fasting or post-load glucose and insulin plasma levels. Neither in females nor in males, abdominal fat was associated with an increase in the UAE. However, in the obese group, UAE was strongly related to the level of SBP ($r^2$=0.67; $P<0.0001$) and DBP ($r^2$=0.55; $P<0.0001$). We suggest that in Hispanic glucose tolerant females and males, the elevation in BP, the hyperinsulinemia and dyslipidemia associated with obesity and abdominal obesity, are not associated with microalbuminuria. However, in the obese subjects, the BP, particularly the SBP, was a strong determinant of the level of UAE. Microalbuminuria may occur later in the course of the dysmetabolic syndrome, due to worsening of hypertension and development of hyperglycemia.

Key Words: Microalbuminuria; dyslipidemia; obesity; hyperinsulinemia

E046

INSULINOTROPIC EFFECT OF L-ARGININE AND GLUCOSE IN CONTROL SUBJECTS AND IN HYPERTENSIVE, OBESE, HIPERINSULINEMIC PATIENTS


The insulinotropic effect of l-arginine is well known; the mechanism by which l-arginine releases insulin is not clear. In this study we evaluated and compared the insulinotropic effects of glucose and of l-arginine in healthy control subjects (C) and in hypertensive, obese glucose intolerant individuals (HTO). HTO were older (51±2 vs 40±4 yr), heavier (BMI:35±2 vs. 23±1kg/m²), had higher BP (143±4/98±4 vs. 114±3/75±2 SBP/DBP) and higher fasting insulin (21±4 vs. 15±2 μU/ml) and glucose levels (104±16 vs. 75±2 mg/dl) than control subjects. The oral glucose tolerance test was performed by administering 75g of glucose, and blood samples obtained for glucose and insulin levels, at 0,30,60,90,120,180 and 240 min after glucose ingestion. Seven days later subjects returned to the Unit for the l-arginine test. A total of 50 mg/kg of l-arginine were given as a 30 min iv infusion and −30,0,5,10,30,60 and 120 min samples were drawn for insulin and glucose. The areas under the curve (AUCs) for insulin levels following the oral glucose intake averaged 94±18 in controls and 232±4 in the HTO group ($P<0.001$). The insulin AUC’s after the l-arginine test averaged 29±6 in controls and 80±15 in the HTO group ($P<0.001$). A very strong relation was encountered between the insulin AUC after an oral glucose load and the insulin AUC after the infusion of l-arginine ($r=0.86$; $P<0.001$). Hyperinsulinemia induced by oral glucose was associated with hyperglycemia; whereas, negligible changes in plasma glucose were observed after l-arginine infusion. These results suggest the presence of excessive insulin secretory activity in obese, hypertensive, glucose intolerant subjects.

Key Words: Hyperinsulinemia; l-arginine; glucose; hypertension; obesity