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Fructosamine in obese normal subjects and type 2 diabetes.

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Abstract

The effect of various grades of obesity on serum fructosamine concentrations was studied in Type 2 diabetic (n = 105) and non-diabetic (n = 128) subjects. In obese diabetic and non-diabetic subjects (body mass index > or = 30 kg m-2), the concentration of fructosamine was markedly lower than that obtained for lean diabetic and non-diabetic subjects with similar glycaemic control. Stepwise multiple-regression analysis showed that fructosamine was associated with glycaemic control (as indicated by fasting plasma glucose and glycated haemoglobin), fasting triglycerides, and body mass index in both diabetic and non-diabetic subjects. In vitro studies showed marked decreases in both the extent of [14C]-glucose incorporation into plasma proteins and fructosamine production by incubated sera of obese patients whether diabetic or non-diabetic, with obese subjects with body mass index > 40 kg m-2 exhibiting the greatest decrease. In conclusion, serum fructosamine concentrations are shown to decrease in obese diabetic and non-diabetic subjects with body mass index > or = 30 kg m-2 giving rise to the underestimation of glycaemic control as indicated by fructosamine measurement. A change in the glycation reaction itself may be partly responsible for such decrease