

Getting the Complicated Asthmatic Under Control

Transcript Details

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Dr. Domino:

Welcome, you're listening to Pri-Med's new podcast series, Frankly Speaking. I'm your host, Frank Domino. I'm a family physician at the University of Massachusetts Medical School, here in Worcester, Massachusetts. The theme of each week will be focused on a primary care topic, and along with my guests we'll discuss what's latest in the news, what late publications are out there that's changing your practice, and discuss practice guidelines. Joining me today is my colleague Robert Baldor, who is professor and Senior Vice Chair in the Department of Family Medicine and Community Health at the University of Massachusetts Medical School and Editor of Baldor's Family Medicine Board review. Welcome to the show, Bob.

Dr. Baldor:

Hey thanks, Frank, pleasure to be here.

Dr. Domino:

Our topic for today is to discuss management of asthma. In our earlier podcast we discussed some of the issues about classification and patho-physiology of the disease. Today we're going to focus much more on management. So Bob, before we talk about which drugs to use and when to become very aggressive in care, can you tell me a bit about how we go about diagnosing asthma?

Dr. Baldor:

Thanks Frank, I think that's a good question. So, we often see children at a younger age that don't have... When you think of asthma by the way, asthma is a disease of bronchospasm, you have inflammation in the airways, and so you spasm in the airways, you get air trapping, it's hard to get the air out, and so as you breath to get the air out, you hear wheezing. And that's what causes the wheeze. So you think if somebody is wheezing they must have asthma. Well, there are other reasons for wheezing, and so really what you want to do... The other diagnostic criteria for asthma is that it's reversible bronchospasm, that there's a reversibility to it. So the best way to do that is to send somebody for a pulmonary function test. And the pulmonary function test really need to include a component of broncho challenge. And methacholine is most commonly used, so they'll test the ability to breathe, give somebody methacholine, see that you actually are causing bronchoconstriction, see a decrease in your FEV1, give a reversal agent, like a beta-agonist and see that it reverses and the FEV1 comes back to normal. So really full pulmonary function tests are what you need.

Now one of the issues of course is, we see a lot of children. And children often, particularly the younger they are, are not necessarily wheezing. They may just be coughing, as part of it. And you cannot get children at a young age to do a pulmonary function test. Actually I don't know if you've ever had pulmonary function test yourself, I went through this myself a couple of years ago, and it's not an easy test to do, to be able to comply with the testing and to go through with all of that. So it's not as simple as just doing a blood test. A lot of folks say you really can't diagnose asthma in a child less than four, that you can talk about the fact that they wheeze or that they have some bronchospasm, but to label a child with asthma at a younger age is a little difficult, until you've actually been able to do that formal pulmonary function test with the methacholine challenge.

Dr. Domino:

So, with older children and adults, those are the folks you might want to consider for pulmonary function testing, and otherwise it sounds like it's a clinical diagnosis.

Dr. Baldor:

No, I would say, you have your clinical suspicion but you really should do the formal testing at least once on somebody to confirm that diagnosis. Certainly, if you have somebody later on in life who's having some wheezing, it could be that they're coming down with COPD, obstructive pulmonary disease. Again I always look at a lot of factors: Are they a smoker, or not? Do they have underlying allergies, what's going on? And so it's not... I really think you need to be doing the pulmonary function testing. The other part of this is, once you do confirm the diagnosis of asthma, individuals should really have their own peak-flow. And so part of this is to do their own peak-flow testing to understand and appreciate what their peak-flow is, their best peak-flow. Because then that's part of management later on. When they come in, you should be doing test peak-flow in the office, they can be doing it at home, to sort of see, what degree, what percent of their best are they. And that helps to figure out what your therapy is and how compromised they are when they come in.

Dr. Domino:

At what age do you think then we should be trying to get a peak-flow meter? In the past we've said around 12 or 13. Do you think a 12 year old or a 13 year old could be able to comply with a pulmonary function test?

Dr. Baldor:

Well, there's two pieces of your question. One, to be able to go through the formal pulmonary function test you probably are looking at teen, 12-13, to be able to do that. But I think for a peak-flow meter you can actually be younger than that. So peak-flow meters, that's just a handheld device you're... You're just blowing into the thing. And probably, a child down to six, eight, can probably use those devices, where they may not be able to go through the whole formal testing,

but they'll be able to use that device. It's kind of a fun thing for kids to do, it's blow, there's this bright little lever that goes up to see how high up it can go, and these are often color-coded with red, yellow and green. And I think probably, certainly by age eight you should be fine with that, yeah.

Dr. Domino:

Okay, so it sounds like, once you've made the diagnosis of asthma, there's a fairly well evidence-based set of guidelines around how we go about treating it. Can you take us through that, please?

