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Released: 06/20/2023

Valid until: 06/20/2024

Time needed to complete: 1h 34m

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Case Presentation: Management of a Patient With Vitamin K Antagonist-Associated Intracranial Hemorrhage (ICH)

Announcer:

Welcome to CME on ReachMD. This episode is part of our MinuteCE curriculum.

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Dr. Kreitzer:

So next I want to go through a quick case. And we're going to talk specifically in this case about vitamin K antagonists. Now, as we're thinking about patients who are anticoagulated, and they present to us in the emergency department, there are several just basic questions that we want to ask about this patient. We want to know if they're anticoagulated first. And if so, what is the dose that they're on? And when was that last dose? Specifically for those DOAC patients since there's not a quick, easy lab that we can measure. Lab tests that we want to get in general are a CDC with platelet count INR, PTT.

So in this case, this was actually a traumatic brain injury case. And I present it knowing that most of you are stroke physicians but may serve on your committees for your hospital to help guide anticoagulation reversal or repletion strategies. And reversal or repletion strategies essentially are pretty similar for TBI and ICH. This is a 67-year-old man, and he had a fall from standing height. He's on warfarin, vitamin K antagonists, and had an INR of 3.0. Now his GCS on presentation was a seven. And when we think about some of the next steps, of course, in the emergency department, we're going to think about his airway and probably requires intubation. But as we think about anticoagulation reversal, we need to think about when is it safe to place an intracranial pressure monitor this patient? Now if you move this similar patient into a spontaneous ICH or IVH category, the same question is going to come up with an external ventricular drain.

Now I'll point to the AHA guidelines and what they would tell us to do for this patient in particular. And this is that in patients with a vitamin K antagonists associated spontaneous ICH, I.V. vitamin K should be administered directly after coagulation factor replacement, and they recommend PCC, to later prevent an increase in INR and subsequent hematoma expansion. And then as a second point, in patients with vitamin K-associated spontaneous ICH with an INR 1.3 to 1.9, it may be reasonable to use PCCs to achieve rapid correction of INR and limit hematoma expansion.

Now some of the data that this comes from is both retrospective, prospective, and a randomized controlled trial. The first, Majeed here, is 135 retrospective patients that had a smaller ICH volume when they were given PCCs when compared to FFP. Frontera did the first prospective study. And this showed a lower risk of death or severe disability at 3 months in the patients who received PCCs. And then the INCH trial is our randomized controlled trial that looked at this question of FFP versus PCCs. The endpoint was 1.2, INR at 3 hours post infusion. And it rapidly favored the PCC group, such that only 50 patients were actually enrolled, and the trial was stopped because that biomarker endpoint had been reached at that point.

Now, sometimes in the emergency department, we think, you know, what patient do we want to provide reversal to? And by and large, it's going to be almost all patients with ICH. And there's going to be a few here and there that have such a large ICH or in such a specific

area of the brain, such as midbrain, pontine hemorrhage that are large that we know are probably, unfortunately not going to be survivable. But by and large, we don't want to prognosticate early in these patients. We don't want to wait for a decline in their exam to provide reversal. And we don't want to fall into the trap of waiting - of not reversing the small hemorrhages, because those are the ones that we have the best opportunity to hopefully prevent the worst long-term outcomes.

Some considerations to keep in mind when you're thinking about who may or may not need reversal, again, are the time since the last dose, specifically for those DOAC patients, or the INR. It's possible they could be subtherapeutic on their Warfarin. Age, comorbidities, as I mentioned before, we do get those occasional patients that we know unfortunately are going to have that unsurvivable hemorrhage.

So our patient that I mentioned at the beginning of this case presentation received 4-factor PCCs, was admitted to our neuro intensive care unit. The monitor was placed, intracranial pressure monitor. Unfortunately he was with us for about 2 weeks, which is not uncommon for a patient like this. They oftentimes are susceptible to many of the ICU-associated complications, required a tracheostomy and a PEG tube. However, at 6 months was able to be at home, speaking, required assistance with most tasks.

Announcer:

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