EFFECT OF LINAGLIPTIN VS. METFORMIN ON INSULIN SECRETION, INSULIN SENSITIVITY AND GLUCOSE CONTROL IN GLUCOSE INTOLERANCE PATIENTS

M. González Ortiz, D.M. Hernández Corona, T. González Heredia, E. Martínez Abundis
Institute Experimental and Clinical Therapeutic, University of Guadalajara, Mexico

The aim of this study was to evaluate the effect of linagliptin vs. metformin on insulin secretion, insulin sensitivity and glucose control in glucose intolerance patients. A randomized, double blind, clinical trial in parallel groups was performed in 16 adults with glucose intolerance diagnosis in accordance with the American Diabetes Association criteria. Before and after the intervention a lipid profile and A1C concentrations, as well as, glucose and insulin levels before and after (30, 60, 90 and 120 min) a 75 g of dextrose load were measured. Eight patients received metformin (500 mg) two times daily before meals for three months. The remaining eight patients received linagliptin (5 mg) one day in the morning before meals and placebo (500 mg) at night. Area under the curve (AUC) of glucose and insulin, total insulin secretion (insulinogenic index), first-phase of insulin secretion (Stumvoll index), and insulin sensitivity (Matsuda index) were assessed. Statistical analyses were calculated with Wilcoxon and Mann Whitney U tests. There were not significant differences in clinical and laboratory measurements at baseline between groups. After linagliptin administration, a significant decrease in glucose at 90-min (10.8 ± 2.6 vs. 7.9 ± 2.0 mmol/L; p 0.05) and AUC of glucose (1164 ± 211 vs. 953 ± 207 mmol/L; p 0.05). There were no changes with metformin administration. In conclusion, linagliptin during 3 months in glucose intolerance patients decrease glucose at 90-min and AUC of glucose.