Dr. Baldor:

Yes. What we're really talking about here is making a determination whether people have the right intermittent asthma where they have symptoms only less than a couple times a week, or they have symptoms more than that. They're having symptoms using their rescue inhaler more than a couple times a week or waking up at night more than a couple times a month, that's persistent. And then within that, the classification is to say, "Okay you've crossed that threshold from intermittent asthma, where you're just prescribing and using a rescue inhaler, so that's an inhaled beta agonist, albuterol, to be using then persistent, we need to use preventive therapy, that's inhaled corticosteroid." That really is the foundation of treating individuals with persistent asthma. Now as you go down that cascade from having mild to moderate, to severe persistent asthma, you need to then think about adding on more agents. There's really a nice step therapy that's broken out as to what you would add on. Again, you get somebody with a base line inhaled corticosteroid and they're still having symptoms. That moves them up then saying, "You need to add more treatment." And there's a host of things that you can add.

At that point you could add a long acting beta agonist. You never want to prescribe a long acting beta agonist with somebody who's not already on a long acting corticosteroid. When these long acting beta agonists came out we began using them, we thought these were great agents to have for people with asthma. Turns out higher morbidity and mortality from folks that are just

using a long acting beta agonist without the corticosteroid. The reason for that is, is that even though what we're seeing here is the bronchospasm and the wheezing, and that the beta agonist will counteract the bronchospasm, it does nothing to the underlying pathophysiology that's causing this, and that's the inflammation. People who are using long acting beta agonists solely would then get into trouble on that, well they're already maximally bronchodilated, there's nothing more you could do. But they probably had maximum inflammation at that point, it was too late to attack the inflammation, so there's that piece of it.

Dr. Domino:

Okay, step one, beta agonist, short acting. Step two, an inhaled corticosteroid. Step three, add on a long acting beta agonist. What happens to those unfortunate folks who have really severe asthma and aren't well controlled with those three steps?

Dr. Baldor:

The other alternative for step three though is actually rather than adding on a long acting beta agonist, is just increasing the dose of the inhaled corticosteroid. You could go from a low, medium, or high dose corticosteroid. Step four though, it really then is a medium dose inhaled corticosteroid with a long acting beta agonist. They definitely need to be on that at that point. You could though, alternatives here are to use the leukotriene receptor antagonist, for people to use those. And I think as we get into some of this, it's trying to understand the role of allergy and whether people who have had more problems with allergic triggers for their asthma, they'll do better with these type of agents as part of it. People continue to get worse, you go along, you use high dose corticosteroids and really thinking more about your treatment. I will tell though, when I have patients that aren't responding to this, this is when I refer to the pulmonologist. And there's lots of different therapies that can be used to really get their expertise involved. I also work a lot though on, we didn't talk about this, but what's going on for triggers, having them look at what's going on in their household. Whether it's smoking, whether there's environmental allergens that are out there, that are causing it, pets in the house, things like that, that one needs to be thinking about.

Dr. Domino:

Okay, that's terrific. When should we be thinking about nebulizers and what are the challenges with them? And what are the solutions around those challenges?

Dr. Baldor:

Great questions. I saw two patients yesterday, interestingly enough, didn't come in for their asthma but just came up. One patient wanted a nebulizer, she was convinced that the nebulizer is what she needed for her asthma, and her insurance wouldn't cover it. And I was saying, "Well, you know, you do okay with that hand held inhaler. Why do you think you need a nebulizer?" For some people... You have to be coordinated to use the inhaler. You have to breath out and breath in and pump it at the same time, and you want to inhale the medication, you don't want to just deposit it on your oropharynx. People who struggle with that coordination... And you know me, Frank, I'm not the most coordinated person in the world, thank goodness I don't have asthma or I would be squirting it all over the place. So that's where the spacers come in, and I prescribe a lot of spacers. I do these for children all the time, I have them use a spacer. But I do it for a lot of adults as well who are concerned about that. The spacers are great, it helps to decrease the need to be quite as coordinated with your pumping and your breathing.

Then you get the nebulizers. Nebulizers are used a lot in children, again because of the coordination piece of it. I think nebulizers can be really helpful while people are having an attack, because you're sitting there, you're actually breathing in the medication over time, it's a 10 or 15 minute therapy. And probably what's happened for a lot of patients, they come into my office or your office and their having an exacerbation, what do we do? We don't say, "Use your inhaler," we go get our nebulizer. So they equate the nebulizer to being stronger, better therapy than the handheld pump. Quite frankly, it's not. Studies have shown that the handheld pump is just as effective as the nebulizer.

