Montana
Asthma Control Program
Chronic Disease Prevention & Health Promotion Bureau

Webinar: Complementary and Alternative Medicines (CAM) and asthma

Presented by Maureen George, PhD, RN, AE-C, FAAN. Recorded May 18, 2017. Updated November 28, 2017. Contact the Montana Asthma Control Program at asthmainfo@mt.gov for more information.

Dr. George: (recording starts mid-sentence) a topic that we talk about, complementary and alternative medicines for asthma and allergy, because when our patients feel that the things that we're offering them don't provide a solution for their symptoms, their discomfort, or their, you know, preferences, then they go ahead and they reach out to other kinds of things. So, I think it will be interesting to talk about what patients are using while they're using complementary and alternative medicines and could or should you do anything about it.

So, for conflict-of-interest, I have one to declare, which will not have anything to do with today's presentation, the objectives for today are listed here, we're going to look at what is meant by the different terms complementary alternative and integrative medicine, look at the most recent data that we have in terms of trends for CAM use for asthma, and the most common types of CAM used for asthma and allergic rhinitis. We'll look at resources that I'm working on right now to assist providers in taking a comprehensive CAM history and then wind up with a few strategies for how you might consider supporting the use of complementary alternative medicine within a patient-centered care model, as well as resources that are available to you to evaluate safety and effectiveness of different things that your patients may be using.

So, to start, what's in a name when we're talking about complementary medicine. We're typically talking about those things that are unconventional non-prescription practices that have some kind of an evidence-base and are used along with conventional biomedical or pharmacologic approaches. We reserved the term alternative medicine to describe unconventional non-prescription practices that may or may not have been evidence-based, but they are primarily characterized by the fact that they're used instead of or to replace conventional biomedical or pharmacologic management approaches. The term that's really kind of hot now, in the buzz, is integrative medicine. I provided a definition here for you from the Bravewell Organization saying that it is healing-oriented care that puts the patient at the center and addresses the full range of physical, emotional, mental, social, spiritual, and environmental influences that affect that person's health, and when we use it in terms of our clinical practice we're really describing the purposeful coordination of the use of our conventional pharmacologics and behavioral approaches along with complimentary or evidence-based complimentary practices.

So, just to kind of set the stage I'm going to go all the way back to some early work from a medical anthropologist who hails from Harvard who reminds us that patients have more than just a healthcare professional option when they develop a cluster of symptoms or have a new diagnosis. They may have their own cultural or traditional healing that really is influenced by their worldview, or they may be influenced by what they see in the popular culture, so what is on social media or what they see on TV or other kinds of methods of communication. And, the most important thing to remember is that although

we live in a country in which there is a lot of biomedical or pharmacologic management, the World Health Organization estimated in 2002 that about 80% of the world healthcare is alternative and only 20% is pharmacologic or biomedically oriented. So, that means that as we're seeing increasing diversity in our patient populations we are more likely to be interacting with patients who have an orientation to health that would fall on the more alternative spectrum.

The other thing that's also important to be reminded about is that Dr. Kleinman not only tells us that there's three different ways that we may- four options rather- that we might have available to us in terms of healthcare. The healthcare professional, the traditional or cultural or alternative, what we see on social media, but we need to remember that often patients will turn first to their community or what they see in social media and only when that fails will they turn to the healthcare professional. So, the hierarchy of resort, meaning who do you go to first and who do you go to when you exhaust all of your approaches that you've used to manage it yourself, may be two different things.

So, the most recent information that we have on the prevalence of CAM use comes from the 2012 National Health Interview Survey data and for this survey, data are collected every five years. We can see for adults they've been asking about the frequency of CAM use for the last three surveys and there's been no statistically significant differences. About one third of the adult population in the United States uses complementary or alternative medicine. They didn't ask that question in 2002 for children but what we know from 2007 into 2012 survey data is that about 11% of children, again holding steady, are reporting that they use CAM. But, what's really interesting comes from some of this new 2012 deep dive into the NHIS data. If you simply ask a healthy child in the first column on the far left whether or not they've used any CAM in the last year, about 12% said yes, they did, and if they had at least one medical condition this goes up to about 15%, or if they had two or more medical conditions this went up to 17%. Then, they change the question slightly and for those children who reported respiratory, eczema, allergies, pain, or GI problems, and again these are specifically included, the pain and GI is specifically around food allergy questions, you can see that if you asked if you have these conditions have you used any CAM in the last year to treat these conditions, the numbers shoot up to about 60, 65%. So, by slightly changing the question we get a much greater appreciation for the extent of CAM use, and this is in children and we expect to see the same in adults.

