

Glucose Level Decline Preceding Dementia in Elderly African-Americans with Diabetes

Hello, this is Dr. Sonya Hardin, program director for the geriatric workforce enhancement program grant at East Carolina University. Podcasts are being developed for primary care providers with topics in neurology. Today, this short podcast is focused on glucose level decline preceding dementia in elderly African-Americans with diabetes. Today I want to talk about a project that was conducted in Indianapolis. It's the Indianapolis Ibadan Dementia Project, abbreviated as IIDP. It's a 20 year National Institute of Aging funded longitudinal study of dementia. It's focused primarily on risk factors in elderly community dwelling African-Americans living in the Indianapolis, Indiana area. It's focused on elderly community dwelling Yoruba living in Ibadan, Nigeria.

Recently data from the African-American participants in the study were merged with data from the Indiana Network for Patient Care, which is a regional health information exchange, and it allowed for them to examine longitudinal vascular risk factor profiles based on diagnostic testing obtained in the routine care of these older adults. They were able to analyze repeated serum glucose measurements and cognitive outcomes. Some of their findings include that there was a difference in glucose hemostasis, and we've seen that reported before with African-Americans, that there's a difference between African-Americans and the white populations. As we know, the rate of diabetes is much higher in the African-American population.

During their study they used repeated glucose measures obtained up to 18 years before the diagnosis of dementia and they found that participants with diabetes, those who developed dementia had higher glucose levels compared to those who developed mild cognitive impairment or those with a normal cognition. They also found that the participants with diabetes that developed dementia experienced a significant decline in glucose levels in the years before the dementia diagnosis was made, compared to participants with mild cognitive impairment [and 00:02:51] the normal participants.

It's important to realize that high blood glucose levels may be responsible for the increased risk for dementia in our diabetic patients. But perhaps one of the most striking findings of this study was that the highly significant decline in glucose levels that occurred in patients with diabetes in the years before the diagnosis of dementia. And why this is so important is that, there may actually be a very powerful association with presymptomatic metabolic indicator of dementia. So, as you begin to trend glucose levels over the years that you're providing care for your patients, you may want to look for this slight decline that we have seen occur with our African-American patients that have diabetes.

We do know that in the literature it has been reported that both a decline in cholesterol level, decline in BMI, were also associated with a diagnosis of dementia. Again, we don't know if this is either related to the brain pathology occurring in the hypothalamus area or to a reduction of appetite caused by dementia. As we have talked about in earlier podcast, dementia patients, they're apathetic to the food, they have depression, they lack an interest in food, and so we're not quite sure if this is from brain pathology or a decrease in appetite, with them losing their weight and also having lower cholesterol levels. This has been explored a little bit more in the literature with a variety of groups. However, the BMI levels decline, but not the albumin levels. So, I think that watching your BMI levels over time as well as your cholesterol levels over time, are very important in relationship to our African-American population with diabetes. Because, these may be precursors to the diagnosis of dementia.

In summary, the results of the analysis of this study really adds to our evidence that high glucose levels are associated with an increased risk for dementia, and that this risk accrues over many years before the diagnosis of dementia is made. We also know that after this long period of elevated serum glucose levels, that these levels will decline significantly over time, and be a precursor before the clinical diagnosis of dementia. So, as a provider, I am recommending that you monitor over time the patient's glucose levels, cholesterol levels, and BMI, and keep in mind that a decline may point to you doing more cognitive impairment testing with African-American patients with diabetes. This concludes our podcast for today. Thank you very much.