EP10.06

Glycaemic control during six years after the diagnosis of type 2 diabetes and morbidity and mortality during 13 years thereafter

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Background and Aim: Hyperglycaemia increases the risk of mortality and morbidity. The benefit of pursuing intensive glucose control in all patients, however, has been questioned, and a patient-centered approach in the management of hyperglycaemia has been proposed. The aim was therefore to analyze the association between the quality of glycaemic control (change in HbA1c) during 6 years of personal, structured diabetes care after the diagnosis of type 2 diabetes and the subsequent morbidity and mortality during 13 years.
Method: The participants in this cohort study are from the intervention group from the randomized controlled trial, Diabetes Care in General Practice (DCGP). HbA1c was measured yearly in the intervention group and during the intervention period a regression line was fitted through the HbA1c-measurements from year 1 to year 6 for each patient. From the regression line, glycaemic control was characterized by i) the estimated level of HbA1c one year after diabetes diagnosis and ii) the slope of the regression line. Outcomes were assessed from Danish registries, and included mortality and diabetes-related morbidity year 6 to 19 after the diagnosis of diabetes. The association between change in HbA1c (the slope of the regression line) and clinical outcomes was assessed in Cox regression models.
Results: Data were from 494 participants. Mean age was 69.1 years, 49.4% were men. Poor glycaemic control during the first 6 years after diagnosis increased the risk of both microvascular complications, HR (for 1 percentage point yearly increase in HbA1c in the intervention period)=3.77 95%CI (1.64-8.67) and peripheral vascular disease, HR=3.67 (1.02-13.24).
Conclusions: Lack of glycaemic control during 6 years of intervention increased the risk of microvascular complications and peripheral vascular disease in patients newly diagnosed with type 2 diabetes, but not the risk of death or other macrovascular complications during 13 years of follow-up.