Enteric Pathogens of Interest in El Paso, TX

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Recent studies indicate that Salmonella infections still cause extensive morbidity and mortality worldwide. Invasive Salmonella infection is an important health problem that is worsening because of the rising antimicrobial resistance and a changing Salmonella serovar spectrum. A vaccine that prevents systemic Salmonella infections is urgently needed, but suitable antigens remain largely unknown. An estimated 1.2 million Salmonella infections occur each year in the United States; of these, approximately 42,000 are laboratory-confirmed cases reported to the CDC. It is estimated that 96% of Salmonella infection cases are not confirmed by a laboratory test and not reported to local health authorities.

Salmonella infection is often characterized by enteritis. However, some serotypes tend to induce a systemic disease with mild enteric symptoms. The adaptation of Salmonella to the inflamed intestinal lumen associated with a massive inflammatory response that leads to diarrhea, generates perfect conditions for pathogen transmission. Clinical features of Salmonella infection demonstrate strong resemblance to other foodborne pathogens, which complicates its diagnosis. A Salmonella infection can only be confirmed by the isolation of Salmonella Spp. from a clinical sample, such as stool.

A Salmonella infection can be acquired at all ages, but those at greater risk of presenting complicated disease scenarios include infants, the elderly and immunocompromised persons. All infections in humans are due to one single Salmonella species, named Salmonella enterica subsp. enterica, which includes more than 2,400 serotypes. Enteritidis, Typhimurium, and Newport are the most frequently reported serotypes associated with human disease.

For the year 2013, there were 120 laboratory-confirmed Salmonella infection cases in El Paso TX, which according to CDC estimations, only represents about 4% of the total cases. One of the challenges for public health is to identify unrecognized major sources of Salmonella infections, and this can best be accomplished by improving the detection of dispersed outbreaks through collaboration among the health care providers, laboratories, and local public health authorities.

Cyclospora, an emerging pathogen in Texas. Cyclospora cayetanensis, a coccidian parasite, can cause gastrointestinal illness in humans and is characterized by watery persistent diarrhea and abdominal pain. The parasite is acquired through food and waterborne sources, particularly by consumption of contaminated fresh fruits and vegetables.

Cyclosporiasis is considered an emerging disease of public health concern. During 2013 Texas had 351 more cases of Cyclosporiasis than any other state; this outbreak was associated with consumption of fresh cilantro. For the first seven months of 2014, The Texas Department of State Health Services had received reports of 77 Cyclosporiasis cases from around Texas, including 69 between June-July; although a common food source has not been identified yet, the state along with local health departments are collaborating to gather information and identify the cause.

Texas Department of State Health Services encourages health care providers to test patients for Cyclospora if they have prolonged diarrheal illness accompanied by a severe loss of appetite or fatigue. Detection of the Cyclospora parasite is based on the identification of oocysts in stool specimens of affected patients using modified acid fast staining (O & P test), this test requires submission of three specimens.

If you have any questions regarding this article or on reporting a Salmonella infection, Cyclosporiasis or any other foodborne pathogen, please contact: Susana Barrera, PhD at BarreraSP@elpasotexas.gov

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