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Management of Postprandial Glucose

Each month ReachMD XM 157 presents a special series. This month is Focus on Diabetes. Listen each hour at this time as we explore with American's top medical thought leaders for latest information on diabetes.

For years we've been taught to get that glucose down, but is it really enough? Some researchers have proven differently.

Welcome to the Clinician's Roundtable. I am Dr. Shira Johnson, your host, and with me today is Dr. Stephen Colagiuri from the Boden Institute of Obesity, Nutrition and Exercise at the University of Sydney in Australia. He is the co-author of a key publication by the International Diabetes Federation, which recently announced new guidelines on postprandial glucose control, the author of many books and peer review articles.

Today, we are discussing treating the serum glucose, is it enough, and also some other information on treatments in the horizon.

DR. SHIRA JOHNSON:

We are so glad you could be here today with us, Dr. Colagiuri. Thank you for taking the time.

DR. STEPHEN COLAGIURI:

It's my pleasure.

DR. SHIRA JOHNSON:

Can you tell us something about the work you've done with the Diabetes Federation in the past and what some of those goals are?

DR. STEPHEN COLAGIURI:

The International Diabetes Federation is an organization of nearly 200 individual organizations throughout the globes that are about 150 or so countries and it essentially concentrates on doing high level things like providing guidance on treatment of diabetes and also helping to support and increase resources in each of these countries. My main work with the International Diabetes Federation is focussed on developing guidelines, mainly for type 2 diabetes, but then more specific guidelines addressing critical questions in diabetes management such as control of postmeal glucose.

DR. SHIRA JOHNSON:

Postmeal glucose, what about some of the other work you've been doing with the Diabetes Federation, anything with prevention. I know they are very big on prevention of metabolic diseases, is that true also for diabetes.

DR. STEPHEN COLAGIURI:

The International Diabetes Federation is of course very focused on prevention as a very important means of impacting on the diabetes epidemic and it actually has produced again publications and carried and involved with diabetes prevention programs throughout the world, and although I am personally involved in) <_____> in Australia, I haven't been specifically involved in other work in prevention around the world.

DR. SHIRA JOHNSON:

I am curious you used the word epidemic. If certainly in America there is a problem with obesity and we know obesity can be a risk factor for diabetes, do you think the numbers worldwide show that it's an epidemic or something that's clearly on the rise?

DR. STEPHEN COLAGIURI:

The International Diabetes Federation monitor this closely and each 3 years produces a diabetes atlas with updated figures on the extent of the diabetes problem and then predictions over the coming years and on the last three occasions that it's done this, it's clearly shown that throughout the world there has been an increase in diabetes and the predictions over the next 20 or so years is that the number of people with diabetes throughout the world will double and we will end up with nearly approximately 350 million people with diabetes.

DR. SHIRA JOHNSON:

I know the federation does a lot of work in the laboratory and that part of that job is bringing the results of that research to the bedside as you did with the work on postprandial glucose control, can you give us any other instances where the work you are doing is already proving practical in the clinical arena?

DR. STEPHEN COLAGIURI:

Well, I have definitely been involved with some work in the Pacific Islands and in some other Asia Pacific countries where we've been trying to assist these developing countries to implement what is known through measures that correspond to the availability of both the human material resources so one of the major problems is that the idea the International Diabetes Federation faces is trying to help

countries, which don't have the resources that United States and Australia take for granted.

DR. SHIRA JOHNSON:

You know, a lot of their recommendations in the past and even recommendations coming out now are talking about very tight control. How tight is very tight when you talk about control and can this be implemented practically?

DR. STEPHEN COLAGIURI:

Yes, I think it can be implemented practically. If one has the resources, the levels of glycosylated hemoglobin that are now recommended are at least 7% and many organizations including international diabetes federation suggests that 6.5% is the level that we should be aiming for. Some of the studies currently underway are even trying to achieve levels of 6%, the issue is not only trying to get to those levels, but do it safely and that essentially means achieving those levels without producing undue hypoglycemia. In terms of the glucose levels themselves, target fasting glucose levels of 110 mg/dL or 140 mg/dL after meal.

DR. SHIRA JOHNSON:

You know, I have both patients and I have friends who now use that insulin pump and they kind of feel that they can eat what they want after a certain point and just jack up the pump a little better, it will do the work for them, but what is the effect of patients who run around with glucoses that are a lot higher than the 140 postprandial that you mentioned when they tried to control it this way.

DR. STEPHEN COLAGIURI:

Well, I think the pumps that people with type 1 diabetes have been very useful and has allowed them more flexibility in the past, but the dangers of a high glucose level exists for everybody and if levels are consistently above those targets that we mentioned then there is the risk of the diabetes specific complications of eye damage, kidney damage, and neuropathy and also an increased risk of the large vessel disease, which causes cardiovascular disease, heart attack, stroke and may affect the peripheral vessels, which may predispose amputation.

DR. SHIRA JOHNSON:

And we talked about postprandial control and a guideline you suggested would be 140, what about nighttime control. How important is that?

