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Introduction & Objectives: Diabetes is associated with increased risk of cancer at several sites, but its association with cancer of the kidney is unclear. We aimed to estimate kidney cancer risk in type 2 diabetic patients' in a large, population-based cohort study in Lithuania.

Materials & Methods: The cohort was composed of diabetic patients identified in the National Health Insurance Fund database during 2000–2012. Cancer cases were identified by record linkage with the national Cancer Registry. Standardized incidence ratios (SIRs) for kidney cancer as a ratio of observed number of cancer cases in people with diabetes diagnosis to the expected number of cancer cases in the underlying general population was calculated.

Results: 115923 patients diagnosed with type 2 diabetes mellitus between 2000 and 2012 were identified. Overall, 598 cases of primary kidney cancer were identified versus 393.95 expected within a period of observation yielding an overall SIR of 1.52 (95% CI: 1.40–1.64), significantly higher risk was found in both male and female diabetic patients in all age groups. Significantly higher risk of kidney cancer also was found in both metformin users and never-users' groups (SIRs 1.45, 95% CI: 1.33–1.60 and 1.78 95% CI: 1.50–2.12, respectively). The risk of kidney cancer showed decreasing risk with cumulative metformin dose, however risk of kidney cancer remained higher than in general population in the highest cumulative metformin exposure group (SIRs 1.25, 95% CI: 1.07–1.46).

Conclusions: The patients with type 2 diabetes have higher risk for kidney cancer compared with the general Lithuanian population.