

 HYPERTENSION

Blood-pressure lowering in type 2 diabetes

In patients with type 2 diabetes mellitus and no history of cardiovascular disease, lowering blood pressure beyond levels currently recommended in clinical guidelines might be associated with reduced risk of cardiovascular disease. This finding comes from a study of 187,106 patients in the Swedish national diabetes registry, now published in the *British Medical Journal*.

The latest guidelines from several major hypertension societies have revised the recommended target for systolic blood pressure in patients with type 2 diabetes from <130 mmHg to <140 mmHg, on the basis that data supporting the lower target are limited, and some observational studies have suggested that low blood pressures might be associated with increased cardiovascular risk (a J-shaped relationship). Samuel Adamsson Eryd and Staffan Björck were “surprised by the new recommendations to accept higher blood pressure levels in patients with diabetes. We noted that the new recommendations were to a great extent based on findings from observational data which could be flawed by uncontrolled confounding. In other words, concomitant disease may lead to both low blood pressure and increased risk.”

Accordingly, Adamsson Eryd, Björck, and colleagues conducted an analysis of the Swedish national diabetes register, containing data from 861 Swedish hospitals and primary care units. Patients with type 2 diabetes for ≥ 1 year, who were aged ≤ 75 years, and had no previous cardiovascular or other major disease were included. Patients with the lowest systolic blood pressure (110–119 mmHg; $n = 12,829$) had a significantly lower risk of nonfatal acute myocardial infarction (adjusted HR 0.76, 95% CI 0.64–0.91, $P = 0.003$), total acute myocardial infarction (adjusted HR 0.85, 95% CI 0.72–0.99, $P = 0.04$), nonfatal cardiovascular disease (adjusted HR 0.82, 95% CI 0.72–0.93, $P = 0.002$), total cardiovascular disease (adjusted HR 0.88, 95% CI 0.79–0.99, $P = 0.04$), and nonfatal coronary heart disease (adjusted HR 0.88, 95% CI 0.78–0.99, $P = 0.03$) compared with the reference group of patients (systolic blood pressure 130–139 mmHg; $n = 49,518$).

Conversely, patients with the lowest blood pressure had an increased risk of heart failure (adjusted HR 1.20, 95% CI 1.01–1.42, $P = 0.04$) and all-cause mortality (adjusted HR 1.28, 95% CI 1.15–1.42, $P < 0.001$) compared with the reference group. No J-shaped relationship was observed in the risk of nonfatal stroke, total stroke, or total coronary heart disease. The investigators are cautious about drawing conclusions about treatment from their paper, but their belief is that “the current recommendations for blood pressure targets in diabetes should be lowered”. They also suggest that “the association between low blood pressure and increased mortality could be due to concomitant disease rather than antihypertensive treatment”.

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ORIGINAL ARTICLE Adamsson Eryd, S. *et al.* Blood pressure and complications in individuals with type 2 diabetes and no previous cardiovascular disease: national population based cohort study. *BMJ* 354, i4070 (2016)