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Released: 07/29/2022

Valid until: 07/29/2023

Time needed to complete: 1h 16m

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Roles of the Pulmonologist and Cardiologist at the PH Center: Confirming the Diagnosis

Announcer:

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Dr. Krasuski:

Roles of the pulmonologist and cardiologist at the PH center, confirming the diagnosis. The hemodynamic evaluation of suspected pulmonary hypertension is very important and it's still the only validated method to confirm and grade pulmonary hypertension and should be best performed at a PH center. Even patients with a mean PA pressure less than 20 millimeters of mercury or a mean PA pressure between 21 and 24 at rest, can still develop pulmonary hypertension during exercise. Something that we refer to as exercise-induced pulmonary hypertension. Screening and referral of connective tissue disease, especially systemic sclerosis patients to a PH center may allow the use of cardiopulmonary exercise testing that can uncover latent pulmonary arterial hypertension. Use of exercise, hemodynamic measurements in symptomatic patients with perfusion defects, and normal resting mean PA pressure can reveal the presence of abnormal cardiodynamic responses to effort. Especially patients with chronic clots, like in chronic thromboembolic pulmonary hypertension. For all these reasons, hemodynamic evaluations suspected PH is best performed at a PH center.

Recommendations for right heart catheterization for systemic sclerosis and scleroderma spectrum disorders. So, when you're assessing a patient to determine whether they should have a heart catheterization or not, there are really three things that you're thinking about. Are they symptomatic? And then, when they've had an echocardiogram and pulmonary function tests, how to incorporate these here. So, if the patient is symptomatic and has a TR velocity between 2.5 to 2.8 meters per second, that's sufficient for heart catheterization. On the other hand, if they're asymptomatic, you're looking at a greater threshold here. 2.8 meters per second, or greater.

Now, if they have RA or RV enlargement, there again, you don't even have to have that pressure elevation. That is somebody ideally, even if their asymptomatic, should have a heart catheterization. With pulmonary function testing, if they're symptomatic and they have a FVC to DLco ratio greater than 1.6, and or, a DLco less than 60% predicted, they should undergo catheterization. If they're not symptomatic, then you ideally want to measure NT-proBNP as well. And if that's twofold of the upper limits of normal, then proceed to catheterization. And again, a composite measure here, you want to meet the detect algorithm in patients with a DLco less than 60% predicted and a disease duration less than three years, even without symptoms, that is somebody that should undergo a catheterization. Here again, we're trying to maximize our sensitivity and also our specificity for patients that have pulmonary arterial disease.

Essentials of PAH diagnosis right heart catheterization. So, this is part three of the diagnostic algorithm. Again, is a heart catheterization. This allows us to confirm the diagnosis. We want to calculate the pulmonary vascular resistance. We want to be able to guide therapy for pulmonary arterial hypertension, exclude other causes of pulmonary hypertension. I personally believe that every patient undergoing their initial catheterization for pulmonary hypertension should have a careful shunt run to exclude the possibility of intracardiac or extracardiac shunts. Other thing you should look at very carefully here is the pulmonary capillary wedge pressure. It is in fact, probably the most important measure and the most challenging measure in some of these patients with pulmonary hypertension to obtain. So, you want to make sure that that is very carefully collected. If in fact, you don't have a pressure that you trust, you should go

into the left ventricle and measure a left ventricular and diastolic pressure. And then you're going to look at measures that look at the degree of right ventricular dysfunction. Things such as the right atrial pressure and the cardiac output calculation.

Now hemodynamic values in terms of assessing the severity of risk for the patient. and during heart catheterization, really are three things we're looking at here by the ESC and ERS guidelines, the right atrial pressure, the cardiac index, and the mixed venous saturation. And you can see if the right atrial pressure is low, the index is high. and the mixed venous saturation is good, that's somebody who is going to fall into the lower function classes or the normal function classes. As the function classes get worse, the RA pressure tends to increase, the cardiac index starts to drop and the mixed venous saturation start to drop as well.

Announcer:

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