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Inpatient Insulin: A Team Approach

HOSPITAL INTENSIVE INSULIN PROGRAM

**Each month ReachMD XM157 presents a special series. This month is Focussed on Diabetes. Listen each hour at this time as we explore with America's top medical thought leaders for latest information on diabetes.**

**Hyperglycemia <_____> in old patients is an important correctable risk factor for inpatient morbidity and mortality. Physician assistant filling the management void of inpatient diabetic and hyperglycemic patient. Welcome to the Clinicians Round Table.**

**I am Lisa Dandrea, your host and with me today is Sue Kling-Colson, a physical assistant with the Department of Internal Medicine at the University of Michigan Health System. Today, we are discussing the hospital intensive insulin program and the role of physician assistants for management of diabetic and hyperglycemic patient.**

LISA DANDREA:

Hi Sue. Welcome to ReachMD.

SUE KLING-COLSON:

Hi. Thank you for having me.

LISA DANDREA:

Sue, you work with the team of internists and PAs and have implemented an intensive insulin protocol for the management of the diabetic and hyperglycemic inpatients, called HIIP. Why was this program initiated and how does it work.

DR. SUE KLING-COLSON:

I work with a team of physician assistants and we also work with a team of endocrinologist. The program was developed by our supervisor, Dr. Roma Gyanchandani. About 4 or 5 years ago, she was asked by one of our cardiothoracic surgeons to help manage hyperglycemia post his cardiothoracic patient after their surgery such as bypass surgeries or heart valve. So that is kind of where it started.

**LISA DANDREA:**

Is this program for the cardiothoracic surgery patients only?

**DR. SUE KLING-COLSON:**

It is expanded into cardiothoracic surgeries, transplant surgeries, heart transplant, lung transplant, vascular surgery service, and a couple of thoracic surgeries such as transhiatal esophagectomies and lung transplants.

**LISA DANDREA:**

And what about the other diabetic patients?

**DR. SUE KLING-COLSON:**

We are a subspecialty of the Endocrine Department. So there is also an endocrine consult service. So they cover the other diabetics on the other services. We have been asked to expand other surgery services in the hospital, but currently we just do not have the manpower yet.

**DR. LISA DANDREA:**

And are the patients admitted to this program current diabetics, or are all patients immediately in the program following surgery?

**DR. SUE KLING-COLSON:**

It depends when they go through our thoracic ICU. They are picked up by us if they don't have a history of diabetes. They are picked up by us if they required an insulin infusion. Their blood sugars have stayed up for 2 days after their surgery. If they are diabetic patients they are picked up by us or automatically consulted on them from the first day there. So they are admitted for the surgery and we take them up following their surgery right away if they are diabetic and postop day 2 if they are not diabetic.

**LISA DANDREA:**

And let's talk about the role of the PA with this program. The program utilizes the NBPA team approach to patient care. Was it originally set up that way?

**DR. SUE KLING-COLSON:**

It was. The endocrinologist thought this is an important thing to manage, the hyperglycemia in the diabetic patients when they are in the hospital especially in a stressful situation after the surgery, but lot of their time is spent in outpatient setting. So they needed somebody,

who could be in the hospital and do a lot of the management and education of these patients and so PAs were included in the model right away.

**LISA DANDREA:**

And how many providers are on your team?

**DR. SUE KLING-COLSON:**

Four PAs. Currently, we have a nurse practitioner that works with us on weekends, and we have five main endocrinologists that work with us on a regular rotating basis, and then the rest of endocrine department will rotate different weekends.

**LISA DANDREA:**

And are the PAs hired with any specialized training or is this on the job training?

**DR. SUE KLING-COLSON:**

It is all on the job training. A few of the PAs that are working in this department are the nurse practitioners that have had a certified diabetes education certificate, but it is not required.

**LISA DANDREA:**

So what are your protocols for treating the inpatient diabetic patients?

