Albuminuria and Young Age Onset Diabetes: A Nationwide Population-based Study

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Backgrounds: Early-onset diabetes is associated with increased morbidity and mortality and a substantial lifetime burden. Since insulin resistance is one of the mechanisms of podocyte injury, we tried to determine the predictability of albuminuria for newly diagnosed type 2 diabetes with early onset.

Methods: We screened 6,891,399 subjects aged ≥20 and <40 years without a history of impaired glucose tolerance or diabetes from the Korean National Health Insurance Service database between 2009 and 2012. A multivariate Cox proportional hazard model was used to identify the impact of albuminuria on early-onset diabetes.

Results: Among a total of 5,383,779 subjects, 62,148 (1.2%) subjects developed early-onset diabetes over 7.3±1.2 years. Albuminuria significantly increased the risk of early-onset type 2 diabetes (adjusted hazard ratio (aHR) 1.62, 95% confidence interval (CI) 1.55, 1.70) after adjustment for age, sex, anthropometric data, physical exercise status, serum glucose, and total cholesterol. The risk of early-onset type 2 diabetes increased more in subjects with more components of metaobolic syndrome (MetS). In subjects with albuminuria, hypertriglyceridemia increased the risk of early-onset type 2 diabetes (aHR 2.02, 95% CI 1.81, 2.25).

Conclusions: Early-onset diabetes was strongly associated with albuminuria detected by dipstick. In order to reduce the likelihood of developing an illness, people with MetS should have their albuminuria closely monitored.