Abstract

Amylin is a 37-aminoacid pancreatic protein that exerts control over several metabolic events such as glycemia and lacticemia. Amylin has long been shown to induce increases in arterial plasma glucose. We decided to investigate whether amylin plays additional roles in the glucose metabolism. We evaluated glucose homeostasis using whole blood from the tail tip of fasting, conscious, unrestrained normal and streptozotocyn-induced diabetic mice following subcutaneous administration of mouse amylin. Subcutaneous injection of 1 g mouse amylin caused a transient decrease in whole blood glucose in both normal and diabetic mice in the absence of insulin. The blood glucose levels were lowest approximately 2 hours after amylin administration, after that they gradually recovered to the levels of the control group. The hypoglycemic effect followed a dose-dependent response ranging from 0.1 to 50 g / mouse. These results reveal the ability for amylin in the direct control of glycemia at low doses in the absence of insulin.

Keywords

Amylin, islet associated polypeptide, glycemia, diabetes, mice, hypoglycemia.