

AGROMEDICINE PROGRAM UPDATE

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PROGRAM NOTES

>It felt like fall last week, now it's summer in the Holy City again this week, but whatever season, Dr. Frithsen and I are ready and willing to make presentations to lay and professional groups where you live!

In the last month we've made presentations on insect bites and stings, pesticide poisoning and heat-related illnesses, been on TV to talk about stinging caterpillars and had a letter to the editor published regarding the rarity of brown recluse spider bites in South Carolina.

Pick up the phone and give us a call if you need a speaker!

>Dr. Frithsen was in Clemson in early October to talk to the entomology students about the intersection of medicine and entomology

RECENT CONSULTS

>Several calls this month have concerned suspected insect bites, most without a "culprit" insect seen. One

caller had multiple "stings" that looked like those from a fire ant, but without the immediate "fire." Pustules developed with surrounding erythema and itching with gradual resolution. She stated that she had experienced "normal" fire ant stings and certainly knew what they were like.

Has anyone else had a patient like this?

We suggested tightly knit skin coverings (hose or tights on legs, long-sleeve turtle-neck shirt) to decrease likelihood of bites/stings, and to capture an insect, if possible, for identification.

Since no culprit was seen, perhaps this is another skin and soft tissue infection (SSTI) due to Staph or other skin flora.

Another caller had what they thought was a sting from an unseen insect in wrapping paper around a purchase from a large "furniture barn." When there was still "something there" more than 3 weeks after the event, the patient visited a dermatologist who diag-

nosed folliculitis and treated for community-associated methicillin-resistant *Staph aureus* (MRSA) (a clinical diagnosis, not based on culture).

I saw three members of a family last week whose home had been treated multiple times for "bedbugs" due to recurrent "bites" on the extremities and buttocks. No bedbugs had been identified in the home. Only one member of the family had active lesions, a four-year old, with what appeared to be a furuncle on the buttocks. Culture grew MRSA.

The bottom line—think about MRSA as a cause of what may look like an insect bite or sting or a true complication of an insect bite or sting.

SPECIAL ARTICLE

Human Illness Associated with Raw Milk Consumption

Pasteurization involves heating of milk to reduce the spread of diseases caused by bacteria that are commonly found in milk and milk

products. This process has been used since the early 1900's, yet some consumers claim pasteurization is unnecessary. They feel that raw or unpasteurized milk is healthier and tastes better than the pasteurized version.

The sale of raw or unpasteurized milk is illegal in many states and federal law prohibits interstate commerce of raw milk. However, South Carolina is among 27 states that do allow the sale of raw milk. Farmers who sell raw milk must obtain a permit from DHEC and are allowed to sell the milk either directly to consumers or in certain retail establishments.

Due to concerns that raw milk can contain harmful bacteria, a study was conducted in Wisconsin to examine the presence of certain bacteria in raw milk. The results of that study were recently presented at an international conference.

Random sampling of bulk-tank milk from Wisconsin dairy farms showed that 76% of the milk samples contained *C. burnetii* and 5% contained *L. monocytogenes*. *C. burnetii* is the organism known to cause Q fever. Clinical manifestations of Q fever include fever lasting for 1-2 weeks, malaise and various GI symptoms that can result in significant weight loss or hepatitis. Respiratory symptoms can include cough and chest pain with

pneumonia occurring in up to 50% of symptomatic cases.

Cattle, sheep and goats are rarely affected by *C. burnetii*, but infected animals excrete the organisms in various body fluids including milk. While the highest concentrations of organisms are shed during the birthing process in amniotic fluid and the placenta, the most common mode of transmission to humans from infected animals is via inhalation of contaminated barnyard dust. Although the consumption of raw milk is less common mode of transmission, the CDC recommends using only pasteurized milk and milk products as part of their strategy for preventing transmission of Q fever.

The effects of *Listeria monocytogenes* are highly variable. Some studies suggest that up to 10% of humans may be asymptomatic carriers. However, it can also cause serious illness in certain populations. The greatest risk is among pregnant women as *Listeria* infection can cause intrauterine or cervical infections leading to 2nd or 3rd trimester spontaneous abortion or stillbirth. In 2000, there was an outbreak of *Listeria* in North Carolina which was traced to consumption of cheese made from raw milk. Of 10 pregnant women who were found to be infected with *Listeria*, 5 had stillbirths, 3 delivered prematurely and 2 newborns were

infected. In addition to these pathogens, raw milk has been linked to foodborne illnesses caused by *Escherichia Coli* (including O157:H7), *Campylobacter jejuni*, *Salmonella*, and *Staphylococcus* among other organisms.

The CDC and FDA both recommend that everyone should avoid raw milk and points out that it has not been proven to have any health benefits over pasteurized milk. They also note that raw milk is especially dangerous for pregnant women (or those who may become pregnant), children, the elderly, and those who are immunocompromised due to HIV, cancer treatment or other reasons.

--Ivar Frithsen, MD

References:

Gibbons-Burgener, Suzanne, et al. Estimating the Prevalence of *Coxiella burnetii* and *Listeria monocytogenes* in Raw Milk from Wisconsin Dairy Herds. Presented at The International Conference on Diseases in Nature Communicable to Man. August 12-14, Madison Wisconsin.

US Food and Drug Administration, Bad Bug Book: Foodborne Pathogenic Microorganisms and Natural Toxins Handbook; *Listeria monocytogenes*.

Centers for Disease Control and Prevention. Outbreak of Listeriosis Associated With Homemade Mexican-Style Cheese: North Carolina, October 2000-January 2001. MMWR 2001; 50(26):560-2.

Watch for completion of our well wa ter story next month