I'm going to kind of go through a bunch of the NHIS survey data and then try and spend the majority of the time concentrating on those therapies that are specific to asthma, so if you bear with me through some of the next few slides- What you can see here is the ten most common complimentary health care approaches among adults in 2012 and you can see that the top six are natural products, deep breathing things that would use movement or meditation, mind-body like yoga, tai chi, chiropractic care, meditation, and massage, and when we look at the top 10 most common approach issues by children many of them are the same natural products, chiropractic care, yoga, tai chi, but here you start to see deep breathing homeopathy and meditation coming in, but these numbers are much smaller.

If we look at adults again, we're seeing that as many as 18 percent are using natural products, but for children when we ask that question it's only about 5 percent of children. When you look at the types of natural products that adults and children are using, the ones that we're going to be talking about today that are specific to asthma and allergies include omega 3 fatty acids, probiotics, echinacea, and ginseng. And for children again you see smaller numbers with the same pattern of natural product use.

In terms of mind-body therapies, you can see that adults are using primarily yoga, chiropractic care, meditation, and massage, and two smaller numbers but a similar pattern for children. Now, this is not really an insignificant out-of-pocket cost to the family, although about 50 billion dollars was spent in out-of-pocket physician visits, about a third of that amount, about $15 billion with complementary practitioners, and out-of-pocket spending on prescription drugs is about $55 billion, and again not inconsequential natural products is about $13 billion, and when we consider adults and children, adults here on the left and children on the right, not only are their out-of-pocket costs on practitioner visit and natural products supplement but also on self-care, on procedures, and when we're talking about self-care we're really talking about vitamins and herbs, special diets, group membership, things like that, so about another $2 billion for self-care in adult and 500 million for children.

You might think that this is something that is so costly that only those individuals with expendable income can pay for it, but surprisingly, even the lowest levels of family income are spending significant amount of money, $435 on average, on complementary health approaches, which is not much less than what individuals with the highest income levels are spending, and the problem with that when we think about that is that means that there is a risk that they're spending money on complementary therapies and not on co-pays to get pharmacologic prescription therapies.

So, let's now turn to the specific asthma and allergy treatment. About 8% of adults and 1% of US children report the use of omega-3 fatty acids. Omega-3 fatty acids are a group of polyunsaturated fatty acids in fatty fish, and that's the salmon, tuna, sardines, mackerel, trout, as well as vegetable oils. Now most vegetable oils are omega-6 like avocado, corn, and sunflower, so when we're talking about omega-3 we're talking more like the canola oils or olive oil, which has a better ratio of omega-3 to omega-6. It also includes the dietary consumption of things like walnuts, flaxseed, and leafy vegetables. The omega-3 supplements, primarily fish oil supplements, have been studied for both prevention and treatment of allergies and asthma, but no conclusions can be drawn about whether they're helpful for these conditions based on what we currently know, and this comes from the website noted on the right hand side, the National Center for Complementary and Integrative Health, which is part of the National Institutes of Health.

Although we have moderate evidence for the health benefits of eating seafood and we know that omega-3 fatty acids usually don't have much in the way of negative side effects, when side effects occur they tend to be things of a GI nature like diarrhea, burping, heartburn, bloating, maybe some abdominal pain, we know that we don't want individuals to be using fish liver oils, which are not the same as fish oils. The fish liver oils contain high levels of vitamin A and D which could be toxic, and we're not certain

whether people with fish or shellfish allergies can safely consume these fish oil supplements, and we know that they may interact with nonsteroidals and blood thinners to increase the risk of bleeding. We don't have, as I said before, the evidence that they really are helpful in asthma and allergy.

