New Guidelines Related to Tick-Borne Infections

It’s summer — so what do you need to know about Rocky Mountain Spotted Fever (RMSF), and ehrlichiosis, the two most common local tickborne infections associated with fever? During this season, when evaluating a febrile child, establishing if the child has had a tick bite or is tick exposed (lives or has visited an area where ticks have been seen) is helpful.

Listen in as Mary Anne Jackson, MD, a pediatric infectious diseases specialist with Children's Mercy, discusses the latest guidelines related to Tick-Borne infections.

Featured Speaker:

Mary Anne Jackson, MD

Mary Anne Jackson, MD Specialties include Bacterial Resistance including Penicillin-Resistant Pneumococcus, Emerging Pathogens, Hospital-Acquired Infection Prevention and New Vaccines.

Learn more about Mary Anne Jackson, MD (http://www.childrensmercy.org/templated.aspx?id=3041&doc=3174)

Transcription:

Dr. Michael Smith (Host): Our topic today is new guidelines related to tick-borne infections. My guest is Dr. Mary Anne Jackson. Dr. Jackson is the division director of infectious disease at Children’s Mercy. Dr. Jackson, welcome to the show.

Dr. Mary Anne Jackson (Guest): Thank you so much. Good morning!

Dr. Smith: So, I guess Children’s Mercy has already seen some cases of tick-borne infections. Is this going to be a bad year?

Dr. Jackson: Well, we think it is. I think, mainly because we know that ticks survive at temperatures over 50 degrees, and when we have mild winters, we have ticks that are actually available all times of the year, but here we’ve started seeing a lot of reports about ticks starting in March. We’ve already seen several children with tick-borne disease, including life threatening tick-borne disease. So, it’s a good topic to talk about.

Dr. Smith: Bringing it back to the community doctor, the primary physician, the general pediatrician, what are some of the guidance you can give them for recognizing a tick-borne infection, and what are some of these new guidelines?

Dr. Jackson: So, in terms of recognizing tick-borne infection, in every febrile patient at this time of the year, we’re asking physicians to ask about tick-bites but not only that, investigating whether or not their patient has had exposure to uncut grass, wooded or tick infested areas, contact with dogs that may have had tick exposures, and travel to other high-risk areas. In addition to the Midwest, we see a high incidence of tick-borne diseases in North Carolina, Oklahoma, Tennessee, for instance, and

remembering that the tick exposure may be in the patient's back yard or neighborhood, and not necessarily down by the lake. Also, clusters can happen within families, so inquiring about other symptoms in other family members.

Dr. Smith: Yes. That's interesting, Dr. Jackson, because I think you're right, we tend to think of getting a tick and you're out camping; you're going on a vacation with the family and you're going somewhere else. Yet your own back yard—even, you mentioned your own dog--how often, or how common is that for the pet to pass a tick on to a human?

Dr. Jackson: Well, it's not uncommon, and think about the dog or the pet as being a surrogate marker of tick-infested areas. So, in many cases, we hear from parents, in terms of the child that we're examining because of tick-borne symptomatology, they say, "Well, I don't remember taking a tick off this child, but we took a tick off the dog, and the children play outside in the same area where the dog plays," or, "We've taken a tick off a sibling" or "I found a tick on myself," so those pieces of information are exceedingly important.

Dr. Smith: Now, once the physician is examining the patient, maybe there's a history of fever, usually diagnostic tests are run and what's the problem with those tests, at least initially?

Dr. Jackson: Well, it's a good point regarding testing. So, first of all we have the symptom onset, and it's usually fever, headaches, vomiting and muscle ache. In that essence, it's very, very non-specific, and while the rash of Rocky Mountain Spotted Fever, for instance, may develop, it can be absent in 20%, so we do have to think about diagnosis. Well, it turns out that the diagnostic testing for tick-borne diseases are not positive at the time of the patient's presentation. So, our recommendation is, there is some testing that you can do, keeping the tick-borne infection in mind, including blood counts, and liver function tests, and electrolyte tests. But, doing testing to look for antibodies to Rocky Mountain Spotted Fever, **Rickettsia rickettsii (https://en.wikipedia.org/wiki/Rickettsia_rickettsii)**, or to Ehrlichiosis, Ehrlichia chaffeensis--those should not be performed initially, in terms of trying to make the diagnosis, and you should never delay therapy while waiting for those tic-related specialized tests to come back.

