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Evaluating Chronic Cough in Children

CHRONIC COUGH IN PEDIATRICS

You are listening to ReachMD XM160, The Channel for Medical Professionals. Welcome to Hot Topics in Allergy presented by the American College of Allergy, Asthma, and Immunology. Your host is Dr. Todd A. Mahr, Director of Pediatric Allergy-Immunology at Gundersen Lutheran Medical Center in La Crosse, Wisconsin.

Cough is a common symptom of children, but at what point is a cough considered chronic? Should a chronic cough be evaluated to determine the cause first or is treating the cough enough? Joining us to discuss chronic cough in pediatrics is Dr. Alan Goldsobel, clinical professor in the Department of Medicine at the University of California San Francisco.

DR. TODD A. MAHR:

Welcome, Dr. Goldsobel.

DR. ALAN GOLDSOBEL:

Thank you very much.

DR. TODD A. MAHR:

Well upfront I want to know how common is cough as a presenting symptom for most physicians?

DR. ALAN GOLDSOBEL:

Cough is an extremely common presenting symptom for many-many years now. National surveys both in the United States as well as in Great Britain have shown that cough is the most common symptom for which patients both children and adults present to physicians in their offices for care.

DR. TODD A. MAHR:

So knowing that we are going to see it a lot and it is the most common thing we are going to probably see, what causes cough?

DR. ALAN GOLDSOBEL:

Well we like to think about the causes of the cough as either being acute or chronic. Acute cough is most commonly caused by viral respiratory tract infections more chronic causes of cough may differ between children and adults. In older children as an adult it's often caused by asthma or a type of asthma, cough-variant asthma, or upper airway cough syndrome, diseases of the nose and sinuses, or possibly as a manifestation of GERD. A number of studies have suggested in younger children particularly younger children, I am talking 1, 2, or 3 years old with a wet cough or persistent wet cough. This may be a persistent low-grade bacterial infection either in the lower airways, persistent bacterial bronchitis, or possibly even a sinus infection.

DR. TODD A. MAHR:

So you mentioned kind of the character of the cough like wet or dry. Is that really helpful in determining the cause of a cough?

DR. ALAN GOLDSOBEL:

In adults studies I have suggested that the character of the cough is not helpful in determining the ultimate etiology of the cough, but in children we know that there are some very classic characteristic types of cough such as the barking kind of cough, barky or brassy cough that very young infants will have may be as a manifestation of tracheomalacia or bronchomalacia that dries the cato-type cough that infants gets with Chlamydia infection, the classic spasmodic cough may be with or without an inspiratory whoop with pertussis and in children much more than adults is the characteristic cough called the habit cough, which is often a very dry almost throat clearing-like cough.

DR. TODD A. MAHR:

At what point then should we actually start to evaluate the cause of a cough. You mentioned a lot of different causes as you were mentioning the characters, but when should we pull that trigger so to speak as to lets start an evaluation?

DR. ALAN GOLDSOBEL:

Well the American College of Chest Physician Cough guidelines, which are fairly much as the gold standard would suggest that an adult to characterize or to contrast in adults you should not start evaluating a cough until it has been present for greater than 8 weeks. In pediatrics those guidelines suggest that the definition of a chronic cough and thereby when one would want to start evaluating that would be when it has been present greater than 4 weeks, but a number of other experts and guidelines have suggested that that's probably a little early and so most people wait until 8 weeks characteristically in children as well. It has been estimated that the cough from a viral respiratory tract infection lasts up to 3 weeks.

DR. TODD A. MAHR:

So, definitely at 8 weeks may be in some children that range of 4 to 8 weeks would be sometimes to start thinking about it.

DR. ALAN GOLDSOBEL:

Correct.

DR. TODD A. MAHR:

Can the cause of cough be determined in most cases?

DR. ALAN GOLDSOBEL:

Yes it can. Studies show as well as my own personal experience that in probably 90% of the cases you can determine an etiology of cough, the types of things that we were talking about sometimes can happen in concert with each other, so there can be multiple causes happening at once that the physician or clinician must think about or evaluate. Sometimes cough can persist after a viral respiratory tract infection greater than 3 weeks. We would call that a postviral or postinfectious cough that will eventually resolve on its own.

DR. TODD A. MAHR:

And I think we all see that generally a lot with the typical cough lasting you know under 3 weeks, but you are saying you know after 3 weeks you might kind of see that, what about postnasal drip?

DR. ALAN GOLDSOBEL:

Postnasal drip or postnasal drip syndrome is being re-characterized or now called upper airway cough syndrome. In adults, is felt to be in the American studies at least the most common cause of chronic cough. It is somewhat controversial, but certainly in patients with allergic rhinitis, sinusitis, you can have stimulation of receptors in the upper airways as well as literally mucus dripping down the back of the throat and stimulating cough.