Something else that a lot of individuals are turning to in the way of asthma and allergies are probiotics and prebiotics. About 1.5% of adults and about 0.5% of children are using pro or prebiotics. These are live microorganisms like bacteria that are the same as or very similar to the normal organisms in the human body, and when we're talking about prebiotics we're talking about the dietary substances that favor the growth of these good bacteria over the bad bacteria. Another term you may not be familiar with is synbiotics, which are products that contain both pro and prebiotics. They've been specifically focusing on the examination of the role of probiotics in the prevention or treatment of atopic dermatitis, eczema, or allergic rhinitis. They have a good safety record and they have, again, mild digestive symptoms. In particular, here gas seems to be a common complaint, and we also have information mostly from two strains of probiotic, lactobacillus and bifidobacterium. If you're going to use these probiotics most people recommend the live refrigerated strains, or there's one over-the-counter product that has a lot of Lactobacillus GG, which goes by the trade name Culturelle.

The typical way that it is given I can describe when we look at how they've been studied in pregnancy and breastfeeding. In these studies, typically pregnant women were, breastfeeding women, were given one to ten billion units three to four times a day for two to four weeks pre-delivery and up to six months after delivery during the period of exclusive breastfeeding, and we have some information that in this one study, 159 pregnant women who had family history of eczema who were randomized to receive either lactobacillus or placebo before their delivery date and then chose to breastfeed for at least six months exclusively noted a 50% reduction in eczema in the first two years and now following them four years after birth they have significantly, again in the lactobacillus GG group, significantly lower rates of atopic dermatitis or eczema. Some other smaller studies that you can find either in MEDLINE or in this review by Golden and Gorbach include a study of 27 infants with eczema randomized to two different strains of the probiotics versus a placebo and given a supplemental formula had improved eczema. 31 infants with atopic dermatitis eliminated the cow's milk and then received probiotic verses a placebo in a supplemental formula and again those who got the lactobacillus had significantly improved atopic dermatitis. A smaller study of bifidobacterium animalis reduced the severity of eczema, and a combination of freeze-dried lactobacillus reduced atopic dermatitis symptoms in children between the ages of 1 and 13, so what to make of that?

Although previous studies have shown that probiotics are likely effective for the prevention of diarrhea, the MEDLINE national libraries of medicine website is indicating that there's a signal suggesting that probiotics may be possibly effective in atopic dermatitis.

Another interesting natural treatment includes the use of Echinacea. About one percent of adults and 0.4%of children in the US report the use of Echinacea, which is made from the common coneflower. Typically, it's given as an oral preparation to treat upper respiratory infections or topically for skin

problems and usually when it's taken by mouth it doesn't cause any problems, although there have been some allergic reactions like rashes, asthma attacks, and even anaphylaxis. The reason for this seems to be in those individuals who are ragweed-sensitive because Echinacea is in the same daisy family, which includes ragweed. They're at increased risk of these severe side effects.

Asian ginseng was also one of the most common natural products use and it's believed mechanism of action is the immune response stimulation. Its short-term use in recommended amounts appears be safe, and this is specific to Asian ginseng and does not include the American or Siberian varieties. Some experts recommend against its use by infants, children, pregnant, or breastfeeding women, and some evidence suggests that it might have deleterious effects on blood sugar and blood pressure as well. As for long-term use, currently there's no conclusive evidence supporting any health benefits and particularly not any in allergy or asthma.

And the last specific intervention I want to talk about is the use of different breathing techniques and one in particular is an approach called hyperventilation reduction breathing. There's been-- AHRQ, the Agency for Health and Research Quality, which is a governmental agency, has released a systematic review that identified that in adults the techniques to train individuals who are chronically hyperventilating to decrease their respiratory rate has resulted in fewer asthma symptoms and less use of albuterol rescue inhaler with no changes in PFTs. The two most common hyperventilation reduction techniques are known as Buteyko, which is more popular in the US, and Papworth, which is more popular in the UK and in Australia. In addition, this systematic review identified that for adults, yoga may be helpful in improving primary function and in decreasing asthma symptoms but none of these findings have been replicated in children.

