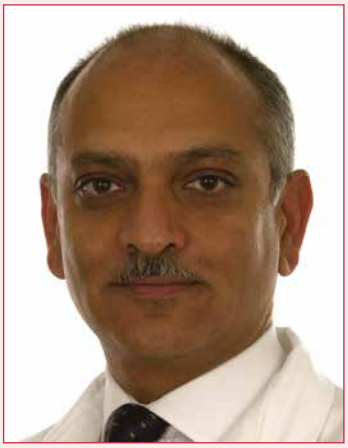
Data from the DPPOS: A clear association between prevention of diabetes and reduction in cardiovascular risk?



Jiten Vora
CardioDigest Editor

Previous diabetes prevention trials have generally enrolled participants with "prediabetes" in an attempt to evaluate the effect of interventions on the high conversion rate from prediabetes to diabetes. Consequently, interventions are deemed to be successful if the progression to diabetes has been reduced or delayed. During such trials, however, many participants remain in the "prediabetes" state. Thus, while the Diabetes Prevention Program Outcome Study (DPPOS) has demonstrated a 56% lower risk of diabetes 10 years on from randomisation (Perreault et al, 2012) among individuals who are able to achieve normal glucose regulation, compared to those who remain in a prediabetes stage, the question remains whether this return to normal glucose tolerance results in a reduction of macrovascular and microvascular risk factors.

Now from the DPPOS data, there has been the opportunity to examine long-term cardiovascular risk profiles of people who have regressed from prediabetes and achieved normal glucose tolerance, and to compare their profiles with those who have remained in the prediabetes state or, indeed, those who went on to develop type 2 diabetes during the study period.

The analysis of such data, summarised in this edition of *Cardio Digest* (page 51), utilised the Framingham score to estimate the global 10-year cardiovascular risk and also evaluated individual cardiovascular risk factors annually in the DPPOS over the 10 years of study (Perreault et al, 2014). Analysis was conducted for each of the three sub-groups of participants (those who returned to normal glucose regulation, those who remained in the prediabetes stage and those who developed diabetes).

The authors found that the Framingham scores of glycaemic exposure did not differ among the treatment groups. The 10-year cardiovascular risk scores were 14.4% in people with diabetes, 15.5% in those who returned to normal glucose regulation and 16.2% in those who remained in the prediabetes range. The lower cardiovascular risk among individuals who developed diabetes was ascribed to increased medication use for lipids and blood pressure.

This study essentially demonstrates that restoration of normal glucose regulation can significantly reduce the estimated cardiovascular risk in individuals with prediabetes. Thus, the care and management of individuals with prediabetes should be concentrated on a return to normal glucose regulation. It is worth noting that those who achieved normal glucose tolerance had a significant long-term reduction in the development of diabetes, compared to those who remained in the prediabetes state. Furthermore, the current analysis suggests that regression from prediabetes to normal glucose regulation not only reduces of risk of diabetes but also reduces the risk of cardiovascular disease. Indeed, the STOP-NIDDM trial has also demonstrated a 49% reduction in cardiovascular events among people with prediabetes who were randomised to receive acarbose therapy (Chiasson et al, 2003); further evidence for the importance of good glycaemic control on cardiovascular risk. ■

Chiasson JL, Josse RG, Gomis R et al (2003) *JAMA* **290**: 486–94

Perreault L, Pan Q, Mather KJ et al (2012) *Lancet* **379**: 2243–51

Perreault L, Temprosa M, Mather KJ et al (2014) *Diabetes Care* **37**: 2622–31

Jiten Vora

Professor Jiten Vora has been the Editor of *Cardio Digest* for over a decade. To mark this, his final editorial, Dr David Kerr and the Publisher would like to thank Jiten for his tremendous contribution to the continuing success of *Diabetes Digest* and his expertise in helping to disseminate the latest research knowledge to a wide range of individuals and organisations involved in diabetes care over the years. We wish him well in his new endeavours.

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