio (IL-4/IFN- γ ratio) in female Futsal players. Twelve well-trained female college Futsal players aged 19~22 participated in this study. The athletes completed 30-min of running at 60~65% maximal heart rate [moderate-intensity exercise], and 30-min of running at 75~80% maximal heart rate [high-intensity exercise]. peripheral blood samples were collected 24 h before and 24 h and 48 h after each of the exercise bouts. finding showed that The 30-min bout of moderate-intensity exercise induced a significant increase in IFN- γ ($p=0.01$) and significant decreases in IL-4 ($p=0.001$) and IL-4/IFN- γ ratio ($p=0.003$). And also, 30-min of running at 75~80% maximal heart rate induced increase in IFN- γ ($p=0.07$) and decreased in IL-4 ($p=0.01$) and IL-4/IFN- γ ratio ($p=0.06$) that these changes not significantly. In summary, exercise intensity can effect on the magnitude of changes in cytokines. It seems that moderate intensity exercise enhances cytokine pattern in female college Futsal players.

Keywords: Interferon-gamma, Interlukine-4, IL-4/IFN- γ ratio, Moderate-intensity exercise, High-intensity exercise