COMMENTS AND RESPONSES

Plasma Retinol-Binding Protein-4 Concentrations Are Elevated in Human Subjects With Impaired Glucose Tolerance and Type 2 Diabetes

Response to Gavi et al.

Gavi et al. (1) investigated the association between visceral adipose tissue (VAT) mass by computed tomography and circulating retinol-binding protein-4 (RBP4) concentrations in nondiabetic subjects. They could not find a correlation between VAT and serum RBP4 concentrations, while VAT was inversely correlated with serum adiponectin concentrations in their subjects. The study by Gavi et al. did not support specific association between circulating RBP4 concentrations and abdominal obesity, which we (2) and Graham et al. (3) observed in previous studies. However, it is in accordance with the observation by Takashima et al. (4) that serum RBP4 concentrations were not correlated with waist-to-hip ratio in 473 nondiabetic subjects (mean ± SD age 64.8 ± 11.1 years). Different study populations as well as different measure of abdominal obesity might contribute to this inconsistency between circulating RBP4 concentrations and abdominal obesity. Although Gavi et al. directly measured visceral fat mass, they studied only 16 nondiabetic individuals with narrow range of BMI (24.6 ± 0.8 kg/m^2), whose clinical and metabolic characteristics are not provided. Thus, it is somewhat difficult to compare their observation with our results. In a recent report, Janke et al. (5) found that RBP4 mRNA was downregulated in subcutaneous tissue of obese women, and circulating RBP4 concentrations were similar in normal weight, overweight, and obese postmenopausal women (n = 74). These data suggest that the differences exist between different adipose tissue depots in the regulation of RBP4 expression and secretion. Interestingly, it was shown (6) that elevation in circulating RBP4 concentrations was strongly correlated with visceral fat mass, and RBP4 mRNA expression was significantly higher in visceral fat compared with subcutaneous fat, independent of sex and type 2 diabetes (n = 196). Nevertheless, as recognized by Gavi et al. (1), it is necessary to reevaluate the correlation between circulating RBP4 levels and visceral fat mass with a larger population.

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