

P011 Effect of losartan on ROS production induced by palmitate in isolated rat pancreatic islets

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Elevated glucose levels and free fatty acids (FFA) overload together cause oxidative stress and a pro-inflammatory state, which affects endothelial cells, myocytes, adipocytes and pancreatic beta cells as well. Recent evidence has shown that there is a local renin-angiotensin system (RAS) in the pancreas and that RAS inhibition produces beneficial effects in various pre-clinical animal models of diabetes. The purpose of this study was to investigate the effect of losartan (angiotensin receptor blocker) on superoxide generation induced by palmitate in pancreatic islets. Rat pancreatic islets were incubated with glucose (2.8 or 11.1mM) plus palmitate (0.1mmol/L) and/or losartan (1 μ mol/L). Superoxide production was measured by fluorescence based hydroethidine assays. Incubation with palmitate increased superoxide production in the presence of 2.8mM glucose by approximately 43%. This increase was abolished when losartan was added in the incubation media. High glucose and palmitate also increased superoxide production about 40% but losartan only abolished the effect when palmitate was added in the media. We conclude that RAS has an important role in the oxidative stress induced by palmitic acid in pancreatic islets.

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