Editorial

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Moving the microscope – preventing heart disease in type 1 diabetes

Since the publication of the Diabetes Control and Complications Trial (DCCT, 1993), management of type 1 diabetes has focused on greater use of intensive insulin therapy, including complicated and individualised insulin regimens, novel technologies such as insulin pumps and glucose sensors, with emphasis on insulin dose adjustments according to meals, exercise, etc. While important and laudable, those involved in delivering diabetes care may have lost a little of the plot!

The diagnosis of type 1 diabetes carries a dramatic risk of a shortened life span (Krolewski et al, 1987). Although a proportion of deaths are a consequence of renal failure, recent data from a follow-up of the Oslo study have highlighted the importance of premature cardiovascular disease occurring in people who develop diabetes as children or young adults (Larsen et al, 2002). Improvements in technology now allow us to closely examine the coronary arteries of young people with type 1 diabetes and are demonstrating the presence of early coronary artery calcification (Starkman et al, 2003). Calcification within the coronary arteries appears to predict future coronary events and has therefore been suggested as a screening tool. However, its predictive value in people with diabetes is controversial (Budoff, 2003; Detrano, 2003). The reasons for this are unclear, but it may be due to differences in amounts of stable versus unstable plaques as a consequence of the disease process related to diabetes.

At the recent meeting of Diabetes UK, the suggestion was made that young people with type 1 diabetes should be prescribed drugs such as statins, which have been shown to reduce the risk of coronary events in other populations. The argument is that this is good medicine based on published evidence, albeit requiring fundamental assumptions that results from clinical trials, with their lists of inclusion and exclusion criteria, are applicable across the board. It is particularly important to note that prescription of 'preventive' medicines to people with type 1 diabetes would involve years of exposure to agents with unknown consequences, as most clinical trials are of shorter duration than a lifetime of diabetes.

Caution needs to be applied. New methods for detection of macrovascular disease must be validated and the applicability and implications of the results investigated by proper randomised controlled trials in relevant populations. Patients should be advised of the potential risks as well as benefits of tests and treatments. Even more importantly, the individual's attitude to his/her illness needs to be assessed, i.e. we should establish whether or not an idividual will actually swallow the pills (Trewby et al, 2002).

Clearly something must be done to reduce the burden for people with type 1 diabetes. Nowadays, being an insulin therapist is difficult enough, and adding this extra dimension will undoubtedly complicate matters. On a positive note, due to the increasing complexity of type 1 diabetes the hospital-based diabetes specialist is far from becoming an extinct species!

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Budoff MJ (2003) Point: Diabetic patients and coronary calcium: risk stratification, compliance, and plaque progression. *Diabetes Care* **26**: 541–2

Detrano R (2003) Counterpoint: Do people with diabetes benefit from coronary calcium scans? *Diabetes Care* **26**: 543–4

Krolewski AS, Kosinski EJ, Warram JH et al (1987) Magnitude and determinants of coronary artery disease in juvenile-onset, insulin-dependent diabetes mellitus. *American Journal of Cardiology* **59**: 750–5

Larsen J, Brekke M, Sandvik L et al (2002) Silent coronary atheromatosis in type 1 diabetic patients and its relation to long-term glycemic control. *Diabetes* **51**: 2637–41

Starkman HS, Cable G, Hala V, Hecht H, Donnelly CM (2003) Delineation of prevalence and risk factors for early coronary artery disease by electron beam computed tomography in young adults with type 1 diabetes. *Diabetes Care* **26**: 433–6The Diabetes Control and Complications Trial (DCCT) Research Group (1993) The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *New England Journal of Medicine* **30**: 977–86

Trewby PN, Reddy AV, Trewby CS et al (2002) Are preventive drugs preventive enough? A study of patients' expectation of benefit from preventive drugs. *Clinical Medicine* **2**: 527–33