

Windy City Whispers
67th Scientific Sessions American Diabetes Association
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Miscellania

Now we come to a section I call miscellany because I can't think of any overriding connection between them. It is a potpourri of interesting topics with no central theme. First there is an interesting report from William Clarke's group from Charlottesville, Virginia on the Diabetes Driving Safety Training. They noted that diabetics are seriously over-represented in crashes. In a survey of 1036 patients, 22% noted that they have driven when hypoglycemic within the last six months (0% of their spouses reported the same, of course). Eighteen percent reported being in a stupor while driving (spouses 0%) and 19% reported being in an automobile accident (spouse 8%). They followed 515 Type I diabetics for 12 months and 178 of them had 2 or more episodes of moderate hypoglycemia while driving. They felt that the chronic risk factors for diabetic drivers are a history of hypoglycemia leading to collisions, a history of severe hypoglycemia, a history of mild hypoglycemia while driving and a lower blood glucose threshold when driving. During three training sessions, they tried to emphasize the ways to reduce risky driving, ways to prevent hypoglycemia while driving and better ways of detection and treatment of hypoglycemia while driving. They found that the patients 1) raised their blood glucose threshold for both treating low blood glucose levels and for when not to drive, 2) began driving less often when the blood glucose level was between 70-90 mg/dL, 3) drove less frequently when blood glucose was less than 70 mg/dL, 4) experienced less mild hypoglycemia while driving and 5) reported taking fewer general risks. The patients significantly reduced the occurrence of monthly severe to moderate hypoglycemia and hypoglycemia-related driving mishaps. *I hope this kind of research continues. I have been deadly afraid of our patients driving for years (particularly around me) and I would like to see a simple viable program that could make things safer for them. Hopefully in time there will be such a program that each clinic can use.* An interesting but confusing study came from the United Kingdom looking at the variability and the relationship between mean plasma glucose and Hgb A1c. They did seven point glucose profiles (before meals, after meals, and at bedtime) and compared them to quarterly Hgb A1c levels. They looked at intensively treated patients and compared them with conventionally treated patients. They found that conventionally treated patients had consistently higher mean plasma glucose concentrations than intensively treated subjects at any Hgb A1c value. Similarly, at the same Hgb A1c level, the mean plasma glucose level of intensively treated subjects at the beginning of the study was higher than in the same individuals following six months of intensive treatment. Thus, the relationship between mean plasma glucose and Hgb A1c is not constant but differs depending on the glycemic control of the population being studied. *I am not quite sure what to make of this study. In my mind, the problem may lie in the fact that they have not taken into account the black hole that exists between bedtime and breakfast. That is roughly 33% of the day that is un-tested and thus unaccounted for. It may well be that equal Hgb A1c levels in two different patients means significantly different overall control. I have a hunch we will be able to understand this phenomenon much better when we start using continuous glucose monitoring over extended periods and compare Hgb A1c values.*

