Transcript Details

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Pulmonary Hypertension in COPD: Insights into Diagnosis and Treatment

Announcer:
You're listening to *Clinician's Roundtable* on ReachMD. On this episode, Dr. Arun Jose will discuss pulmonary hypertension in COPD. Dr. Jose is the Director of Pulmonary Hypertension at the Cincinnati VA Medical Center and an Associate Professor at the University of Cincinnati Division of Pulmonary, Critical Care, and Sleep Medicine. Here is Dr. Jose now.

Dr. Jose:
So what is the pathophysiology of pulmonary hypertension in COPD? Mostly, it's multifactorial. Certainly, there is an element of inflammation that plays a role. There's likely some vascular destruction that occurs both from parenchymal lung destruction from things like emphysema as well as the overall destructive components of chronic bronchitis, and there is likely a component of vasoconstriction that occurs from both hypoxemia and hypercapnia that are prevalent in the COPD population. So a lot of the pathophysiological mechanisms are similar to those that occur in pulmonary arterial hypertension with some additional flavor unique to the COPD population.

So diagnosis of pulmonary hypertension in COPD relies on the same sort of tools that are employed in pulmonary arterial hypertension, so transthoracic echocardiography is generally your main screening tool for pulmonary vascular disease. In certain cases, abnormalities on pulmonary function testing, such as an isolated or out-of-proportion low DLCO, can help clue you in that there might be comorbid pulmonary hypertension present, and ultimately, these will lead you to determine whether or not you should undergo a right heart catheterization to confirm the diagnosis of pulmonary hypertension and also quantify it.

The clinical trial landscape in pulmonary hypertension due to COPD is limited. However, there are a couple of key pivotal trials that are important. The more recent PERFECT trial, which studied inhaled treprostinil in pulmonary hypertension with COPD, is important because that trial did not only show no benefit in the treated population, but it was also stopped early due to an increased risk of adverse events, such as exacerbations in hospitalizations in the patient population; so for that reason, we generally shy away from using inhaled treprostinil in patients with COPD and PH.

The other trial that may be of benefit is the SPHERIC-1 randomized controlled trial, which looked at the phosphodiesterase 5 inhibitor sildenafil in patients with COPD and PH, and this is notable because although it was a small population, they did have an improvement in pulmonary vascular disease severity, such as pulmonary vascular resistance in cardiac index as well as an improvement of dyspnea and diffusion capacity. And that sort of improvement in benefit with PDE5 inhibitors in PH/COPD patients has also been replicated in large registry analyses, such as COMPERA, ASPIRE and GoDeep, as well as meta-analyses of multiple case series in small studies suggesting that there's a benefit of PDE5 inhibitor medication on both survival and pulmonary vascular disease severity in COPD with PH.

As far as additional things to know in PH with COPD, it is fairly prevalent, and it has both a pulmonary parenchymal and a pulmonary vascular component. So although the presence of COPD and PH is fairly common—upwards of 80-plus percent depending on the studies you look at—the presence of severe pulmonary hypertension in COPD/PH is much lower. So some people will have a mild element of pulmonary hypertension and their COPD is more predominant, and then treatment should be directed towards mostly the COPD. In other patients with more of a pulmonary vascular phenotype, their PH seems to be the mainstay of their disease out of proportion to the level of COPD that they have. In that case, treatment becomes more nuanced, and consideration for pulmonary hypertension-targeted therapy should be considered.

Announcer:
That was Dr. Arun Jose talking about pulmonary hypertension in COPD. To access this and other episodes in our series, visit *Clinician's Roundtable* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!