

Renal impairment and all-cause mortality in cardiovascular disease: effect modification by type 2 diabetes mellitus.

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Abstract

BACKGROUND:

Renal impairment and type 2 diabetes mellitus (DM) are well-known independent risk factors for mortality. The evidence of their combined effects on mortality is unclear, but of importance because it may determine aggressiveness of treatment. This study sought to assess and quantify the effect modification of diabetes on renal impairment in its association with mortality.

MATERIALS AND METHODS:

Patients with cardiovascular disease or at high risk, recruited in the Second Manifestations of ARterial disease cohort study, were selected. A total of 7135 patients were enrolled with 33 198 person-years of follow-up. Renal impairment was defined by albuminuria status and estimated glomerular filtration rate (eGFR). Outcome was all-cause mortality.

RESULTS:

Mortality increased progressively with each stage of renal impairment, for both albuminuria status and eGFR, for diabetics and non-diabetics. There was no effect modification by diabetes on mortality risk due to renal impairment. The relative excess risk due to interaction (RERI) for DM and microalbuminuria was 0.21 (-0.11, 0.52), for overt proteinuria -1.12 (-2.83, 0.59) and for end-stage renal failure (ESRF) 0.32 (-3.65, 4.29). The RERI for DM with eGFR of 60-89 mL/min/1.73 m² was -0.31(-0.92, 0.32), for eGFR of 30-59 mL/min/1.73 m² -0.07 (-0.76, 0.62) and for eGFR of < 30 mL/min/1.73 m² 0.38 (-0.85, 1.61).

CONCLUSIONS:

Type 2 diabetes mellitus does not modify nor increase the risk relation between all-cause mortality and renal impairment. These findings suggest that the hallmark for survival is the prevention and delay in progression of renal impairment in patients with cardiovascular disease.

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