

Happy birthday to us! Today marks the one year anniversary of Dr. Eric L. Johnson's column which runs every other Friday. We've never looked better. Thanks, Eric!



***Sept. 18-19, 2008: Annual Diabetes Summit
Save those dates! Plan to come! Be there!***



Dr. Eric Johnson is a Grand Forks family practice doctor with keen insight into diabetes. A member of the Dakota Diabetes Coalition, Eric is happy to answer questions through our list serv. Simply hit reply and he -- and more than a hundred other people -- will get your remarks.

If you want Gail Hand to discretely send your comments or questions for Dr. Johnson, please email me at gailhand@q.com Or call 701.746.4921

Visit the Coalition's website!
<http://www.ndhealth.gov/diabetescoalition/>

Diabetes studies in the news

Does A1C still matter?

San Francisco, Calif. -- Cardiovascular disease grabbed headlines at the recent American Diabetes Association meeting—and beyond.

Two studies involving cardiovascular outcomes were simultaneously published June 12, 2008 in the *New England Journal of Medicine*. As we discussed in a previous column, the ACCORD, *The Action to Control Cardiovascular Risk in Diabetes Study Group*, **study was halted earlier this year because the group treated to A1C < 6%, had a higher overall cardiovascular mortality rate** compared to a group managed conventionally.

The ADVANCE study, Action in Diabetes and Vascular Disease: Preterax and Diamicron Modified Release Controlled Evaluation, done at centers in Asia, Australia, Europe, and North America showed no benefit in terms of cardiovascular outcomes with treatment to an A1C $\leq 6.5\%$. The Veterans Administration Diabetes Trial, a smaller study, was presented at ADA eight days after the annual meeting. It also showed that **intensive lowering of A1C had no significant impact on cardiovascular outcomes**. So what is to be made of this recent data from these random controlled trials? Isn't A1C helpful in the management of diabetes?

The answer, simply put, is that yes, A1C still matters. These studies, although very important, are well-designed trials that **only** looked at the relationship between lowering A1C and cardiovascular outcomes -- primarily heart disease and stroke.

A1C linked to other complications

It is well established that lower A1C's are associated with lower rates of other potential diabetes complications, such as retinopathy (eye disease), nephropathy (kidney disease), and neuropathy (nerve disease). Previous large studies with both type 1 and type 2 diabetes patients have shown this relationship, most notably the Diabetes Complications and Control Trial, 1993 in type 1 patients, and United Kingdom Prospective Diabetes Study, 1998, in type 2 patients. ADVANCE also showed a 21% reduction in nephropathy in the intensively-managed group.

ACCORD and ADVANCE differed in a few respects. Most notably, **blood pressure and lipids were not optimally controlled** in ADVANCE, whereas this is an ongoing feature in the ACCORD study. Many more patients in ACCORD were on TZD drugs, most often rosiglitazone (Avandia), for which there is some data that suggests worse cardiovascular outcomes. Finally, these **studies ran for 5 years or less**; it's possible this may not be long enough to capture cardiovascular events, although some patients with established cardiovascular disease were included. It's important to note that ADA has never issued a statement regarding A1C lowering and CVD risk.

Some older data related glucose variability or elevated post-prandial glucose levels to poor cardiovascular outcomes. Take into account that these were

not necessarily in patients with known diabetes and some data were collected in a hospital setting. The 2000 Verona study showed a relationship between **cardiovascular mortality and fasting glucose variability over 10 years, but not in overall new events.**

The best conclusion to draw from these newest studies is that **diabetes is a multi-factorial disease process, and all components warrant the best management possible.** Just controlling the A1C is no panacea. None of the data conflicts with the current American Diabetes Association guideline of a target A1C of <7%, and plenty of evidence exists for aggressively managing blood pressure and lipids in these high-risk patients.

Remember, cardiovascular disease will still account for about two thirds of deaths in type 2 diabetes, and is likely very significant in type 1 adults as well.

At a glance

Different factors and related outcomes

A1C: More associated with microvascular processes: retinopathy, nephropathy, neuropathy, less association with macrovascular outcomes (cardiovascular disease)

Glucose variability and post-prandial glucose elevations: Possibly more associated with macrovascular (cardiovascular) outcomes

Blood Pressure: More associated with macrovascular (cardiovascular) outcomes and nephropathy, some association with retinopathy

Lipids (Cholesterol): More associated with macrovascular, some possible association with microvascular issues.