

## Adiponectin and the Development of Type 2 Diabetes Mellitus - The ARIC Study

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Results:

Adipocyte-derived cytokines have been increasingly linked to diabetes and atherosclerosis, both in epidemiologic and in basic science research. Adiponectin, one such protein, has important metabolic and anti-inflammatory actions consistent with its proposed protective role in diabetes development. The few epidemiologic studies that have to date examined this association generally support this role. To gain further insight into this question, we conducted a case-cohort study representing the approximately 9-year experience of 10,275 middle-aged, U.S. African-American and white participants of the Atherosclerosis Risk in Communities Study. Adiponectin was measured on stored plasma of 581 incident diabetes cases and 572 non-cases. Overall hazard ratios for developing diabetes for those with adiponectin values in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> (vs. 1<sup>st</sup>) quartile were 0.57 (0.41 □ 0.78), 0.39 (0.27 □ 0.56) and 0.18 (0.11 □ 0.27) after adjustment for age, gender, ethnicity, study center, parental history of diabetes, and hypertension; and 0.72 (0.48 □ 1.09), 0.67 (0.43 □ 1.04) and 0.58 (0.34 □ 0.99) after additional adjustment for body mass index, waist-hip ratio, fasting glucose, insulin and an inflammation score composed of 6 inflammation markers. The association was of similar magnitude in men and women, and in whites and African-Americans, but differed by smoking status (interaction P=0.01). High adiponectin levels were associated with a lower incidence of diabetes in non-smokers (HR 4<sup>th</sup> vs. 1<sup>st</sup> quartile for never smokers 0.43, 95% CI 0.21 □ 0.85; in ex-smokers, 0.38, 95% CI 0.15 □ 0.95); but not in smokers (HR 4<sup>th</sup> vs. 1<sup>st</sup> quartile 2.03, 95% CI 0.73 □ 5.63; interaction P=0.01). In conclusion, in this community-based sample of U.S. adults, high adiponectin levels were associated with a lower incidence of diabetes.

Category:

Epidemiology