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Exploring COPD Exacerbations Through the Lens of a Patient Case

Announcer:
Welcome to *Deep Breaths: Updates from CHEST* on ReachMD. This is a non-promotional, non-CME disease state educational program brought to you by CHEST in collaboration with and sponsored by GSK.

Dr. Christenson:
Welcome to *Deep Breaths: Updates from CHEST* on ReachMD. I'm Dr. Stephanie Christenson. I'm an Associate Professor at the University of California San Francisco, where I'm also a pulmonary and critical care physician. And joining me to explore guideline-based management for patients with COPD is Dr. Ron Balkissoon. Welcome.

Dr. Balkissoon:
Thanks, Dr. Christenson. It's a pleasure to join you again. Welcome everyone. My name's Ron Balkissoon, and I am a staff physician at National Jewish Health in Denver, one of the pulmonologists on staff and I'm just delighted to be able to join you and talk about COPD and the impact of exacerbation. So, thanks for allowing me to join you today.

Dr. Christenson:
Alright, so let's get started with some background. Dr. Balkissoon, can you tell us about the burden of COPD on our patients?

Dr. Balkissoon:
Well, COPD is a major healthcare problem, not only in the United States, but really globally. If you look at 2017, 299 million people suffered from COPD (1,2), and it's the fourth leading cause of death in the United States as of 2019 (3), and third leading cause globally. (4) In addition to that, we know that patients who have COPD exacerbations have significant impacts on their health status. (1) Obviously, this can lead to problems with hospitalizations. This contributes to disease progression, and also just significant costs to the healthcare system. In addition to that, patients will develop significant problems with symptoms, their primary symptom often is dyspnea. But they also can have chronic cough and sputum production. A number of those patients, one of the things that patients fear the most is having to end up on supplemental oxygen, which becomes a significant issue for some of them as well. These sorts of things impact your ability to work, where 24 percent to 52 percent of patients may be unable to work (1,5,6). And obviously all of these put together, we know that there are significant impacts on patient's quality of life as a result of these various factors.

Dr. Christenson:
Alright. So how about next we talk about COPD exacerbations, which we certainly know are very important for our COPD patients' health. What are some of the risk factors for COPD exacerbations? And then what about the consequences these have on our patients?

Dr. Balkissoon:
Sure, well, we actually, I think, recognize that there are a number of risk factors that can increase the likelihood of people developing COPD exacerbations. And perhaps the most common one or the most important one is a history of previous exacerbations is probably the strongest predictor. (1,7) In addition to that, if patients have had recent hospitalization, that's the greatest risk factor for hospitalizations as well. (1,7) And if they have significant comorbidities like cardiovascular disease, which I cannot overemphasize the association between patients who smoke and develop COPD are also at increased risk for developing significant cardiovascular-related comorbidities, whether it's MIs or strokes, etc., that that's important to appreciate,

There are a number of very significant consequences that we need to worry about. Obviously, we know that the patients who have COPD are at significant increased risk of having significant mortality. (1) And there are these increases in cardiovascular-related events,

again, whether it's MIs or strokes, this is a very big factor. (8) When you look at all-cause mortality for patients who have COPD, a significant amount of the mortality is related to cardiovascular events, as much as it is to respiratory events.

There's also that increased risk of recurrent exacerbations that people have to be worried about. (1) We also know that it portends people developing significant problems with poor quality of life. And we see this significant decline in lung function with these recurrent exacerbations. We know that this is associated with increased airway inflammation, and there are the consequent increases in costs associated with treating patients who have COPD, as well.

Dr. Christenson:
On that note, how about we get into treatment? And I think we were thinking of discussing this really in terms of a patient case. For those of you just tuning in, you're listening to *Deep Breaths: Updates from CHEST* on ReachMD. I'm your host Dr. Stephanie Christenson, and today I'm joined by Dr. Ron Balkissoon to discuss COPD exacerbations.

And let's dive into this further through the lens of a patient case. So, Dr. Balkissoon, I'm going to give you a patient case and I'm going to ask you about their pharmacotherapy and what we should do to change it. Let's discuss Pam. And Pam is a 63-year-old. She was diagnosed with COPD 5 years ago. She does have a pretty substantial smoking history, 43 pack years although, she was able to quit two years ago, not an easy feat. Her FEV1 to FVC ratio is 0.55, so certainly has some obstruction. She has a post bronchodilator FEV1 percent predicted of 54 percent. So again, consistent with that obstruction. She has a history of high blood pressure and gastroesophageal reflux disease. She does have dyspnea with just minimal exertion. She is currently using an inhaled corticosteroid long-acting beta agonist combo inhaler daily and short-acting beta agonist two to three times per day. So is symptomatic enough that she is using that short-acting inhaler two to three times daily. She had an exacerbation six months ago, which required a trip to the urgent care clinic, and she was also treated with antibiotics and oral corticosteroids for five days on that trip. And so now she's coming back for two weeks after a similar exacerbation. So, this would be, it sounds like, her second exacerbation that at least required her to seek medical care in the past six months. So, Dr. Balkissoon, can you give us a little idea about her risk factors for COPD exacerbations?

