

Adenine Nucleotides Hydrolysis in Diabetic Rats Lymphocytes

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Diabetes alters the metabolism of nutrients presenting the main feature hyperglycemia generated by the insulin secretion decrease and/or cellular resistance. Changes in immune system and signaling purinergic are some of the complications arising from diabetes. Adenine compounds can perform many functions in inflammatory process and tissue regeneration, acting through purinoceptors P1 and P2. The ectonucleotidases are enzymes that regulate the extracellular levels of adenine nucleotides, our aims was evaluating the effect of physical training or insulin therapy on the ectonucleotidase activities in mesenteric lymphocytes obtained from diabetic rats. At the end of training or insulin therapy, the animals were sacrificed and mesenteric lymph nodes removed for assessment of enzyme activities. The hydrolysis of ATP, ADP and AMP were quantified by the release of Pi released by Chan *et.al* method. Ours previous data demonstrated that the nucleotides extracellular hydrolysis in mesenteric lymphocytes of diabetic animals are modify in relation with controls (increase of 63, 112 and 67% for ATP, ADP and AMP hydrolysis, respectively). The physical training was not able to reverse the enzymatic modifications induced by diabetes. Forward, we observed normalization on ATP and ADP extracellular hydrolysis in mesenteric lymphocytes obtained for diabetic rats treated with insulin by 6 days. More studies are necessary to clarify how nucleotides can modulate the immunologic responses and what is influence of ectonucleotidases in diabetes diseases.