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Emerging Patterns in Diabetes Management

TRENDS IN THE MANAGEMENT OF TYPE 2 DIABETES

Trends in the Management of Type 2 Diabetes. What's happening now and what's coming up next? You are listening to ReachMD XM157, The Channel For Medical Professionals. Welcome to focus on pharmacy. I am your host Dr. Charles Turck, PharmD.

Dr. Su Cornell, PharmD, a Certified Diabetes Educator and Assistant Director Of Experiential Education at Western University Chicago College of Pharmacy, a fellow of the American Pharmacist Association, Dr. Cornell is also an assistant professor of pharmacy practice at Midwestern.

DR. CHARLES TURCK:

Dr. Cornell welcome to the program.

DR. SU CORNELL:

Thank you Charles, it's pleasure to be here today.

DR. CHARLES TURCK:

We will be discussing current trends in the diabetes management, and I wanted to start off by asking about those trends. What exactly are we seeing in the type 2 diabetes population?

DR. SU CORNELL:

Well, unfortunately, we are seeing a huge epidemic in this disease and mainly in type 2. What's happened over the years is as the world has evolved and people have evolved, we have seen an increase in food, we have seen a decrease in activity. We have multiple cultures coming to the United States and you know worldwide and it's actually estimated that worldwide every 10 seconds someone dies from diabetes and again worldwide in that same 10 seconds, 2 people actually develop the disease. So, it is a global epidemic and more close to home we find that actually here in the United States every 21 seconds someone is developing diabetes and we see type 2 as being the main type of diabetes that most people are developing. You know, years ago, and I am sure you remember back from the girl pharmacy school days as I do we were thought that type 2 diabetes was something you got later in life. You know, at that time, it was at all people over 40 get it or over 50, of course, now those numbers seem young to me, but what my finding is age is not an indicator anymore that type 2 can occur at any time as well as type 1 can occur at any time. So, really age does not define the disease and worsening a trend of children in adolescence that are developing type 2 diabetes. As a matter of fact I have a patient who is in my practice, who was diagnosed with type 2 diabetes at the age of 13, so we are seeing more and more again children in adolescence that are developing this devastating disease which comes, as you know, with multiple, multiple complications.

DR. CHARLES TURCK:

What are the current treatment goals of therapy, both nonpharmacologic and pharmacologic for patients with diabetes?

DR. SU CORNELL:

The good news is we have had a huge plethora of medications that have come to market to try to treat this condition. The other good news is it is something that can be treated with some simple, very simple lifestyle modifications and what we try to do as a diabetes educator as I always put to my patients, my job as a diabetes educator is to give them all of my knowledge, so they can live everyday with diabetes without me, and you know, if you think about it, the person who has diabetes they live with the day in and day out, so they have to always manage it, and knowing how to manage it is the best way they can control it opposed to letting it control them. So, what we encourage the patients to do is learn as much as they can about diabetes and that's where actually 80% of managing the disease comes from non-pharmacological treatment strategies, so you know, healthy eating, notice I didn't say diet because we don't say diet because diet is a usually short term thing, healthy eating is just a behavior you want to develop for life. Exercise or activity just increasing activity, managing their weight, losing a few pounds can actually make a huge difference in their blood sugar, their blood pressure, and their lipids, so in a simple lifestyle modifications can actually make a big difference and of course, as a pharmacist you are very well aware of all of the new drugs that have come to market and the new ones that are, you know, knocking on the door and in the pipeline. What we have learned over past decades about diabetes, specifically type 2, is it's a multiple organ disease. Again, years ago, back when were in school we were first learning about it. I was told the pancreas was the problem. Well, now we know the pancreas is one of five organs that is actually the problem in this very serious disease. If the liver doesn't work right, the tissue doesn't absorb sugar correctly. We have the stomach or the GI tract that doesn't utilize or move the food through appropriately and of course even the brain. So, we have multiple organs that we now are even more discovering more every day that are defective with this disease, and so when we come to treating it we need to use treatments that fix all of the broken organs opposed to picking 1 medication that fixes 1 organ and my knowledge when I talked to another healthcare professionals or patients. Let's say, for example, if you had a car and your car you bring it into shop because your transmission went out, your brakes went out and your fuel line was faulty and you brought it in, but they only fixed your transmission, the car still wouldn't work right and that's the same thing with diabetes. We have multiple organs that are broke and if we choose 1 particular medication to fix 1 particular organ that is great, but we are not fixing the other organs that are broke. Now, in addition to that, you know, for every medication that's out there, it pretty much mimics a lifestyle behavior, so for example, I mean, lot of folks are familiar with pioglitazone and rosiglitazone. The glitazone class of drugs and don't you think more than exercise and a pill. Metformin, which is first line therapy for treatment of type 2 diabetes is nothing more than eating breakfast, so for every drug that's out there, it is adjunct to lifestyle because its complementing those behavior changes with those lifestyle changes that we are encouraging folks to actually make to improve their health.

