Transcript Details

This is a transcript of a continuing medical education (CME) activity. Additional media formats for the activity and full activity details (including sponsor and supporter, disclosures, and instructions for claiming credit) are available by visiting:
https://reachmd.com/programs/cme/case-applying-the-detect-screening-algorithm/15566/

Time needed to complete: 1h 51m

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Case: Applying the DETECT Screening Algorithm

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

Prior to beginning the activity, please be sure to review the faculty and commercial support disclosure statements as well as the learning objectives.

Dr. Khanna:
So hello everyone, my name is Dinesh Khanna. I'm a Rheumatologist and Professor of Medicine and Director of industrial Michigan Scleroderma Program. Today I'm going to highlight applying the DETECT screening algorithm in a patient with systemic sclerosis.

So this is a 62-year-old female who comes to me with 16 years of limited cutaneous systemic sclerosis. She has anti-centromere antibody on the right, and I'm showing you Raynaud's phenomenon, digital ulcers, and a slide from American College of Rheumatology showing quite a bit of telangiectasias on her face. She comes on an annual basis. She has ongoing Raynaud's phenomenon and recurrent digital ulcers. She denies any symptoms of pulmonary hypertension such as shortness of breath with exertion, but she has significant osteoarthritis. So in an older patient who has other comorbidities, we have to carefully evaluate for symptomatology suggestive of pulmonary hypertension. She has a past medical history of hypertension, knee osteoarthritis that is quite severe, Raynaud's phenomenon, and ILD or lung fibrosis diagnosis in 2014.

And here is her high-resolution CT of the chest that was done in 2014, which shows minimal interstitial lung disease with increased ground-glass opacity, and increased interstitial markings, as shown on the slide. Her medications include amlodipine, Lisinopril 40 milligrams daily, as-needed Tylenol, and omeprazole. Her vitals are rather stable. Except for significant knee osteoarthritis, she has some evidence of digital pitting scars, and significant Raynaud's phenomenon with mild skin thickening and telangiectasias on her face and her hands.

This is her EKG. And just to highlight, the EKG did not show any evidence of right axis deviation that would raise alarms for pulmonary vascular disease or pulmonary arterial hypertension. So DETECT algorithm. It is a standardized way to screen your patient on an annual basis, there are two steps. Step 1, that includes 6 non-echocardiographic variables, and step 2, that have to echocardiographic variables that will determine whether the patient should be referred for right heart cath or not. DETECT is available as an app. So I think it's very important to highlight it's available as an app and you can download it. And I will go over how I address and institute DETECT in my clinical practice.

Once we have the pulmonary function tests, you look at the PFT and FVC to DLCO ratio, you know whether on clinical examination the patient had telangiectasia, her antibody status, or NT-proBNP, serum uric acid if you did it, and presence of right axis deviation. In this case, echocardiogram is recommended. But there are cases where echocardiogram is not needed based on the step 1, and you're done with that annual screening process for that year. We add the echocardiographic variables including the TR velocity of 2.06, a right atrial area of 13. And in 2014, when we did this, a right heart cath was not recommended. Now, as I said, we do this on annual basis and the patient started to follow me in 2014. And you can see over the years, I've been doing a DETECT algorithm almost on an annual basis. There was a year in 2019 when the patient did not come for follow-up. I show you the different parameters, and one thing I want to highlight is that the diffusion capacity has been slowly declining over the past 6 years, NT-proBNP has been slowly going up over this

time.

So she comes in 2020, we do her pulmonary function tests with the forced vital capacity of 78%, a disproportionate decline in DLCO. HRCT continues to show mild interstitial lung disease with 6% involvement. A normal NT-proBNP based on University of Michigan upper limit of normal, and an echocardiogram showing a TRjet of 2.76 meter per second. And an estimated right ventricular systolic pressure of 34 millimeter of mercury, good ventricular function and size both of left and right ventricles.

So we look at the DETECT algorithm, and I walked through the step 1 on a DETECT app, the echocardiogram is recommended, as it has been over the past 6 years or so. And when you look at the step 2, because of a decline in her diffusion capacity that is disproportionate, somewhat increase in the NT-proBNP, and a trend towards increasing her estimated right ventricular systolic pressure, a right heart cath is now recommended. The patient undergoes a right heart cath, which is consistent with precapillary pulmonary hypertension, or a Group 1 pulmonary hypertension.

Now I want to talk about the 2022 ERS/ESC guidelines on the revised hemodynamic definitions of pulmonary arterial hypertension. The new definition of pulmonary hypertension is a mean PAP of greater than 20 millimeters of mercury and a precapillary pulmonary hypertension with a PVR of greater than 2 Woods unit and a wedge of less than or equal to 15 millimeter of mercury.

And in fact, if you look at this slide, this will have a very large impact on the reclassification of pulmonary hypertension and systemic sclerosis. On the left are University of Michigan cohort that we published in *European Respiratory Journal* in 2019. And if you look at the reclassification of patients with a mean PAP of greater than 20, but a PVR of greater than 2, we reclassify approximately 25 to 29% of the patients that were not classified hemodynamically as pulmonary arterial hypertension. On the right is our DETECT cohort, 36 patients with a mean PAP of 21 to 24. And again, if you look at a PVR, between 2 to 3, or greater than 2, you have a substantial number, more than half the patients who are now classified as pulmonary arterial hypertension.

I want to end my talk discussing the multidisciplinary care that is very, very important in this patient population. My role as a rheumatologist is to screen, manage the multisystem disease, provide effective communication both with the primary care doctor and the pulmonary hypertension experts. I'm fortunate to work with a cardiologist and a team of pulmonary hypertension colleagues who provide the right heart cath and the management. But let's not forget the role of a social worker. Let's not forget the role of a psychologist, a physical therapist, and the other team members who really provide excellent multidisciplinary care to this patient population.

So in conclusion, all patients with systemic sclerosis should be screened annually for pulmonary arterial hypertension. That 2022 ESC/ERS guidelines recommend multi-modality measures including the DETECT algorithm. All patients with scleroderma preferably should be referred to expert pulmonary hypertension centers. And finally, in patients with pulmonary arterial hypertension, associated with connective tissue disease, the same treatment algorithm is valid as for patients with IPAH.

Thank you very much for your attention.

Announcer:
You have been listening to CME on ReachMD. This activity is jointly provided by Global Learning Collaborative (GLC) and TotalCME, Inc. and is part of our MinuteCME curriculum.

To receive your free CME credit, or to download this activity, go to ReachMD.com/CME. Thank you for listening.