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Retinopathy and coronary heart disease risk

Considerable data from previous studies have suggested an association of retinopathy with coronary heart disease (CHD) in people with type 2 diabetes (Miettinen et al, 1996; van Hecke et al, 2005; Juutilainen et al, 2007). Indeed, European studies would suggest increased CHD risk among individuals with diabetes and retinopathy, while controlling for other traditional cardiovascular risk factors. Some of the studies do suggest that the increased CHD risk with diabetic retinopathy may be due to shared risk factors (van Hecke et al, 2005). Additionally, some studies have suggested a female preponderance of this risk (Juutilainen et al, 2007).

It has also been demonstrated previously that people with retinopathy are more likely to have myocardial perfusion defects (Ioannidis et al, 2004). In addition, such individuals may demonstrate poor coronary flow reserve (Akasaka et al, 1997) and reduced coronary collateral supply (Celik et al, 2005). Diabetic retinopathy has been demonstrated to be associated with high degrees of coronary calcification (Yoshida et al, 1999) and more severe coronary artery stenosis on angiograms (Norgaz et al, 2005).

More recent data are available from the Atherosclerosis Risk In Community Study (ARIC; Cheung et al, 2007). A population-based prospective cohort study consisting of 1500 people with type 2 diabetes without prevalent CHD and stroke at baseline, studied in relation to diabetic retinopathy status (as assessed according to the Early Treatment for Diabetic Retinopathy study severity scale). After an average follow up of 7.8 years, the presence of diabetic retinopathy was associated with a two-fold higher risk of incidence in CHD events and a three-fold higher risk of fatal CHD events. These relationships were observed after controlling for baseline demography, calibre of glycaemic control and traditional risk factors. The data demonstrated an increase in CHD risk in both men and women.

Such data provide further evidence for the use of retinopathy as a 'traditional' risk factor for CHD in people with diabetes. The evidence suggests that individuals with diabetic retinopathy may warrant a more careful cardiovascular assessment, intervention and follow up.

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