DR. CHARLES TURCK:

So, you have outlined the rationale for combination therapy certainly. When a patient is newly diagnosed, what exactly do we start them on?

DR. SU CORNELL:

Interesting that you bring that out because every June, the American Diabetes Association hosts their annual scientific sessions and you know this is where the latest, greatest trends are actually introduced and you know folks are educated on them and this years Banting award winner was Dr. Ralph DeFronzo and as I always thought that Dr. DeFronzo is one of the godfathers of diabetes and he is in Saint Antonio Texas and he does lot of the research on type 2 diabetes, and interesting in his lecture, he actually stated that he sees down the road upon diagnosis of type 2, triple therapy from the get-go. His recommendations were metformin, a glitizone, and one of the incretin hormones, specifically he went with an incretin mimetic, but you know, he did generalize it to say incretin hormones, so he is actually identifying 3 pharmacological agents from the get-go again with the rationale of there is multiple body parts that are broke, so you are going into fix those multiple body parts.

If you are just joining us, you are listening to Focus on Pharmacy on ReachMD XM157. I am your host, Dr. Charles Truck. Our guest is Dr. Su Cornell, PharmD, a certified Diabetes Educator and Assistant Director Of Experiential Education at Mid Western University Chicago College of Pharmacy. We are discussing best practices in the management of type 2 diabetes. Specifically, starting the patients out potentially with triple drug therapy at diagnosis and that may be becoming a trend.

DR. CHARLES TURCK:

Dr. Cornell you mentioned incretin mimetics as one of the different components of that triple drug therapy. Are increased mimetics currently recommended in treatment guidelines?

DR. SU CORNELL:

In the treatment guidelines, the ADA algorithm that was actually introduced and published in the latter half of 2006, they are actually not on that algorithm, but interestingly the reason or the rationale behind it is when the consensus group met to come up with kind of road map for lack of a better term or the algorithm and the treatment of diabetes of type 2 diabetes in particular. They had set some clear guidelines because again with the plethora of drugs out there where do they go with this and one of the things that they had discussed was, you know, whether you agree with us or not, they discussed not utilizing drugs or placing them in the algorithm if they had not been on the market for at least 6 years within the United States. So, with that being said many of the newer agents that were very familiar with and were actually in favor of using, they are actually not in that algorithm. However, in the revision of this algorithm, I do expect to see them definitely showing a presence, and the rationale behind that as well is because some of the newer agents have a better side effect profile should we say, then some of the older agents. You know one of the big concerns with diabetes and medication is weight gain. Many of the agents that are actually listed on the 2006 algorithm, one of the adverse effects is weight gain and here you have a person, you know, with diabetes you are trying them to lose weight, but the drug is causing him to gain weight. They are kind of going well, which I do here. The newer agents are either weight neutral or encouraged some weight loss and that's where the newer agents may actually show a better or favorable effect as first line therapies down the road. Not to mention that one of the things coming up now too again we talked about the multiorgan dysfunction with diabetes, but diabetes is a progressive disease and what happens as we know from the ADOPT trial, which looked at sulfanuria, metformin, and the glitizones and they were kind of looking over 5 years in

monotherapy, how do these drugs work and how do they last and in all cases, over 5 years of time the disease progressed and the patient actually lost control of the A1c, and actually the A1c increased. You know, with of course the glitizones being most favorable at keeping the A1c to a lower end. However, what we were looking at, as the monotherapy alone just wouldn't control that A1c. So, you know, with that being said the ultimate goal is how do we preserve or prevent the progression of diabetes and with that we are looking at how do we save the beta cell because the destruction of beta cell is what progresses the disease. If the beta cells are not producing insulin, then that's where the disease progresses and that's where most patients will end up using insulin. What's really interesting and you probably heard about the study that was done in China with a group of patients that were immediately newly diagnosed was type 2 diabetes. They were actually put an insulin pump for 2 weeks and then taken off and after 2 years 40% of those people still did not have diabetes, so their diabetes went into a remission and stayed in that remission for 2 years to-date. So resting the beta cell or saving the beta cell at an early intervention can actually go a long way.

DR. CHARLES TURCK:

So, when the patient is newly diagnosed it is not necessarily even too late.

DR. SU CORNELL:

Correct.

DR. CHARLES TURCK:

And then you had also mentioned sulfanuria. Are those dying breed?

DR. SU CORNELL:

You know, sulfanuria were the first drug, oral agent, that came into market and you know that was a nice alternative for folks from insulin who were not fond of injecting themselves several times a week or you know once or twice a day back in the 70s and 80s. So, when sulfanuria came to market, they definitely had a place, but as we have learned more about the disease

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