Lifestyle-related factors, obesity, and incident microalbuminuria: the CARDIA (Coronary Artery Risk Development in Young Adults) study.

BACKGROUND: Modifiable lifestyle-related factors are associated with risk of coronary heart disease and may also influence kidney disease risk.

STUDY DESIGN: Community-based prospective cohort study.

SETTING & PARTICIPANTS: 2,354 African American and white participants aged 28-40 years without baseline microalbuminuria or estimated glomerular filtration rate <60 mL/min/1.73 m² recruited from 4 US centers: Birmingham, AL; Chicago, IL; Minneapolis, MN; and Oakland, CA.

FACTORS: Current smoking, physical activity, fast food habits, obesity, and diet quality, which was based on 8 fundamental components of the Dietary Approaches to Stop Hypertension (DASH) diet, including increased intake of fruits, vegetables, low-fat dairy products, whole grains, and nuts and legumes and reduced intake of sodium, sugar-sweetened beverages, and red and processed meats.

OUTCOMES & MEASUREMENTS: Spot urine albumin-creatinine ratios were obtained at baseline (1995-1996) and three 5-year follow-up examinations (5, 10, and 15 years' follow-up).
Incident microalbuminuria was defined as the presence of age- and sex-adjusted albumin-creatinine ratio $\geq 25$ mg/g at 2 or more of the successive follow-up examinations.

**RESULTS:** During the 15-year follow-up, 77 (3.3%) individuals developed incident microalbuminuria. After multivariable adjustment, poor diet quality (OR, 2.0; 95% CI, 1.1-3.4) and obesity (OR, 1.9; 95% CI, 1.1-3.3) were associated significantly with microalbuminuria; current smoking (OR, 1.6; 95% CI, 0.9-2.8) was associated with microalbuminuria, although the CI crossed 1.0. Neither low physical activity (OR, 1.0; 95% CI, 0.5-1.8) nor fast food consumption (OR, 1.2; 95% CI, 0.7-2.3) was associated with microalbuminuria. Compared with individuals with no unhealthy lifestyle-related factors (poor diet quality, current smoking, and obesity), adjusted odds of incident microalbuminuria were 131%, 273%, and 634% higher for the presence of 1 (OR, 2.3; 95% CI, 1.3-4.3), 2 (OR, 3.7; 95% CI, 1.8-7.7), and 3 (OR, 7.3; 95% CI, 2.1-26.1) unhealthy lifestyle-related factors.

**LIMITATIONS:** Self-reported dietary history and physical activity, low number of outcomes.

**CONCLUSIONS:** Consuming an unhealthy diet and obesity are associated with incident microalbuminuria.

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