Dr. Balkissoon:
Well, she actually has a number of risk factors for having future exacerbations. I mean, first and foremost, the fact that she's had two exacerbations in the past six months portends an increased likelihood that she's going to have a future exacerbation as well. (1) And the fact that she continues to be symptomatic despite the fact that she's been on ICS-LABA is predictive of her having a future exacerbation. (1) She has very low lung function, another predictor. (1) Her FEV1/FVC ratio is 55 percent. Presumably that's the post bronchodilator value. And the post bronchodilator FEV1 is 54 percent of predicted. So, these increase her risk as well. And then the fact that she has significant comorbidities including hypertension and gastroesophageal reflux disease, these also can increase the risks of her having future exacerbations. (1)

So, she has several of the issues that we have previously discussed, that increase the risk of her having future exacerbations. One of the big things in terms of not just exacerbations, but her overall outcome is, as you pointed out, fortunately, she was able to stop smoking.

Dr. Christenson:
So, given that, how would you adjust her pharmacotherapy, realizing that initially she was on a daily inhaled corticosteroid long-acting beta agonist, combo therapy inhaler, and short-acting beta agonist?

Dr. Balkissoon:
If you look at the GOLD Guidelines in particular, we know that they point to us trying to look at treatable traits. (1) And the two major categories for this are looking at the ability to relieve symptoms and the ability to have an impact on reducing exacerbations. (1)

So really, the question here is, are we going to look at is this someone that we would think about using just LABA/LAMA in? Or do we think that we would actually consider adding a LAMA to her therapy so that she would be on triple therapy ICS-LABA/LAMA? And I think in this particular scenario, where she is actually having ongoing symptoms, where you might get the additional symptomatic relief by perhaps having impacts on lung function by adding the LAMA is important. (1) And I don't see major concerns about in terms of side effects and stuff of the inhaled corticosteroids. She is having ongoing exacerbations. And I think that she would benefit from considering a trial of triple therapy with ICS-LABA/LAMA at this point. (1) And obviously, she needs to go through an iterative process of looking at making sure that she's adhering to using the drugs at the proper interval, has the right technique, and reassessing, you know, again, the potential side effects related to these medicines. (1) She has cardiovascular comorbidity, and the beta agonist component can often exacerbate these issues. So, these are very important elements that we need to take into consideration as well.

Dr. Christenson:

Are there any other guideline-based recommendations?

Dr. Balkissoon:
Well, I don't know to what extent we really went back to trying to look at their adherence to their medicines and making sure that they know how to take them, they're taking them at the right intervals for us to reevaluate whether or not they might be better suited by formulation that is twice a day or once a day or more frequently, depending on a host of different factors. (1) So, I think re-evaluating the actual medicines that they're on is important. And then making sure that there is the whole check on adherence and being able to do proper technique. (1) Those are really key elements as well, which I think we already discussed in some degree. But other than that, I think we've covered the majority of them unless you had some others that you were thinking of.

Dr. Christenson:
I wanted to really second your opinion about making sure adherence and making sure they're on the right medication, and that they're using it appropriately is so important that when I get referred a patient from primary care or one of my colleagues, that is one of the first things I'm looking at. And it is often the answer for many patients, that we just need to get them taking their medication, or taking it appropriately, or get a better medication for them. So, I think that is such an important point. And really kind of working with the patients shared decision-making, making sure that we're all on the same page, and that they understand their disease and understand their medications. And sometimes that takes more than one visit to really not just get them optimized but get us all on the same page get them educated on those inhalers and on their treatment plan. What does an exacerbation even look like? When should they come in and ask for help? Because some of those things can be really important in making sure that we're getting them optimized.

Dr. Balkissoon:
Yeah, I think your last point, especially about recognizing exacerbations is incredibly important. But to that, I think also helping them to understand that their symptoms might be related to their COPD, and it's not just that they're getting old or they're out of shape, or you know, because they have ongoing smoking. (1) So, making them aware of how many of their symptoms that they may be attributing to things other than their smoking and their COPD, also hopefully helps with adherence and helping them understand the benefit of being on the medicines, not to mention the dire consequences of starting on that slippery slope of having exacerbations.

Dr. Christenson:
That is so true. So yes, I agree that just that patient education piece on what this looks like and what we can do to help. Because a lot of our medications really can help them as can better exercise pulmonary rehab, making sure they're vaccinated. (1) All of those things can really help them live their best kind of quality of life and hopefully even decrease mortality in certain cases.

Well, with those important considerations in mind, I want to thank my guest, Dr. Ron Balkissoon, for joining me to discuss guideline-based management for COPD Dr. Balkissoon, it was so great speaking with you.

Dr. Balkissoon:
Always a pleasure working with you.

Announcer:
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