I try to educate the patients about that and I get them a spacer, have them use that. And for somebody though, who has pretty severe asthma, and having lots of exacerbations, they do seem to do better, even though the data doesn't necessarily show that. I think it's probably anxiety, is a piece of this. Interestingly I have one of my patients, comes in, along with giving her a nebulizer, I give her a little benzodiazepine at the same time, because she gets so anxious with her breathing it makes it worse, as part of this. So again, asthma, whether it's bronchospasm, the problem is getting air out. It's not getting air in so much. Using the inhaler, you're breathing in, you're breathing the medication in and that shouldn't necessarily be that big a barrier for them.

Dr. Domino:

I totally agree. There's great systematic review data showing that spacers or holding chambers are as effective at controlling asthma symptoms and preventing adverse outcomes than nebulizers, with far less morbidity as... If you've ever seen anyone who's used the beta agonist delivered by a nebulizer, they can often become quite jittery, have some nausea, and in children, vomiting. And that is totally eliminated with the use of the holding chambers. Alright, so you've got your patient. You're treating them, they're having their acute exacerbation. When should they be going home on what medicines? In particular, who needs an antibiotic and who doesn't?

Dr. Baldor:

Yes, so before answering that particular, I do want to say that underlying asthma is inflammation. And so, this is a role for oral or systemic corticosteroids. Somebody come in with an acute exacerbation, I'm going to put them on oral corticosteroids. And it turns out how long they need to be on these? Probably three days is sufficient. We're seeing more data out there saying we don't need to be doing longer courses, we don't need to be tapering people on the corticosteroids. The data probably shows that three days is okay. I'm feeling uncomfortable with that myself, so I use five days. But three to five days are really okay. You mentioned antibiotics, and obviously we know there's a problem in this country with over prescribing antibiotics for respiratory issues.

Most respiratory infections are viral in nature that we're seeing in primary care, and antibiotics aren't going to help them. So there's been some question though as to, "Are infections triggering asthma? Should we be thinking about antibiotics for that?" And some of this actually came out of a study that was done here a couple of years ago, looking at macrolides. And this was the TELECAST study. And it did show that individuals who are being treated with the... In TELECAST, they used telithromycin. And the trouble is, it's really limited to be able to use because they had a lot of problems with adverse reactions and liver toxicity. And so, you know, you say, "Why would..." Obviously, there's the idea that you're using this macrolide here to treat some common respiratory pathogens. That would make sense.

But also, apparently macrolides have some sort of an anti-inflammatory effect. So this study was followed up, this was just published here. The AZALEA study came out, where they looked at the risks, they actually did a randomized clinical control trial, using azithromycin here. And again, this was just published in JAMA last month, in November here in 2016, saying, "Let's go ahead and put people on azithromycin who came with an acute asthma attack." Now, key to this is, all of the patients that came in were also on a corticosteroid as well. They found no difference in benefit on those treated with azithromycin versus those that weren't treated. I'm really saying, this really leads to more evidence of not having any benefit, but just randomly putting people on this. However, they did testing though in these studies, to look at and say, "Well, the people have agents that would respond to an antibiotic."

And in this study 5% of them, only 5% though, did test positive for chlamydia, mycoplasma, and so on. And so, there's a little bit of this that says, "Gee, I think we're going to continue to see an evolution around more point of care testing for people coming into the office, whether it's asthma or other respiratory infections to say, 'Hmm, do we know that this is a bacterial agent or not?'" And there may be a role for an antibiotic. And in this case less than 5% of those coming in with an acute exacerbation. So my practices still leads me, this is to say, "I don't have those point of care testing now. Do I think that there's a bacterial process underlying this that's part of this?"

Clinical judgement is really poor on this. But still somebody coming in, and you're trying to tease this up. I think the bottom line is, antibiotics aren't helpful. What's helpful? Corticosteroids and trying to attack that inflammation. Like most things, you do want to follow up a patient. The patient's not responding and getting worse, then maybe there's a role for the antibiotic as an add-on therapy in that acute situation. But it shouldn't be just done up-front. You're not going to be able to help them. At most 95% of your patients are just going to have no benefit from that and will just have the adverse effects of the side effects potentially from using the antibiotic agents.

Dr. Domino:

So thanks, Bob. To recap today's session, use a stepped approach when you have a patient with known asthma, based upon their degree of severity and add agents on in an appropriate fashion. When someone has an acute exacerbation, treat the underlying cause, which is that inflammation, with oral corticosteroids. Those typically for prednisolone is one to two milligrams per kilogram, for both adults and children. And guidelines say anywhere from three to seven days of therapy without tapering is adequate. There has long been used, based upon clinical judgement, antibiotics, but there's increasing data that shows the need for antibiotics is probably very, very limited, and that's going to evolve over time. I want to thank you, Bob, for coming in today and talking about asthma. This is Frank Domino, for Frankly Speaking.