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Summing Up: Echocardiography, Risk Assessment and Patient Monitoring for PH

### Announcer:

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

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### Dr. McLaughlin:

Hello, I'm Val McLaughlin from the University of Michigan. And I'm joined today by Bettia Celestin from Stanford and Ahmed Sadek from Temple. And today we're going to talk a little bit about summarizing some of our points in our echo series here. And I'd like to talk a little bit about risk stratification.

So Bettia, tell me a little bit about what some of the traditional objective risk stratification tools are.

### Dr. Celestin:

Yes, thank you, Val. We know that we have like the three main strategic risk score. For example, we have the REVEAL score, and (inaudible) to evaluate (inaudible) and long-term PH disease management. We have the French registry tool, its compare. And it's a prospective registry of newly initiated therapy for pulmonary hypertension. And we have the (inaudible) is a risk assessment risk score of the ESC tool and the ERS tool. So these are really good tools to further risk assessments.

### Dr. McLaughlin:

So Ahmed, we do these objective risk assessments in clinic all the time. But we also periodically repeat echos. So can you tell me a little bit about what you're looking at when we repeat echos longitudinally in patients who have been on therapy and how that contributes to their treatment escalation?

### Dr. Sadek:

Right, I kind of used the echo hand in hand with our other risk scores. And I think the two ways that I tend to use it is I think the echo at its core, gives you a direct sense of how well the right ventricle has adapted to the pulmonary hypertension and the PA pressures. And ultimately, our goal in pulmonary hypertension therapy is to get that RV, that right ventricle, to get to a point where it's functioning almost normally. And you can directly visualize that with kind of the structural signs that that we've mentioned in the past and the other signs.

But in terms of risk assessment, I kind of think of it in two ways. I think, number one, a lot of our risk markers and a lot of the components of the risk score can be affected by other comorbidities, joint problems, pulmonary disease, so on. And the echo gives you a little bit more specific standpoint as to how the pulmonary hypertension is specifically contributing to someone's functional limitations.

And then the other thing that happens with the risk score is that a large proportion of patients end up falling into this intermediate risk. In fact, most of the patients and you kind of a lot of times, it's difficult to know what to do with those patients. And the echo can further refine that. The echo parameters are reassuring that we stratify that patient into kind of a low-intermediate, or even a low-risk group who was previously in an intermediate risk. And vice versa, if the if the echo parameters are not reassuring, then we're more of an intermediate-high or a higher risk patient who was previously grouped in the intermediate-risk group by a more traditional kind of risk assessment metric.

**Dr. McLaughlin:**

Yeah, that's a great point. That's the patient who keeps me up at night, right, the patient, you know, maybe they're a young patient, you know, the 25-year-old who has a hall walk that is 450, even though the predicted is 700. And, you know, they feel pretty good. But you look at their echo and their right ventricle is really enlarged and dysfunctional. I'm worried about that patient, even though the risk score is low. And so I might follow that patient or change management on that patient, even though the risk score is low, just because I'm so worried about their right ventricle.

Bettia, do you have similar experiences? Like how do you integrate those two components?

**Dr. Celestin:**

Yes, you're right. It's really difficult for this type of patient to try to, like when you have a large right ventricle, and you have like this type of young people, and it's really, really hard to manage. But the risk score, we really have to use it daily back in the practice. But we have to train a lot to try to detect all this right heart function assessment and feature to have more risk assessment. So we have to practice a lot. So to practice, we have some tools and, for example, we have the EchoRight heart tools to try to practice on the right heart feature, and to detect and try to have a good assessment of the right heart and a good evaluation of the severity.

**Dr. McLaughlin:**

That's great. Thank you for bringing up that EchoRight smartphone application, which is a nice opportunity for people to practice.

Ahmed, I'm just going I'll let you have one closing comment about comparing side by side. Tell me how important you think that is and how you manage that in your practice?

**Dr. Sadek:**

Comparing the images side by side?

**Dr. McLaughlin:**

Yeah, that pretreatment, posttreatment?

**Dr. Sadek:**

Yeah, I think it's extremely powerful and sometimes I actually show it to the patients. It's very easily appreciable and it's very rewarding to see. But, you know, it really can take the place, you can see a lot on the echocardiogram, you can see the RV size coming down, the interventricular septal flattening improving, the RVOT notch improving. And in many ways, you know, when you become very well versed in echo, you can rely on that more, and less on kind of invasive right heart cath, which maybe you can do less periodically, because you're able to clearly see from one echo image to the next how things are progressing. If things aren't progressing on the echo, you don't need a right heart cath to tell you that you need to intensify the therapy. Or if your TAPSE is excellent and your RV function is normal, then you can use that from time to time to assess the patient and maybe reach for a right heart cath if something changes.

So it really helps you rely on a noninvasive and very easy thing to rely on without relying on more complicated invasive measurements.

**Dr. McLaughlin:**

So Bettia, Ahmed, those are really wonderful points. Hopefully, we'll be able to collect more systematic information on right heart function, and we'll be able to incorporate that into our objective risk tools as well. But thank you both for joining me today.

**Dr. Celestin:**

Thank you.

**Dr. Sadek:**

Thank you very much.

**Announcer:**

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