

# Competing risks analysis highlights new targets in preventing ESRD and death of diabetics

18 February 2011

Patients with both type 1 diabetes and CKD have an increased risk of adverse outcomes. Despite aggressive treatment, many patients with type 1 diabetes and overt nephropathy develop End-Stage Renal Disease (ESRD) and/or succumb to a premature death. The competing risks of death and ESRD may confound the estimates of risk for each outcome.

Now, the researchers at the University of Helsinki, University Hospital of Helsinki and Folkhälsan Research Center, Finland, and at the Queen Elisabeth Hospital and Baker IDI Heart and [Diabetes](#) Institute, Australia, have determined the major predictors of the cumulative incidence of ESRD and pre-ESRD mortality in patients with type 1 diabetes and macroalbuminuria while incorporating the competing risk for the alternate outcome into a Fine-Gray competing-risks analysis. This research is appearing in an upcoming issue of the *Journal of the American Society Nephrology* (JASN).

The researchers followed 592 patients with macroalbuminuria for a median of 9.9 years. During this time, 56 (9.5%) patients died and 210 (35.5%) patients developed ESRD. Predictors of incident ESRD, taking baseline renal function and the competing risk for death into account, included an elevated HbA1c, elevated LDL cholesterol, male sex, weight-adjusted insulin dose, and a shorter duration of diabetes. By contrast, predictors of pre-ESRD death, taking baseline renal function and the competing risk for ESRD into account, included only age, the presence of established macrovascular disease, and elevated cholesterol levels.

"In our cohort, ESRD was the most likely outcome, potentially driving epidemiologic associations between risk factors and all-cause mortality. By

adjusting for these competing risks, we show that poor glycemic control increases the cumulative incidence of ESRD, but is not associated with increased pre-ESRD mortality. By contrast, improved lipid control may affect both ESRD outcomes and pre-ESRD mortality", says Dr. Carol Forsblom from the University of Helsinki and Folkhälsan Research Center.

"This kind of novel statistical approach has the potential to shed new light on the targets and strategies for preventing premature mortality in patients with [type 1 diabetes](#)," Dr. Forsblom states.

Provided by University of Helsinki

APA citation: Competing risks analysis highlights new targets in preventing ESRD and death of diabetics (2011, February 18) retrieved 29 July 2022 from <https://medicalxpress.com/news/2011-02-analysis-highlights-esrd-death-diabetics.html>

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