DR. TODD A. MAHR:

So how you would workup a cough?

DR. ALAN GOLDSOBEL:

Well, the first step obviously is to get a good history of suggestive factors that may lead you in one direction or the other. The type of cough that we are really talking about this person or child with a chronic undetermined cough almost by definition has a normal chest exam. They don't have wheezing or rhonchi, that's a different picture; if the child is wheezing then we are not thinking about the same type of differential, and we are thinking more asthma, so a normal chest x-ray would be the next step that would again by definition put

these children into this state of nonspecific chronic cough and then from that point you kind of have to make a decision if it is continuing and there is no clues in the history or physical exam that's leading you in one direction or the other, its probably best to think about is the cough overall, a wet cough or dry cough. If its a wet cough in children and again particularly in younger children and again I mean 2, 3, or 4 years old and not in the 14, 15, or 16 years old, in a younger child with a wet cough often there is this entity of persistent bacterial bronchitis or may be occult sinusitis and so empiric treatment with an antibiotic up to 3 weeks is probably the best first line therapy. In a dry cough then a trial of inhaled steroids basically to rule out asthma is usually tried and that trial needs to be continued for probably a minimum of 4 weeks to see if there is response.

DR. TODD A. MAHR:

If you are just tuning in, you are listening to Hot Topics in Allergy on ReachMD, the Channel for Medical Professionals. I am your host, Dr. Todd A. Mahr and joining me to discuss chronic cough in pediatrics is Dr. Alan Goldsobel, clinical professor in the Department of Medicine at University of California, San Francisco.

So we talked a little bit about what you can do to make the diagnosis, you discussed a little bit about treatment. I guess the big question a lot of people have is what about the over-the-counter medicines, do they work?

DR. ALAN GOLDSOBEL:

You know that's a great question and its one that has been looked at more intensively recently and obviously these over-the-counter cough and cold medicines have been used extensively for decades. There have been some articles published recently looking at the use of these medications in young children showing that there is almost uniform lack of efficacy in some rare cases, but there should be none. There is significant morbidity and rarely even mortality and because of these data, the FDA in the last year has come out with a strong recommendation to ban the use of over-the-counter cough and cold medications initially in children under the age of 2 and just recently that was extended to children under the age of 4, at least the manufactures of these medications have put out a recommendation that the FDA has approved of not to use these medications in any child under the age of 4.

DR. TODD A. MAHR:

How useful have you found guaifenesin to be used in pediatric patient over age 4, so we will avoid that under age 4 group, but its out there, does it help?

DR. ALAN GOLDSOBEL:

Guaifenesin I think has had a marginal effect in the type of patient that I think we are talking about this child, who has a persistent usually dry cough. Certainly in patients where there are thick secretions using guaifenesin can be helpful to thin out those secretions. I would add that in those situations, you really need to use guaifenesin in high dose in adults, you know up to 3200 mg a day. The other cough suppressant over-the-counter such as Dexamethorphan that often comes in concert in their preparation with guaifenesin may have some mild cough suppressant effect.

DR. TODD A. MAHR:

You had mentioned the use of antibiotics for persistent bacterial bronchitis and then inhaled steroids also, what about bronchodilators?

DR. ALAN GOLDSOBEL:

If you have made a diagnosis of an underlying condition such as sinusitis, allergic rhinitis, asthma then you treat that according to the accepted therapies, which would include inhaled steroids, bronchodilators possibly anti-leukotriene agents, but we would not think about using bronchodilators on a long-term basis in a patient with this nonspecific cough other than for immediate relief as you would in somebody with more classical asthma.

DR. TODD A. MAHR:

In pediatric patients specifically when you are looking at sinusitis for the etiology of a cough or the background of a cough, how would you work that patient up?

DR. ALAN GOLDSOBEL:

Well I think that a high index of suspicion is probably your best clinical clue. There is certainly a place for using radiographs, plain films are very limited in their scope and screening CT scans of the sinuses are certainly much more complete in their evaluation of the sinus cavities. There is a lot of concern amongst pediatric radiologists about possibly overuse of CT scans in children in particular and so you want to be somewhat judicious with ordering CT scans and in fact try and order a CT scan at a facility where they can appropriately use lower levels of radiation, but ultimately the diagnosis is made with a screening CT scan of the sinuses, but again that's very hard to do in a young child and occasionally I will get a plain film if I am clear what's going on, but often its just an empiric course of therapy to see if there is a response.

DR. TODD A. MAHR:

Well thank you. I want to thank my guest Dr. Alan Goldsobel from University of California San Francisco. We have had a very timely discussion on chronic cough in pediatrics. Dr. Goldsobel, thank you for being our guest this week on Hot Topics in Allergy.

DR. ALAN GOLDSOBEL:

You are very welcome. Thanks.

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