

ABSTRACT

ACTIVATION OF SIGNALING PATHWAYS OF CARDIAC HYPERTROPHY BY ANGIOTENSIN II RECEPTOR AFTER A SESSION OF STRENGTH EXERCISE

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The angiotensin II type I (AT1) receptor has an important participation in the development of cardiac hypertrophy (CH). Previously, we showed that AT1 receptor participates in the cardiac hypertrophy induced by resistance training in rats (Barauna, et. al., 2008). We studied AT1 receptor signaling pathways related to the CH in rats submitted to a session of strength exercise (SRE). We used male Wistar rats randomly divided into six groups: control (CO), exercised and sacrificed 5 minutes after training (Ex 5); exercised and sacrificed 30 minutes after exercise (Ex 30); control treated with Losartan (Co Los); treated with Losartan, exercised and sacrificed 5 minutes after exercise (Ex 5 Los); treated with Losartan, exercised and sacrificed 30 minutes after exercise (Ex 30 Los). The exercise session consisted of 4 sets of 12 repetitions with an interval of 1min and 30s among sets, stimulation of 10-15v, 0.3 in length and 4s in between repetitions with an work (80% of 1RM). The results show that in Exe 5 and Exe 30 groups occurred an increase in protein phosphorylation of AKT, whereas the phosphorylation of mTOR and ERK 1/2 were increased only in Exe 30 group. These effects were blocked by the use of losartan in Exe 5 Los and Exe 30 Los groups. Protein JNK, p70^{S6K} and p38 expression was not different among groups. These results, together with our previous data show that the

AT1 receptor has a role in the activation AKT/mTOR and ERK 1/2 signaling pathway after a SRE.

Keywords: cardiac hypertrophy, renin angiotensin system, ATR1, physical exercise.