**DR. SUE KLING-COLSON:**

The supervisor of my department, Dr. Roma Gyanchandani, she developed an insulin infusion protocol. So when patients are in surgery and if they have 2 consecutive blood sugars greater than 140 or one blood sugar greater than 200, they are automatically started on the insulin infusion in the OR and that continues they monitor the blood sugars based on the protocol q.1h., q.2h., and the insulin infusion is continued as long as the patient is needed or wean themselves off of it.

**LISA DANDREA:**

And how is that different from the management of the diabetics in the other part of hospital?

**DR. SUE KLING-COLSON:**

This is sort of a paradigm shift I think of diabetes management in the hospital is that it is very intensive control whereas I think a lot of other areas of the hospital still needs a lot of sliding scale management. The patients are sometimes started on insulin at home, where we started on their insulin in the hospital and after a stressful situation their requirements of course go up so that doesn't always cover them and they have this hyperglycemic episodes. So insulin infusions are always started in another part of the hospital.

**LISA DANDREA:**

So what's your typical day?

**DR. SUE KLING-COLSON:**

We have usually a patient who probably about on average say 15 to 20 patients. We put the patient's up amongst the PAs will do sort of a pre-round, will gather all their vitals and information and talk to the patients, do our exam, and make any changes to their insulin regimen that we see appropriate. Then we will round with one of our attending physicians little later in the day, and at that time we will just go over the changes that we have made. You know corroborating; just make some decisions on tougher patients that kind of ensure about what we want to do with their insulin regimen.

**LISA DANDREA:**

What are the benefits of the patient participating in the HIIP program?

**DR. SUE KLING-COLSON:**

For both the stress-induced patients and the diabetic patients, the studies have shown that this significantly reduces their risk of infection, mortality from these surgeries, and their length of hospital stay. A recent study from the hyperglycemia group at UCLA just documented a figure of about 5 million dollars that they saved the hospital just from reducing length of hospital stay for these patients. In the diabetic patients, I think there is a big benefit for them if they were not under good control with their diabetes preoperatively, this gives us an opportunity to figure out what their insulin needs are or their, you know about a regimen for them to be and then improve their A1c.

**LISA DANDREA:**

Do the PAs have any responsibility during the surgeries?

**DR. SUE KLING-COLSON:**

Not during the surgeries. No.

**LISA DANDREA:**

If you are just joining us, you are listening to The Clinician's Round Table on ReachMD, The Channel for Medical Professionals. I am Lisa Dandrea and I am speaking with Sue Kling-Colson, a physician assistant with the department of internal medicine at the University of Michigan. We are discussing the role of physician assistants for the management of diabetic and hyperglycemic inpatients with their HIIP program.

Sue does the program offer any outpatient or followup care?

**DR. SUE KLING-COLSON:**

We do especially with the patients that we send home on a different insulin regimen than what they came in on for a stress-induced hyperglycemia, etc., requiring treatment after surgery and at the time of discharge, we have an outpatient clinic and we try and see the patients that we discharge home on a regimen at least once about 4 to 6 weeks after their discharge date.

**LISA DANDREA:**

So you follow them there as well?

**DR. SUE KLING-COLSON:**

We do. And then we can bridge them to if it is stress-induced hyperglycemic, we are seeing that they still need some insulin to help control their blood sugars, we will transition them to a endocrinologist or back to their primary care physician.

**LISA DANDREA:**

How about any other programs to help them manage their diabetes? Do you guys do E-mail or place a website tools?

**DR. SUE KLING-COLSON:**

We don't do a lot of E-mail right now. We see patients from all over the state and different areas of the country. So a lot of times we will do phone followup with them. If they can't come back to our clinic, we will talk to them a few times over the phone until they feel comfortable going back to their primary care physician. We also have a diabetes center here at the University of Michigan and we have diabetes educators and nutritionists and they have type 1 and type 2 diabetes classes that we can set them up with if we think they need more information about nutrition or the insulin or things like that.

**LISA DANDREA:**

Are there any other hospitals using this model?

**DR. SUE KLING-COLSON:**

There are quite a few other hospitals. We have a few others in the area and a couple that we know of nationwide that we talk with often to see if kind of different things that they are doing.