There are drug herb interactions to consider if you have individuals who are using traditional Chinese medicine and going to an herbalist who is actually giving the raw root. There is a traditional Chinese medicine root called *ma huang* which actually contains natural ephedra, which can have synergistic cardiovascular effects when used with albuterol or with caffeine, and we just saw just this week that a child and teenager died from the overuse of caffeinated beverages, and I believe it was the southeast US. Ephedra compound would increase these kinds of risks.

And, if you're using licorice root, not the candy but the actual root, we know that there is the risk that the use of licorice root can prolong the half-life of cortisone, potentiating the systemic effect.

Other risks for CAM and asthma are the ones that I'm particularly interested in, including risky home and traditional remedies. So, there are case reports of individuals and cultural approaches to the treatment of asthma that includes the ingestion of things like turpentine and, very commonly in African-American and Latino populations, the ingestion of Vicks Vaporub. There's been at least three child deaths associated with the ingestion of things like camphorated menthol products. In indigenous American Indian populations there have been acute asthma exaggerations as a result of being exposed to smokehouses or sweating ceremonies.

But the thing that we're primarily concerned about is that when we know that individuals have other approaches to managing asthma they often delay initiating their albuterol dosing for acute asthma. They may actually substitute their alternative medicines for either their albuterol or inhaled corticosteroids, and other studies have shown that if you're a CAM user you're more likely to use less of your prescription medicine and keep less of your appointments with your medical provider.

Now a few things specific to CAM and allergic rhinitis. One of the treatments that has gotten a lot of interest lately is the use of butterbur, which is a natural product. They have been reporting the use of the root or leaf extracts as helpful for allergic rhinitis, but it has not been proven in the clinical trials that we have to date to be helpful for either eczema or asthma, so this is specific to allergic rhinitis. The butterbur must be processed to remove these specific pyrrolizidine alkaloids which can cause liver damage and result in serious illness, so the product has to be labeled as or certified as PA-free. Several studies, including some that included children and adolescents, found that the short-term use of butterbur was well tolerated and safe. It's typically prescribed as a leaf extract, dose 8 milligrams three times a day, or as a whole root extract, dose 50 milligrams two times a day.

But, you do need to be careful because we don't have much information about its use after about four months of treatment and we do know that butterbur is also in\ the Daisy family so there's the potential for the exacerbations or anaphylaxis as we've seen with Echinacea.

Another area of interest for allergic rhinitis has been grapeseed extract. It contains an antioxidant and its presumed mechanism of action is an anti-inflammatory mechanism. It seems to be well tolerated when taken in moderate amounts for up to 14 weeks but there's only one single randomized control trial in allergic rhinitis, which did not demonstrate any efficacy.

Quercetin is a plant pigment or a flavonoid that is found in lots of different products and it has antioxidant anti-inflammatory effects. Typically, people will use this for allergic rhinitis at a dose of 500 milligrams once a day to twice a day. There is only one pre/post open-label trial, which used it in a combination with food supplements in 23 adults. Everything else that appears in public PubMed is really on the basic science so we really don't have much knowledge about it, its use, and particularly its safety and efficacy in the treatment of allergic rhinitis.

One last area of interest has been on the use of capsaicin. For capsaicin, the trade name for the nasal spray is Sinus Blast Buster, capsaicin is derived from red peppers and it's known for its desensitizing peptidergic sensory C-fibers and nasal hyperreactivity reduction. There's some information about its use. A small trial, again randomized, of 42 patients with allergic and non-allergic rhinitis. It was compared in addition with a menthol eucalyptus twice a day for two weeks and compared to placebo in the study by Dr. Bernstein. He was able to show that there was a statistically significant greater reduction in total nasal symptoms score, which included nasal congestion, improvement in sinus pain, pressure, and headache. It was given as one spray in each nostril twice daily. In addition, treatment with the capsaicin was associated with no greater risk of adverse effects and these included things like nasal congestion, headaches, post-nasal drainage, rhinorrhea, stinging, burning, blood, and mucus.