DR. STEPHEN COLAGIURI:

Well nighttime control is certainly important because when I speak whether it's approximately a third of the day so what happens in the 8 or so hours when people are asleep will influence the overall glycemic control. The other danger of course, if one pushes too hard, is that it's a time of the day that the risk of hypoglycemia increases when one's asleep so I think that we do make concerted efforts to try and control the glucose levels overnight, but with a little bit of extra caution in relation to how hard we push it to in order to avoid hypoglycemia.

DR. SHIRA JOHNSON:

You know on the surface if you have got a patient, who has got difficult to control glucose with levels that swing all over the place and sometimes it is their fault and sometimes it's not, it could sound kind of discouraging, but there has got to be a positive spin to this research, I mean what I am hearing is sometimes they are on multiple drugs and the frequent fingersticks, etc., we've learned so much about diabetes in the previous years, what's coming up, what's the brighter future for people, who persistently have trouble controlling their glucoses?

DR. STEPHEN COLAGIURI:

I think we have to admit that controlling diabetes for most people isn't easy and it does require attention to who had an exercise and got a pop from the medications that are often used, but I think the majority of people with paying attention to those details can achieve diabetes control to the point that their risk of complications is quite small. On the positive side, the intensive medications, the number of options especially for people with type 2 diabetes has increased in the recent times, is continuing to increase with new agents that affects glucose and insulin responses to glucose in a way that we didn't previously have so we have the GLT1 analog such as Byetta, we have new products such as the DTP4 inhibitors, which increase indulgences <_____> and GLT1, which do actually focus on minimizing or reducing the increasing glucose levels that occur after a meal, the people, who require insulin, we will say have new insulin preparations both the short and long reacting insulins, which allow us to push harder in terms of achieving the diabetes control that we would have liked to achieve while minimizing the risk of hypoglycemia.

DR. SHIRA JOHNSON:

You know a lot of our listeners are primary care doctors whether they are family medicine or internal medicine, and some of the medications that you just mentioned are probably new to them. Can you tell us a little bit of how they work in conjunction or what is schedule might be that allows for some control of postprandial, but still give them something to carry them on throughout the day or throughout the night.

DR. STEPHEN COLAGIURI:

Well, these agents that I specifically mentioned are new. They are mostly used in conjunction with the other more conventional medications, which we have such as metformin or sulfonylurea or glitazones, but there are situations where we don't achieve the effect that we want to achieve with those agents and we have to think of something else for those situations in which people are intolerant to those particular more usual medications and in those instances and especially if monitoring indicates that the problem is related to failure to control the postmeal glucose that's when these newer agents become important and another option in terms of trying to achieve the targets that we are aiming for.

DR. SHIRA JOHNSON:

And just going off the track a little bit, but I am really fascinated by this, can you tell us what's new in DKA or management of diabetic ketoacidosis? Are you involved in any work on that?

DR. STEPHEN COLAGIURI:

I don't know that there is anything specifically new about the treatment of diabetic ketoacidosis. I mean, fortunately it is not a common complication of diabetes, the type 1 diabetes, but in the situations that it should arise can easily be prevented through education especially warning people with type 1 diabetes that under those circumstance even if they ill and vomiting should they emit their insulin, I think that we have better recognition of the problem, especially the early stages, we can implement over the phone care in somebody, who starts to get in that situation by administering more frequent injections or quick acting insulin in order to avert the problem, but if it does develop then people present to a hospital then usually there is a greater awareness of the problem and more immediate and effective treatment.

DR. SHIRA JOHNSON:

You know relatively recently inhaled insulins have been on the market, have we had any success with that?

DR. STEPHEN COLAGIURI:

I think overall the promise of the inhaled insulin hasn't to date lived up to the expectations. It seemed in theory to be a good way of delivering insulin, removing the need for an injection and therefore the possibility of more frequent administration much like the body used to do with insulin before somebody developed diabetes, but as I mentioned the effectiveness and the uptake of this form of therapy has not been what we expected.

DR. SHIRA JOHNSON:

And all these medications you mentioned they all go better with exercise, right, getting your patients to do some form of it, moderate or mild exercise is important?

DR. STEPHEN COLAGIURI:

None of these therapies are entirely effective with that, some attention to the diet, some attention to physical activity within the limits of the person's capability and that may be aerobic exercise or it may be resistance training and exercise so those, who are unable to undertake aerobic exercise, but some form of increase in physical activity does help with controlling glucose.

DR. SHIRA JOHNSON:

We are just about out of time. I have one more question and that's for our listeners who may not see all diabetic patients, are there not well skilled in endocrinology, but they need more information to manage these patients? Where can they go for more information?

DR. STEPHEN COLAGIURI:

There are a number of websites, the International Diabetes Federation's website is www.idf.org. Also the American Diabetes Association website has a lot of information, which your listeners could access.

DR. SHIRA JOHNSON:

Dr. Colagiuri, thank you for being my guest today.

DR. STEPHEN COLAGIURI:

Oh, it was my pleasure.

DR. SHIRA JOHNSON:

Today we've been discussing diabetes and is managing the glucose in your patients enough? Also we have been talking about some new therapies. My guest today has been Dr. Stephen Colagiuri from the University of Sydney in Australia and I am Dr. Shira Johnson. You've been listening to the Clinician's Roundtable on ReachMD XM. For comments and questions on this or any segment, send your e-mail to xm@reachmd.com. We want to hear from you and thank you for listening.

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