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## GLYCEMIC CONTROL AND HEART FAILURE IN ADULTS WITH DIABETES

**The incidence of congestive heart failure is increasing rapidly, particularly in people with type 2 diabetes. The prevention of, early screening for, and appropriate treatment of heart failure are currently key elements of the management of these patients. The study conducted by Iribarren et al<sup>1</sup> in a large population sheds some new and interesting light on this problem.**

A total of 25958 male and 22900 female patients with diabetes on the register of the Kaiser Permanent Medical Care Program of Northern California were studied for a median period of 2.2 years. At recruitment, they had an average age of 58 and no history or clinical symptoms of congestive heart failure. During the follow-up period, 935 episodes of heart failure were recorded in total (516 in men, 419 in women), the vast majority of which required admission to hospital.

After adjustment for age, sex, ethnic origin, social status, smoking, alcohol consumption, obesity, use of beta-blockers/ACE inhibitors, and history of myocardial infarction, each increase of 1% in the HbA<sub>1c</sub> value was associated with an 8% increase in the risk of heart failure (95%, CI 5%-12%). An HbA<sub>1c</sub> value of  $\geq 10\%$  (found in 22% of men and women) was associated with an increase in risk of 1.56-fold (95%, CI 1.26-1.93) compared with an HbA<sub>1c</sub> value of  $< 7\%$ . The association was stronger in men, although an increase in the risk of heart failure as a function of HbA<sub>1c</sub> values was observed in both sexes along a smooth gradient, with no clearly identifiable threshold value.

These results confirm those recently published by the UKPDS group<sup>2</sup> and suggest that chronic hyperglycemia is a risk factor for heart failure, in keeping with diabetic cardiomyopathy and/or the development of more or less silent ischemic heart disease. Another explanation put forward by the authors was that a raised HbA<sub>1c</sub> value might be an indicator of poor compliance both with antidiabetic treatment and antihypertensive or lipid-lowering treatment.

**Whatever the case, the very high frequency of episodes of severe heart failure observed over a relatively short follow-up period should prompt all doctors treating patients with diabetes to seek to prevent heart failure by aggressive monitoring of serum glucose levels, arterial blood pressure, and lipid disorders. In patients with clinical heart failure, a salt-free diet and treatment with diuretics, vasodilatory beta-blockers, and ACE inhibitors have proven effective in reducing the very high mortality that affects these patients. As for the best methods of screening for latent or early heart failure, they have still to be defined for patients with diabetes.**

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**References:** 1. Iribarren C et al. *Circulation*. 2001;103:2668-2673. 2. Stratton IM et al. *BMJ*. 2000;321:405-412.