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https://reachmd.com/programs/cme/overview-of-new-ersesc-guideline-recommendations/16319/

Released: 10/31/2023
Valid until: 10/31/2024
Time needed to complete: 4h 16m

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Overview of New ERS/ESC Guideline Recommendations

Announcer:
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Dr. Channick:
The ESC/ERS guidelines are really quite an impressive document. They come out about every 5 years. You know, we have - everyone, you know - there's a lot of consensus documents, guideline documents, but this is clearly the prototypical one for PH. And, and as with all guidelines, you know, they're evidence based, but they don't, you know, mean that you have to practice this way. But they did a really good job of summarizing things.

So what I thought I would do is to summarize 113 pages, and 854 references in 12 minutes. So let's see how that goes. And I really obviously want to highlight certain things. So these are the kinds of things I'll really briefly talk about: definition, classification, diagnosis, risk, stratification, and treatment.

So you may know that hemodynamic definitions for pulmonary hypertension, pulmonary arterial hypertension, kind of change, you know, with the wind, and it seems like, over time, the threshold for what we call pulmonary hypertension has decreased to the point where, and kind of taken to an extreme, these new guidelines on the right there, now call abnormal pulmonary artery pressure greater than 20 and an abnormal PVR greater than 2 Wood units, which was the big change. They also codefined exercise PH, and you'll hear a lot more about that during our CPET session, in a little while. But this change to greater than 2, for the PVR was actually quite a big change. And, you know, those of you who have done this for awhile are probably shaking your head, you're like, ‘Well, you know, we see many people who have a PVR over 2 and under 3, and they're perfectly fine. Are we going to call them, you know, a disease?'

This is actually based on some data. So they tried to be as evidence based, and this was one of the big studies that led to this change from Brad Maron’s group where they studied thousands of basically male VA patients in a big database. You can't really see that that well. They had, you know, a lot of comorbidities. And this becomes an important issue, because when you say like, ‘Who are these patients, where they showed a PVR greater than 2 was bad?’ It was this population of patients where they went back and looked at cath data on all of these patients. And one of the powers of this study is the size, so it’s tens of thousands of patients. And basically, very briefly, what this showed is that patients who had PVR over 2 had a significant increase mortality. And especially if you coupled out with a wedge pressure less than 16, in that middle group in the middle slide, you can see the mortality difference. And that was just kind of shown dichotomized on that right, those Kaplan-Meier plots. So it did look like in a large group of VA patients that PVR over 2 Wood units was associated with increased mortality. Now, of course, that doesn't mean that those patients need to be treated, or they even should be treated. And is this a cause-and-effect thing, or just sort of an epiphenomenon of patients who have a lot of comorbidities? These are things we're debating about. But you know, I think more to come on that. And I'm happy to talk about that when we have time.

Okay, a couple of other big changes moving ahead beyond the definition, the classification system of PAH that's been around for at least a few decades, as I recall, it gets modified with every one of these meetings. And so, for instance, in this 2022 definition, they separated

out vasoreactivity - vasoresponsive from non-vasoresponsive, describing sort of two different phenotypes of idiopathic PAH. And then you can see that within Group 1, before it was like 1 prime, you had the PVOD/PCH. And again, that's just a way to make it a little more organized, that we do see patients with various forms of PAH who have features of PVD that - so I think that was a reasonable change. And then under Group 2, they've kind of cleaned it up a little bit to talk about, you know, preserved ejection fraction, reduced ejection fraction, you can read it there.

I think one thing that I was - I think is important is if you look at that sleep disorder breathing on the left, from the 2015 guidelines, that's taken out of Group 3, and now it's called hypoventilation syndrome. So that I think reflects the patients who have sleep disordered breathing who develop significant pulmonary hypertension, are usually the hypoventilators. They're not just a patient with any degree of sleep apnea. So I think that was the intent there.

And then in Groups 4 and 5, Group 5 always kind of changes because it's the miscellaneous group. And you can see there are a few small changes, calling out thrombotic microangiopathy, as well as fibrosing mediastinitis.

And, you know, this classification system is far from perfect, it's never - there's always been problems with it, but I think it still serves an important purpose in helping you think about this disease systematically.

A few comments on changes in the sort of diagnostic guidelines as it relates to echocardiography. Again, there's a lot on this slide. I think the, you know - the need has been to come up with reasonable thresholds for when one considers pulmonary hypertension, and the TR velocity still emerges as a reasonable threshold. And you can see there, the 2.8, 2.8-3.4, you can see how that will inform the likelihood of pulmonary hypertension, and may inform the need for invasive testing. So it's laid out there similarly, in the two guidelines.