It should be said that in this one study, although there was improvement in the total nasal symptom score, there was no reduction in sneezing, rhinorrhea, or post nasal drip. In a systematic review from the Cochrane group, capsaicin appears to have a beneficial effect on overall nasal symptoms up to 36 weeks after treatment, based on a few low quality small studies.

So, some common-sense recommendations. If you don't know what to do with all of this kind of complicated information I'm giving you today, always say that having a healthy diet is a good idea. There's been lots of correlational studies looking at low levels of vitamins, antioxidants, and minerals like magnesium, low levels of those omega-3 fatty acids, and higher rates of asthma and allergic rhinitis and eczema. The studies that have examined the usefulness of dietary supplementation haven't consistently shown to prevent or treat disease but I would say that it's always a reasonable approach to tell patients to eat a whole food diet that's high in antioxidants, in omega-3 fatty acids. In countries where they have diets that are naturally high in omega-3 fatty acids and antioxidants, like Italy and in Greece with the Mediterranean diets, we know that they have lower rates of asthma and allergic diseases.

The other thing that individuals might want to consider specifically for allergic symptoms is the use of nasal saline, either with a bottle or a neti pot, and so I provided some direct instructions from the manufacturers here if you're interested in following those or making those recommendations to a patient. The most important thing to remind people is to make certain that they know that they never put the tip of the neti pot or the bulb syringe of a nasal spray further into the nostril then a fingers width.

The last couple of slides that I wanted to share with you have some general ideas about what we know about why patients are coming to complementary therapies and what you can do to find out what they're using, and why maybe you might want to consider supporting those things that are safe, even if we don't know whether they're effective. Primarily, patients who use CAM fall into two broad categories, either because they have a worldview, they're an individual who favors natural therapies over-prescription biomedical approaches, or you can see it as a marker for some level of the satisfaction with the care that they're getting. It might be philosophical or cultural, which would kind of put them into that worldview category, or it might be because they're afraid of the medication, they're disappointed with the lack of response they've gotten from the medication, or they're disappointed with a side effect they experienced from the medication, or that the cost seemed to be too prohibitive for them.

Hopefully as I've been presenting this information you've gotten the sense of urgency that I feel about the need to ask our patients about what they're using. Anytime that you're taking a health history, particularly when the individual is new and when symptoms are newly developed, or if their asthma control or allergy seems to have a loss or a deterioration in their quality of life or their control. And, I always support a patient's use of medications that are safe, even if I can't provide you with any evidence of them being effective.

I'm working with some colleagues now to create what we're calling integrative medicine intake forms, and these are some screenshots from three different intake forms we've developed and have under review at the journal JACI: In Practice. We are suggesting that you might want to give your patient a checklist to complete while they're waiting in the office, which gets broader looks at different mind-body practices, natural products, or other complementary approaches, and that they would self-report, and if they check something “yes” to that then we're suggesting we have this second form which is an index of all natural products that are herbs, vitamins, and foods in alphabetical order that an individual could also check off, so that you could have more focused information about what they're using. Anytime you were to use these you would obviously need to collect information on dose and frequency and the reason why they are using these particular products.

In our paper under review right now we offer a third intake form that we're calling a cultural health history taking aid, which really is kind of focused on trying to get at an understanding of an individual who has a different orientation to the symptoms that they're experiencing, who they want to treat them, and how they want to be treated. So, we hope that we'll have some good news about having that out available shortly.

The Institute of Medicine has defined patient-centered care as respectful of and responsive to individual patient preferences, needs, and values, ensuring that patient values guide all clinical decisions. So, when we think about the Venn diagram that is evidence-based medicine we often think about the best external evidence, our asthma guidelines for instance, and our own individual clinical expertise that comes from years of practice and following guidelines. But, what we often forget is that patient preferences for care should be given equal weight to the clinician expertise into the standards, the evidence-based standards, because a lot of people think that you can't give high quality health care without incorporating the patient's values and expectations.

