dystrophy (BMD)—can lead to congestive heart failure or premature death.

Jefferies *et al.* have investigated whether early diagnosis and treatment of dilated cardiomyopathy can lead to ventricular remodeling in boys with DMD and BMD. They also assessed whether specific mutations in the dystrophin gene can predict cardiac involvement in muscular dystrophy.

A total of 69 patients with muscular dystrophy (62 with DMD; 7 with BMD) were included in the study. Cardiac function was assessed using echocardiography, with annual follow-ups. If left ventricular dysfunction was detected, patients were treated with angiotensin-converting-enzyme inhibitors and underwent echocardiography every 3 months. β-blockers were added to patients' therapy regimens if their ventricular function did not improve.

A complete set of echocardiographic data was collected for 29 patients. These data showed that early diagnosis and treatment of dilated cardiomyopathy led to improved left ventricular systolic function; partial or complete left ventricular remodeling occurred in most cases.

DNA analysis of the dystrophin gene in 47 individuals revealed a link between dilated cardiomyopathy and mutations in exon 12 and exons 14–17, and a possible association between onset of dilated cardiomyopathy and specific mutations in exons 31–42. By contrast, mutations in exons 51 and 52 seemed to protect against cardiac defects in DMD. Potential predictive or cardioprotective effects of specific mutations in the dystrophin gene warrant further investigation.

Claire Braybrook

Original article Jefferies JL *et al.* (2005) Genetic predictors and remodeling of dilated cardiomyopathy in muscular dystrophy. *Circulation* **112:** 2799–2804

Increased risk of stroke associated with hyperglycemia

Increased levels of glycated hemoglobin (Hb A_{1c}) are an indicator of long-term hyperglycemia, which has been implicated in the development of cardiovascular disease. Diabetics have an increased risk of experiencing stroke, but it is not clear whether hyperglycemia contributes to this risk. Selvin *et al.* examined the effect of Hb A_{1c} levels on the relative risk of stroke in people with and without diabetes, and found that higher levels increased the risk in both groups.

The relationship between Hb A_{1c} concentration and incident ischemic stroke was assessed for 10,886 nondiabetic and 1,635 diabetic participants in the Atherosclerosis Risk in Communities (ARIC) study, with an 8–10 year follow-up. Participants in both groups were analyzed in tertiles based on their Hb A_{1c} concentration. Those found to be most at risk were diabetics with high Hb A_{1c} levels, who were more than four times more likely to suffer stroke than nondiabetics with the lowest blood glucose levels. For nondiabetics, strokes were approximately 1.5 times more likely in participants with high Hb A_{1c} levels than in those with low levels. No clear separation was found between risk for those in the lowest diabetic category and those in the highest nondiabetic category, suggesting that the risk relates more to blood glucose levels than to diabetes itself.

The authors conclude that hyperglycemia could be an independent risk factor for cerebrovascular events in both diabetics and nondiabetics, and that the relationship between Hb A_{1c} and ischemic stroke is similar to that previously reported for cardiovascular disease.

Jim Casey

Original article Selvin E *et al.* (2005) Glycaemia (haemoglobin A_{1c}) and incident ischaemic stroke: the Atherosclerosis Risk in Communities (ARIC) study. *Lancet Neurol* **4:** 821–826