Dr. Smith: And, is that, Dr. Jackson, is that a problem, though? So, are there a lot of physicians that aren't treating empirically? They're waiting for those tests to come back? Is that a common scenario you find, in the community?

Dr. Jackson: I think that is a very common scenario. You now can find something called a "tick panel". So, a physician may correctly suspect a diagnosis of a tick-borne infection based on exposure, based on clinical presentation. They may even have some of the basic laboratory studies there that are triggering those thoughts, including looking for blood count changes with low white counts, low platelet counts, low sodium, or elevations in the liver transaminases. They order something called a "tick panel", and think that is going to make the diagnosis, and truly that is the mistake that we don't want to make. We should never order a tick panel and delay therapy waiting for that result because that is not the way that we're going to make our diagnosis. Acute serology is virtually always going to be negative and you're waiting for the convalescent serology, meaning the antibody studies, and they are not going to develop until later in the course and that may be too late. So, delaying therapy in waiting for those is not only common but is very detrimental to the patient. For Rocky Mountain Spotted Fever, for instance, we say for those children, beyond five days of fever--and we know this happens quite often that the

child is thought to have a virus and then discharged, and then comes back sill febrile – at five days, with children who have Rocky Mountain Spotted Fever, who looked very benign at the beginning, do not look benign at that point. They have clinically deteriorated and, in many cases, are requiring intensive care at that point.

Dr. Smith: Yes. And so, the empiric therapy is going to be doxycycline, correct? But, does the age of the patient matter when it comes to doxycycline?

Dr. Jackson: Doxycycline is the drug of choice, no matter the age of the patient, and should be initiated as soon as the diagnosis is clinically suspected. The past mantra has been "tetracyclines can stain teeth" but it turns out that doxycycline does not, and we now have good evidence that there's no evidence of dental staining, enamel hypoplasia, or any kind of tooth color differences, with the more recent information that occurred where many, many children were doxycycline-exposed, because of an outbreak of Rocky Mountain Spotted Fever. We found no evidence of dental staining at all. So, doxycycline is the drug of choice, whether your patient is four months, fourteen years or forty years of age.

Dr. Smith: Right. Right. My guest is Dr. Mary Anne Jackson and she's the division director of infectious disease at Children's Mercy. So, bottom line is, we have to recognize the symptomatology, we have to act quickly on that with doxycycline, regardless of the age. I want to change focus here, just for a second, Dr. Jackson. You are also the editor of The Link, which is a monthly-written, digital newspaper. Could you tell us a little bit about that?

Dr. Jackson: Absolutely. The Link is a newsletter that we've published since 2009. It's distributed to pediatricians here locally, regionally, and across the United States. The purpose is solely education. We target five different themes within The Link. We target alerts, outbreaks and hot topics. We target vaccine education for physicians. We look at evidence-based practices for common clinical questions that arise in community pediatric practice. We have a visual clinical vignette each month, where a case that we've recently seen has occurred with a nice visual to go along with it, and physicians may actually test their own diagnostic skills based on the vignette. We also have a state of the art where we look at a common problem where physicians just may just not have the time to update their knowledge about something they don't see very frequently. So, we try to cover all the ballpark in trying to update information for physicians. It's short; it's structured. They can look at it at their own time frame and we know that it's very well received by physicians in our region. In fact, tick-borne infection is something we covered earlier this season, a month or two ago, and we've gotten a lot of good feedback on that--that pediatricians really appreciate having the information in a nutshell.

Dr. Smith: Is there a website for the link that you can share?

Dr. Jackson: There is. It's **www.childrensmercy.org (http://www.childrensmercy.org)**. And then, you just can search for The Link, and we'll pull it right up on the public site.

Dr. Smith: Got you. Okay. Got you. Well, Dr. Jackson, I want to thank you for all the work that you're doing. It sounds like you're going to be busy this time of the year and thank you for coming on this show. You're listening to Transformational Pediatrics from Children's Mercy Kansas City. For more information, you can go to childrensmercy.org. That's childrensmercy.org. I'm Dr. Mike Smith. Thanks

for listening.