International Conference and Exhibition on
Obesity & Weight Management
December 3-5, 2012 DoubleTree by Hilton Philadelphia, USA

Assessment of circulating adipokine levels in type 2 diabetes mellitus in Lagos, Nigeria

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Abstract

Background

Type 2 diabetes remains a global concern with its numerical increase occurring in developing countries which include Nigeria and adipose tissue-secreted factors called “adipokines” are involved in energy homeostasis and regulation of glucose and lipid metabolism. Hence, this study was undertaken with the aim of investigating adipokine levels in the Type 2 Diabetes Mellitus.

Materials

This is a cross sectional study conducted in Lagos University Teaching Hospital (LUTH), a700 bed tertiary centre in the city of Lagos, Southwest Nigeria. 53 diabetic subjects with mean± standard deviation (56.72±10.44) and 27 non-diabetic controls (38.67±9.63) were recruited into the study. Fasting blood Glucose (FBG), glycosylated haemoglobin (HbA_1C), leptin, and resistin were assayed. Body mass index (BMI) was also measured.

Results

Mean BMI was higher but not statistically significant in diabetics than in non diabetics (diabetics 28.77±5.35; non diabetics 27.38±6.04; $p > 0.05$). This corroborates other studies that the higher level of adiposity predisposes higher level of FBG and HbA_1C and to the incidence of DM as a result of the effect of increasing fat mass on insulin sensitivity [1,2].Resistin was significantly higher in diabetics (diabetics 31.26±2.5; non diabetics 16.61±2.16; $P < 0.01$) compared to non-diabetics. Leptin correlated very strongly with BMI (r = 0.620, $p< 0.0001$) and was significantly higher in females than males (female: 9.72±1.70; male: 1.79±0.54; $p < 0.0001$) which agrees with the study conducted by Zimmet and Thomas [3].

Conclusion

This study concludes that circulating adipokines have variable effect on the glucose and fat metabolism. BMI and resistinlevels were higher in diabetics. Leptin was found in this study to correlate very strongly with BMI (adiposity). There was also a strong gender dependence observed as leptinlevel was signficantly higher in females than males.