Cardio DIGEST
The easy way to stay up to date with developments in cardiovascular care

Editorial

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Metformin and heart failure in type 2 diabetes

For people with type 2 diabetes and coexistent chronic heart failure (CHF), oral antidiabetes agent options are limited. Yet, the use of oral antidiabetes agents to treat insulin resistance, in keeping with pathophysiological processes in this patient group, would seem to be appropriate. The use of metformin by people with type 2 diabetes and CHF has previously been avoided due to the possible increased risk of lactic acidosis – this is regardless of clinical experience and earlier literature suggesting that this risk is low and similar to that of other antidiabetes drugs (Scale and Harvey, 2011). Indeed other observational data suggest that metformin may actually be beneficial in CHF. On these grounds it is has been proposed by several groups (Holstein and Stumvoll, 2005; Inzucchi, 2005; McCormack et al, 2005) that metformin should not be contraindicated for people with type 2 diabetes and CHF.

Two more recent studies suggest a reduction in mortality among people with CHF and type 2 diabetes who received metformin. In the first, retrospective (1994–2003) data from the DARTS information system in Tayside in Scotland on people type 2 diabetes and incident CHF were collected (Evans et al, 2010). All-cause mortality rates for those prescribed metformin, compared with those receiving a sulphonylurea, with adjustments for comorbidities, were calculated. Fewer deaths occurred in the group receiving metformin alone, or in combination with sulphonylureas, compared with sulphonylurea monotherapy at 1 year (odds ratio [OR], 0.59; 95% confidence interval [CI], 0.36–0.96). Long-term follow-up confirmed this finding (OR, 0.67; 95% CI, 0.51–0.88).

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All-cause mortality associated with individual blood glucose-lowering treatments currently in use were also evaluated in a study from Denmark (Andersson et al, 2010). People (aged >30 years) hospitalised for the first time for heart failure between 1997 and 2006 were identified and followed-up until the end of 2006. A total of 10 920 people were included in this analysis, with a median observation time of 844 days. Using sulphonylurea monotherapy as a reference, adjusted hazard ratios for all-cause mortality associated with the different treatment groups were: metformin, 0.85 (95% CI, 0.75–0.98; P=0.02); metformin plus a sulphonylurea, 0.89 (95% CI, 0.82–0.96; P=0.003); metformin plus insulin, 0.96 (95% CI, 0.82–1.13; P=0.6); metformin plus insulin plus a sulphonylurea, 0.94 (95% CI, 0.77–1.15; P=0.5); a sulphonylurea plus insulin, 0.97 (95% CI, 0.86–1.08; P=0.5); and insulin alone, 1.14 (95% CI, 1.06–1.20; P=0.0001).

These studies suggest a reduction in mortality among people with type 2 diabetes with coincident CHF treated with metformin. Perhaps it is now time for us to alter our clinical practice in light of these findings.

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