Another variable was brought up by a study from Cincinnati. They looked at the red blood cell survival in hematologically normal people with diabetes. They found that the mean circulating red cell ages ranged from 40-52 days in diabetics and between 38-49 days in non-diabetics. This meant that the red blood cell life span ranged from 77-104 days. They felt that there is sufficient variation in red cell life span among hematologically normal people with diabetes to contribute clinical decision altering differences to Hgb A1c. *Just another variable that makes the Hgb A1c value less absolute than we might like to think it is.* There was an interesting study from the Barbara Davis Center looking at the use of metformin in overweight patients with Type I diabetes. As you know, metformin is typically used for Type II diabetics and increases insulin sensitivity. These Colorado patients were overweight and were placed on metformin for one year. At three months there was a significant reduction in Hgb A1c (8.1% to 7.6%) and an insignificant reduction over the next nine months. There was a significant reduction in weight and the insulin requirements were likewise significantly reduced. They concluded that overweight patients with Type I diabetics initiated on metformin therapy had significant reductions in Hgb A1c, weight and insulin dose. *There can be a blending of Type I and Type II diabetes. Many of our Type I patients who are incapable of producing insulin can also have insulin insensitivity due to obesity. Some people refer to this as Type I½ diabetes and it seems to be a real phenomenon. That is why several of our patients in clinic are on metformin and some actually show definite improvement with its use.* A group from Boston reported on five cases of lipo-atrophy with the use of Humalog, NovoLog, NPH and Lantus. You old timers are well familiar with lipo-atrophy because we used to encounter it frequently with pure pork insulin and some of the Regular and NPH human insulin. It causes a depression in the area of the shot rather than the bulge that we see with lipo-hypertrophy. They did biopsies of these areas and found focal fibrosis and a variable degree of angiocentric and lobular lymphocytic panniculitis. They felt that the high number of recent cases of local lipo-atrophy suggest that local allergic reactions may be more prevalent with the insulin analogs. *We will need to watch for this a little more carefully since we really have not been concerned about it since we have moved to the new insulins. If any of you develop depressions like this please let us know.* Another group from Boston looked at Women's Health Education and Diabetes in women planning to become pregnant. They emphasized that to reduce the risk of miscarriages, complications of pregnancy and fetal abnormalities, women with diabetes need to plan pregnancies and achieve near normal glycemic control prior to conception. However, 58% of pregnancies among women with diabetes are unplanned. They did a 90-minute women's health class on clinical and psychosocial factors. They found that 61% of the women had Hgb A1c levels of greater than 6% (the goal for pregnancy is less than 6.5%). Fifty percent planned to have children in the near future. Two-thirds of the women were sexually active and 8% did not use birth control. After their intervention, the women scored higher on optimism, had better quality of life, less diabetes stress, less use of emotional-based coping and greater sense of self-mastery. Eighty percent reported being motivated to make changes to their diabetes care. Their conclusion was that women with diabetes who plan to have children in the near future need support in achieving and maintaining stringent glycemic targets. They felt that this program helped raise awareness of the need for near-normal glycemia prior to pregnancy. *I bring this study up only to emphasize the last point. We too have teenagers who have unplanned pregnancies. These pregnancies can be disastrous for the mother and for the child if the girl is not under tight diabetic control. We again plead with our teenagers never to have unprotected sex and to talk to us if there are any questions about contraception or thoughts of future pregnancy. Neither our patients nor we want any oops in the future.* There were many other interesting topics throughout the meetings

but I can only report on so many. This time I chose to pass on celiac disease, many of the psychosocial studies, many of the dietary presentations including the controversies about glycemic index (this will be a greater topic later on and I am sure our dieticians will be happy to share their thoughts now) and many aspects of management of Type II diabetes that is simply is not germane for the majority of our patients right now. I apologize if I did not cover a topic that you were particularly looking forward to seeing. I will be happy to talk with any of you if you have questions. I did have to keep this masterpiece at a presentable length and I'm afraid I have probably not accomplished that even now.

So there you have it. There was nothing new or dramatic at the meetings this year and I guess we should take some satisfaction in the fact that most of the things that were suggested have already been implemented in our clinic. Our clinic-wide Hgb A1c average is very comparable to most of the programs that reported at the meetings so I guess our patients should take some pride in their accomplishments. On the other hand, we are still not close to where we want to be. Coming away from the meetings, the major thought that stuck with me is that we need to remember that diabetes is a global disorder and we need to be helping those who are less fortunate than ourselves. We need to take a step back and be proud of what we have accomplished ourselves but also recognize that many people around us need our help and need our support and that we should be providing help and support for those less fortunate many miles away (and in our own communities). It was shocking to me to learn that children in sub-Saharan Africa have the same life expectancy as children in the United States who develop diabetes before the isolation of insulin by Drs. Banting and Best in 1922. Although we have accomplished a great deal in diabetes management over the past decades we still have a long way to go. I find it tremendously uplifting to see how far we have come and very sobering to see how far we still have to go.

