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Improving risk of coronary artery disease? Certainly in the USA

“... recent improvements in the major risk factors for coronary artery disease ... have resulted in parallel reduction in coronary heart disease risk in adults with diabetes in the USA.”

Cardiovascular disease (CVD) remains a major cause of death in diabetes. Consequently, controlling the risk factors for CVD is a priority in the management of diabetes. In the recent era, management of glycaemia and cholesterol levels and improvement in blood pressure control, together with smoking cessation, have been a focus for people with diabetes. The impact of these interventions, however, has been poorly studied.

In a recent article evaluating findings from the National Health and Nutrition Examination Survey (NHANES) 1999–2008, there is a clear demonstration of improvement on the 10-year risk for coronary heart disease (CHD) among adults with diabetes over the period of 1999–2000 compared with 2007–2008 (Ford, 2011). Using the UKPDS (UK Prospective Diabetes Study) risk engine, the 10-year estimated risk for developing CHD in adults with diabetes was 22% lower by 2007–2008 compared with 1999–2000. This estimated risk of CHD appeared to have decreased significantly among men, women, Caucasians, African-Americans and also Mexican Americans. Analysis suggests that improvements in HbA_{1c} level, systolic blood pressure and the ratio of total to HDL-cholesterol mostly accounted for the decrease in risk (Ford, 2011). Thus, in this study, using the estimated UKPDS risks, risk between 2007 and 2008 was 43% lower among African-Americans, 22% lower among Mexican Americans and 20% lower in the Caucasians compared with 1999–2000.

Other studies based in the USA have demonstrated improved treatment for hypercholesterolaemia and hypertension (Egan et al, 2010; Ford et al, 2010). The changes in these risk factors, as well as the actual risk, would suggest implications for evolving life-expectancy (Hoerger et al, 2009).

There has of course been controversy in recent years concerning the effect of glycaemic control on all-cause mortality (Skyler et al, 2009). Meta-analyses, however, do demonstrate a benefit on mortality with improved glycaemic control (Ray et al, 2009). Further reduction of cholesterol and hypertension would suggest further reductions in cardiovascular outcomes to come. Consequently these data would reinforce the need for comprehensive management of major cardiovascular risk factors.

Therefore, it would appear that recent improvements in the major risk factors for coronary artery disease, such as HbA_{1c}, systolic blood pressure, and the ratio of total cholesterol to HDL-cholesterol, have resulted in parallel reduction in CHD risk in adults with diabetes in the USA. Data from the recent study would suggest that there are likely to be further potential benefits with risk reduction in the future.

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Hoerger TJ, Zhang P, Segel JE et al (2009) Improvements in risk factor control among persons with diabetes in the United States: evidence and implications for remaining life expectancy. *Diabetes Res Clin Pract* **86**: 225–32

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