In the Institute of Medicine's "Crossing the Quality Chasm" report, they had identified ten rules for improved health care and I have a paper that's referenced here that identifies seven of those ten rules being appropriate for our consideration of quality care and integrative medicine. For instance, care is based on continuous healing relationships. One of the things that we know is that patients are often more satisfied with their yoga teacher or their naturopath than their primary care provider or nurse because those complementary practitioners excel at touch, time, and talk, and if we are going to improve patient satisfaction we're going to need to figure out how we can develop new continuous relationships that are more holistic with our patient.

In order to have greater patient satisfaction, another IOM quality rule is that care needs to become customized according to what patients need and what patients value, so that means, as I said previously, we need to accept what they're doing and accommodate their non-medical worldviews, as long as what they're doing is not harmful.

The third rule, the patient is the source of control. One of the reasons that patients often turn to complementary or integrative medicine is because they don't feel that they have a voice in the visit with

their nurse or doctor, and that's why I'm now examining what can happen in a brief intervention around shared decision-making where we negotiate what asthma management will be for individuals who have persistent and uncontrolled asthma.

The fourth rule is knowledge is shared, information flows freely, which means that we need to be better communicators and better collaborators, reaching out to the complementary practitioners as part of an extended health care team. We need to remember that, although decision-making should be based on evidence, just simply presenting our patients with what the guidelines say or what the truth is is often not compelling enough for them to actually feel that the recommendation we're making for inhaled corticosteroid or for some other treatment is something that they feel is actually going to be helpful for them.

The sixth rule around safety is making certain that you get to know when patients are doing something that is dangerous, and offer them an alternative complementary treatment as long as they do not do the thing that is dangerous.

And remember that finally, needs need to be anticipated. Patients often turn to complementary medicine because they see it as a way that they can personalize their own medical management.

I've included here a couple of resources that I've referenced in the slides. The Natural Center for Complementary Integrative Health, and MEDLINE, but I also want to point out that there is something called the Natural Medicines Database. If we are a member of the American Academy of Asthma and Allergy we get a complimentary subscription to this, otherwise it is by subscription only, but it's a great place to get information that grades the safety and efficacy of all these different treatments. For example, it gives butterbur a C for asthma and a B for allergic rhinitis, meaning that it's unclear whether it's helpful for asthma but there's pretty good evidence that it's good for allergic rhinitis. It gives you information on all of these different products mechanism of action, adverse events, interactions with other drugs or with other herbs. It's an excellent resource that might be of interest.

That concludes my talk today, thank you! I think if there were any questions that people can put in to, type into the chat feature, and I'll turn it back over to you.

MACP: Thank you so much, that was a really informative presentation, I hope that everybody got something new out of that. I'm not seeing any questions pop up in the chat box. Well, Maureen I actually maybe just thought of one myself. We just had the Big Sky Pulmonary Conference, which I know you're a little familiar with, out here and one of the things that somebody said about a breathing technique was a yogic breathing technique called kapalabhati. Have you heard anything about that? I was surprised to see that as a recommendation for asthma.

Dr. George: That might be a specific type of breathing technique or pranayama, but I, based on the report it's certainly not harmful and there is weak evidence but a signal that in adults yogic breathing may decrease symptoms and improve pulmonary function tests, you know, pulmonary function values, so I would strongly suggest it as you know, grade A for safety, high evidence that it's safe and even if it's

unclear if it's effective I think it's a really good approach. And, just like Pilates, people who have the sense of controlling their breathing have a lot less anxiety when they have an asthma attack, and it really does, I found that people have been very responsive to breath training, and my preference is yogic breathing over these hyperventilation reduction techniques.

MACP: Got it, thank you for that! So, I'm not seeing any questions pop up, Maureen, I think that we're probably done! Thank you so much for your time today.

Dr. George: Yeah, I appreciate it and I hope that I was able to touch on at least a few things that people have already seen in their practice or they will now be ready to see and respond to in their practice. It's really fascinating and I think that if we all come together around the fact that our patients are using this, that the onus is on us to be prepared to respond and to really meet our patients where they're at in order to deliver the kind of care that they're really looking for, so that we keep them within the medical system and don't drive them only to doing those alternative practices.