**LISA DANDREA:**

How is the patients benefited from the MDP 18 model that you use in the hospital?

**DR. SUE KLING-COLSON:**

I think that we are able to be the complete diabetes caregiver we can prescribe the insulin or the oral medications that they need or we can also provide them with a lot of education. We are sort of a physician and a certified diabetic educator combined. We can teach them about their diet, their insulin regimen, the different types of insulin, and the different meters and the different insulin products that are out there such as the different pen devices.

**LISA DANDREA:**

And do you find that they are discharged quicker under your service?

**DR. SUE KLING-COLSON:**

That is what studies have shown. Yeah.

**LISA DANDREA:**

And what do you think the greatest value of a physician assistant has brought to the endocrinology practice in terms of diabetes management?

**DR. SUE KLING-COLSON:**

With a new shift, I think in diabetes management in the hospital, I think we provide diabetics with a great service. We can go into detail with their insulin regimens and things that they have never been talked to about in their past with their diabetes, what types of insulin they are on, what type of different options there are out there for their insulin to improve their control, and we can provide them with resources to set them up with an endocrinologist. We have more time to spend with them in their inpatient setting, they are kind of a captive audience at that point, so I think that a lot of endocrinologists spend a lot of time in their outpatient setting and don't have the opportunity to spend that time with the patient.

**LISA DANDREA:**

Can you tell us about any research projects that you are currently involved in?

**DR. SUE KLING-COLSON:**

You know, we are trying to publish some data on our program and we are trying to work with some companies on the continuous glucose sensors to look at the efficacy of using those in our ICUs. There hasn't been any studies done on the continuous glucose sensors. We don't know if certain medications in the ICU might affect those sensors. If their efficacy and accuracy is good in the ICU it would save a lot of workload for the techs and nurses working with the insulin infusions in the ICUs if they won't have to be checking the blood sugars you know q. hourly, with Chem <_____> and will save the patient to finger pokes every hour, so we are working with some sensor companies on that and then we are have a lot of other projects in the works.

**LISA DANDREA:**

So are you mostly just using insulin then when they are inpatient?

**DR. SUE KLING-COLSON:**

We do try and use insulin most of the time we find with the oral agents so many things can change. There are so many variables in the inpatient setting that you can easily take away the oral agent once it has been given to the patient. So we use insulin because it is a great healer, it prevents inflammation, and it helps to get them under the tightest control, give us the ability to change things as their picture changes in the hospital.

**LISA DANDREA:**

The future of this in the entire hospital is still in question, but you guys are making some great changes in the postsurgical patient and moving towards that goal it sounds like.

**DR. SUE KLING-COLSON:**

Yeah. Hoping to expand.

**LISA DANDREA:**

Can you tell us a little bit about how your supervising physicians started the program and how it all came about?

**DR. SUE KLING-COLSON:**

When she first came to this University, she was asked by one of the cardiothoracic surgeons after he had seen quite a few studies that showed the benefits of having intense insulin therapy in cardiothoracic patients. He came to Roma and asked her to start this program, and now when she had worked on the insulin infusion protocol at previous facility and brought that in and started working with a couple PAs initially to start the program.

**LISA DANDREA:**

Any nurse practitioners at all in your team?

**DR. SUE KLING-COLSON:**

We do have one nurse practitioner that works with us on the weekend.

**DR. LISA DANDREA:**

So where could people get more information about your program?

**LISA DANDREA:**

On the University Of Michigan website, there are different clinics and we are under the Internal Medicine Department and then the Endocrinology Department and then there is a link to our hyperglycemia program.

LISA DANDREA:

I would like thank my guest Sue Kling-Colson for coming on the show.

**I am Lisa Dandrea and you have been listening to The Clinician's Round Table on ReachMD, The Channel for Medical Professionals. Please visit our website at www.reachmd.com, which features our entire library through on-demand broadcast or call us toll free with your comments and suggestions at 888 MD-XM157 and thanks for listening.**

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