

# Do Glucose-Related Interventions Reduce CV Outcomes?



This department covers selected points from the 2009 Endocrine Update: A CME Day from the Division of Endocrinology and Metabolism at McMaster University and the University of Western Ontario.  
Program Chairs: Aliya Khan, MD, FRCPC, FACP, FACE and Terri Paul, MD, MSc, FRCPC




Faizan Amin, BHSc; and Bonnie Lee

Diabetes is a strong and independent risk factor for CVD.<sup>1</sup> To examine this association more extensively, researchers have studied other aspects of diabetes with relation to CVD. Many studies have looked at how glycemia as measured by the A1c level relates to CVD. Most of these observational studies concluded that a rise in A1c correlates well with an increase in a risk of CVD<sup>2,3</sup> and that this relationship is independent of the presence or absence of diabetes. Other researchers have focused on fasting and postprandial glucose levels and have shown that higher levels are associated with a higher incidence of CVD regardless of whether or not diabetes is present.<sup>4,5</sup>

These findings are not enough to conclude that the elimination of these risk factors can counteract or prevent CVD. Thus, interventional research needs to be performed. Randomized trials have shown that intensive glucose-lowering treatment with insulin and with either

insulin or sulfonylureas reduce CVD and mortality in people with Type 1<sup>6</sup> and Type 2 diabetes respectively.<sup>7</sup> The Action to Control Cardiovascular Risk in Diabetes (ACCORD) study compared a therapy targeting A1c < 6% vs. a strategy that targets A1c levels of 7% to 7.9%. The results were conflicting as there were no clear signs of CVD benefits after three and a half years and the more intensive treatment actually had a higher risk of mortality despite a lower risk of MI.<sup>8</sup> Other trials looking at targeting different A1c goals have shown trends towards fewer CV events but are generally non-conclusive.<sup>9,10</sup>

Although observational studies show a clear link between glucose levels and CVD, interventional studies do not clearly show that lowering glucose can prevent CVD. Thus, the benefits and harms of therapies preventing A1c rise or diabetes still remain unknown. To determine their true effects, several ongoing studies are now underway to test various novel strategies and their relationship to CVD. 

**Mr. Amin** is an MD candidate at the Michael G. DeGroot School of Medicine, McMaster University, Hamilton, Ontario.

**Ms. Lee** is a Bachelor of Health Sciences Student, McMaster University, Hamilton, Ontario.

Acknowledgement: We would like to express our thanks to Dr. Hertzler Gerstein for an informative presentation and discussion which helped us develop the ideas put forward here.

For references, please contact [diagnosis@sta.ca](mailto:diagnosis@sta.ca)