I did highlight one additional indice, which is TAPSE to SPEP ratio. And that's something that one or two groups has looked at as a potentially good surrogate for RV function or coupling the RV in the pulmonary artery. And I know we don't look at that routinely; I don't know if you guys do at your institution's, look at the TAPSE to SPEP ratio. Maybe we can talk about that. I think there's some data, but it probably needs to be confirmed. But they did call it out in these guidelines as a potential thing to look for in terms of ventricular function.

The diagnostic algorithm, which was always modified, but in the 2022, I think they kind of simplified it, I don't actually agree with this whole thing, because it really dichotomized his heart and lung disease, you see at the top. And then of course, in reality, you know, we're looking at both, and the testing that you get. But I think they wanted to communicate that point that most pulmonary hypertension is due to heart and lung disease, and therefore that should be the first thing you look for.

And the other thing about the diagnostic algorithm there is this early referral to PH centers. So before you, a physician, gets into the whole detailed workup for CTEPH or causes a PAH, the idea of having referral to an expert center is highlighted in the 2022 guidelines.

Risk stratification, as you know, is an important part of assessing patients with pulmonary hypertension and following them on therapies. The changes to the risk stratification or the components of risk stratification are not great, but there are things such as a little bit of change in the threshold of BNP, for putting a patient in low, intermediate, versus high risk based on data, there's this TAPSE to SPEP ratio as maybe a way to look at adequacy of RV function, and then MRI as another way to look at RV function in much more detail.

And then the other big change is this 4-strata model, where patients who are followed up on therapy, it's suggested that you put them into 1 of 4 categories, because on treatment, so many patients still fall into the intermediate-risk category. And it's a very broad group. And so the concept was to try to break that out even further by going low and high or intermediate based on those thresholds you can see in the various parameters. So that's in the guidelines, they recommend the 4-strata model in follow-up. And this is that treatment algorithm. So this was the 2022 versus 2015.

I think the focus for treatment of pulmonary hypertension, and you'll hear a little bit more about this in the sessions, really is on getting patients to low risk, adjusting treatment as needed, with a couple of big changes in this most recent algorithm. The first one is this calling out of comorbidities. And so you can see there that most patients, as you well know, we start on combination therapies for PAH upfront. But there is a percentage of patients who we don't do that. And these other patients possibly have some of those comorbidities, that may require a little more caution with therapy, and I'll talk about that in just a second.

The other big change is at the bottom of the slide where we have the option to switch patients to, you know, from between a PDE5 inhibitor and guanylate cyclase stimulator. So that is an option there at the bottom. So, again, this algorithm talks more about classes of drugs and overall approach to treatment. And there's been some small changes.

So the comorbidities, I think, is an important thing to talk briefly about because that's becoming more important, and again, called out in these particular guidelines. And within the group of patients who we classify as Group 1, certainly seeing some registries, so these patients are getting older, that average age 60. And a significant number of patients who have some degree of left heart disease or who fit that phenotype, or have what we call the cardiopulmonary phenotype. And you'll hear, you know, probably a little bit more about this

in some of the other sessions. But these are groups of patients in whom, you know, they don't fit the neat criteria of Group 1. And the registries have shown those patients. And this is the group that was really called out as a group we need to be cautious with, because they don't respond the same to therapy. And these are patients where we may just want to start one drug and be very cautious, these more complicated patients. So, you know, the only problem with this, and this has been debated about this concept that patients with comorbidities should only get one therapy, is that one size doesn't fit all, right? I mean, if you have a 45-year-old woman with scleroderma and PAH, who has a little bit of hypertension and diabetes, well, those are comorbidities. But that patient really should not be treated any differently than any other patient with Group 1 PAH, as opposed to the 70-year-old or 75-year-old person who has, you know, atrial fibrillation, uncontrolled hypertension, and sleep apnea. So, within the comorbidities, even though it's in that algorithm, we need to be a little more individualized.

I'm not going to say much about lung disease, or Group 3, but the guidelines did talk nicely about how we distinguish the severity of pulmonary hypertension in patients with lung disease. In the session on lung disease, we'll go into that a lot more. And then there were a few updates to the CTEPH. Not, not a lot. It's still, as you'll hear the V/Q scan as the screening test, and then confirmatory testing. And then for treatment of CTEPH, the option of both medical therapy and balloon angioplasty in patients who aren't surgical candidates. So, and again, you'll hear more about that in our next session after Dr. Saggar's talk.

So new definition is controversial for sure. The clinical classification system just continues the diagnostic algorithm, has focused itself a little bit more, a little more emphasis on RV function, and the treatment algorithm obviously is expanding, and as we go on, will continue to expand.

So with that, I thank you for your attention and I'll turn it over to Dr. Saggar.

Announcer:
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