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Abstract Preview

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Background: We aimed to assess reliably the effect of self-reported diabetes (DM) on vascular and non-vascular mortality, using individual data from 44 prospective observational studies. Methods: Information was obtained on 690,700 adults with no previous vascular disease recorded at baseline. We assessed the age and sex-specific associations of DM with cause-specific mortality using Cox proportional-hazard regressions adjusted for cohort, age at risk, smoking, body mass index (BMI), total cholesterol (TC), and systolic blood pressure (SBP). The shape and strength of the associations between conventional vascular risk factors (BMI, TC and SBP) and ischaemic heart disease (IHD) were compared between people with and without diabetes after correction for regression dilution. Survival curves were estimated based on these hazard ratios and standardised age and sex-specific WHO mortality rates in the UK in 2010. Results: During 13 million person-years of follow-up there were about 27,000 vascular deaths and 28,000 non-vascular deaths between ages 35-89. Overall, diabetes was associated with a doubling in risk of IHD mortality in old age (HR 2.1; 95%CI 1.9-2.3) and among men (2.2; 2.0-2.3) and a tripling in risk in early middle age (2.9; 2.5-3.3) and among women (3.2; 2.9-3.6). Consequently, the association was most extreme in women in early middle age (6.0; 4.3-8.3). Diabetes was also associated with mortality from other (non-ischaemic) heart diseases, stroke, cirrhosis, renal disease, and cancer of the mouth, liver and pancreas (all p<0.05). The relative risks of IHD associated with a given change in BMI and TC were similar among people with and without diabetes (both p>0.5), whereas the association with SBP was somewhat stronger among those without diabetes (p for interaction<0.001). However, because people with diabetes are at higher risk of IHD, the absolute risks associated with all these conventional risk factors were considerably greater among those with diabetes. Diabetes was associated with reduced median survival of about 7 years in men and 10 years in women. Conclusions: Overall, diabetes was associated with more than a 2-fold increased risk of IHD mortality, but with more extreme relative risks in women and in early middle age, leading to reduced median survival of up to 10 years. Control of blood pressure, cholesterol and obesity are particularly important to reduce this premature mortality among people with diabetes.

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