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Repletion Management for Vitamin K Antagonist Anticoagulation

## Announcer:

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## Dr. Gibler:

So this is really an opportunity to have input and we'd love to hear from you regarding this particular patient type, but if there are any questions, please bring them to the microphone. I know it's a little tough. We love to see the large attendance we have here. But if you have any questions, please feel free to ask them. And if you need to, if it's too onerous to get out to the microphone, just shout it out and we'll try to reproduce it so that it can be answered.

Okay. Natalie, talk about this very interesting presentation. Thank you so much. Is it necessary, if you have a patient that comes in and you have every indication that they're on a vitamin K antagonist, how important is it to get that initial INR on these patients? And is this somebody that you have an intracranial bleed, you have a history of vitamin K antagonists, is this somebody that absolutely has to have an INR?

## Dr. Kreitzer:

That's a good question. We typically are able to get that lab back at UC very, very quickly. So we do actually wait. The PCCs or FFP, if that's not available, or it can be dosed based on the INR and the weight, so can be very helpful from that standpoint. However, you know, if it's going to be a lab that takes a very long time to come back, and, you know, you're going to be waiting a while, then discussion with family to best understand if this is a patient who is compliant with their medications. And if so, may be some somebody that you might consider proceeding ahead with reversal without that information, again, if it's going to take a while for that live value to come back. We're very fortunate that it does come back quite quickly for us.

## Dr. Parry-Jones:

Yeah, I think I'll just add to that. At our center, we introduced a point of care INR machine to try and speed this process up. I think even with that, you sometimes get challenges, they go missing, they stop working, people can't get them to give you a reading. So I think one approach that we've tried to take is, is to not wait too long for lab results. So I think an INR result can take up to an hour sometimes at many centers. And that's a really long time, I think in hyperacute ICH. And so I think if you are really quite confident that they're taking their Warfarin as prescribed, they're very likely to be anticoagulated when you've got them in front of you there, so sometimes I think it's quite reasonable to give the lowest dose available for the PCC, given the lowest band of INR anticoagulation. And then when the INR does come back, you can often talk them out if it comes into one of the higher bands for the PCC that you're using.

# Dr. Seiffge:

We also use a point of care in the emergency department. I think, but it's also important because then you get immediate result. You can get it within 15 seconds, you just need a do a blood draw that you will draw when the patient comes in. And I think what we also do in our department actually when we give PCC, then we wait for 15 minutes, and we repeat the INR to see whether we reached the target.





And then you can re-dose actually, which is quite convenient, especially if you have high INRs, but you're unsure how much you should give to them.

## Dr. Parry-Jones:

Yeah.

## Dr. Seiffge:

And I think that good to have a major point of care device, because then you can retest quite fast.

## Dr. Gibler:

Just from the audience perspective, and we don't have a specific polling question is with a show of hands, how many of you all have point of care testing for INR available to you in in the emergency department or your acute stroke center environment? So it looks like maybe half of a large group so that I think that's a - definitely going forward with care if you have this particular patient population. Are there any questions?

What about - this is a real issue for the stroke neurologist taking care of a patient now in hospital, when do you restart anticoagulation on these patients? Because if you look at, you know, if you are ill enough for whatever precursor illness that you have to be on an anticoagulant on a vitamin K antagonist, you take the patient off of it, they have their native illnesses that led to their anticoagulation. When would you restart it? I'd like to hear from the panel and anyone in the audience that has an opinion on that. Go ahead. Natalie, it's your section, why don't you start?

## Dr. Kreitzer:

Sure. So I think anybody who says one specific time point or one set answer has not done this. So I - it's going to be very dependent, one patient to another. And I think one of the questions to ask, of course, is why did this patient have this ICH? Was there, you know, a secondary vascular cause that has since been repaired? That patient, you might want to be a little bit more aggressive in, especially if they have an important reason for anticoagulation. A lot of these patients, while they're with us in the ICU, have complications, like pulmonary emboli, DVTs, so they have a new reason to get anticoagulated again. But then there are going to be other patients who, you know, you discover on their MRI, they have amyloid angiopathy. And you'd never want to anticoagulate them again. So it's really a case-by-case basis, but there certainly are some patients that can be repeat anticoagulated again.

I think the biggest piece I want to add is DVT prophylaxis, even though it's not full anticoagulation, is very critical in these patients. What we typically do, and what a lot of sites do is 24 hours after a stable head CT, we will start at least that DVT prophylaxis because these patients are high risk of thrombotic complications.

## Dr. Gibler

Excellent. Thank you. A question?

## Female:

I'm interested to know your approach in the emergency department for patients who have Warfarin for a mechanical valve, do you ever adjust your repletion management?

## Dr. Kreitzer:

That's a good question. So we used to. I think we were all very, very scared of that several years ago, but now we don't. We reverse those patients. And, yeah, so.

## Dr. Gibler:

Yes, please.

## Male:

Hi, I'm a stroke physician from UK. Excellent talk, thank you. And I'd agree with the comment on most bleeds in the brain need to be reversed. So I wondered if you had any, or the panel had any comments on what constitutes minor bleeds that don't need reverse or repletion?

## Dr. Parry-Jones:

I think that's a very good and very tough question, I think. So if you look at an individual patient's risk of hematoma expansion, there is up to a point a linear relationship with volume. So the smaller the volume, the lower the risk of expansion. So you have to balance that risk against any potential risks of the reversal treatments. And for, you know, reversing and stopping the anticoagulation for a period of time. But I suppose another way to view them is that those patients have got the most to lose, and that they - so you know, they have had a minor stroke, their prognosis is probably quite good. And if they expand significantly, then that's going to have major and, you know, potentially disastrous consequences for their outcome. So I don't think I could sort of say, you know, less than 5 mL's, less than 1





mL; I think, you know, you just have to weigh it up on a case-by-case basis. And I don't think there's a strong evidence base to guide us there. But it's a good point. And it's a tricky question in clinical practice, for sure.

#### Female #2:

Yes, hello, thank you. I'm Ann Roche from Christchurch, New Zealand. I was just wanting to ask about the duration of PCC effect, and whether it's necessary to repeat the INR and consider further treatment at 6 hours or later, particularly if their prothrombin ratio has been high?

## Dr. Seiffge:

Well, I can take this probably because we do this retesting. So usually, a PCC acts very fast, within a few minutes, so you can actually retest within after 15 minutes. That's what we are doing so you see already an effect on the INR, and then you can do a re-dosing immediately. So we don't wait for 6 hours; we treat patients with PCC until they are in the INR that we want to reach, which is below 1.3.

#### Female:

And does anything persist like it's not going to be off after some hours?

## Dr. Seiffge:

To go up again?

## Female:

Yeah.

## Dr. Seiffge:

Well, that's why we give vitamin K, so that's the combination.

#### Dr. Gibler:

But your point is well taken is that vitamin K tends to work over, you know, 12 plus hours.

## Dr. Seiffge:

That's why you need to give an I.V. at least at the moment. I think it's very important. Many people forget to give vitamin K when they give PCC; that's something we see frequently that gets forgotten.

## Dr. Gibler:

And it requires a healthy liver to synthesize clotting factors. So there's a lot of pieces that - and I think that your point, I believe, is there's a lot of pieces that go into treating those patients. Anything else?

## Announcer:

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