

Shigellosis

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Shigellosis is an acute enteric disease caused by gram-negative bacteria of the genus *Shigella*. There are four different species that are responsible for disease in the United States. *Shigella sonnei* comprises approximately 60 - 80% of all reported cases followed by *S. flexneri*, *S. boydii* and *S. dysenteriae*. In the United States, an estimated 300,000 cases and 600 deaths from shigellosis occur annually.

Symptoms of shigellosis include watery or bloody diarrhea, high fever and abdominal cramps, which begin 1 to 3 days after exposure. Severe disease with high fever may be associated with seizures, especially in young children and the elderly. Asymptomatic cases do occur and can be a source for outbreaks. Infants, the elderly and the infirm, and immune compromised are susceptible to the severest symptoms of disease, but all humans are susceptible to some degree. The usual duration of carriage of untreated shigellosis is 1-4 weeks although long term carriage may rarely develop. Unlike the other common causes of bacterial enteritis (*Salmonella* and *Campylobacter*) there are no known animal reservoirs other than primates. Transmission is directly from an infected person to others or indirectly through other vehicles including food and water. It takes very few organisms (10-100) to cause disease, resulting in greater person to person and fomite transmission than seen in other common bacterial diarrheas. Daycare outbreaks are a common source of transmission and may result in community outbreaks. Foodborne outbreaks have been linked to infected foodhandlers or to food exposed to contaminated water. Waterborne outbreaks have been associated with both drinking and recreational waters.

In the ten year period of 1988 to 1997, confirmed reports of *Shigella* in Florida have ranged from a low of 1409 cases in 1991 to a high of 2876 in 1994 with a mean of 1942 cases per year (14.7 per 100,000). The 1 to 4 year old age group has consistently had the highest incidence, averaging 106 cases per 100,000 population during the last five years. Consistently, day care attendance has been reported for over 60% of the 1 to 4 year olds, with over 60% of these day care cases associated with outbreaks. Outbreaks are reported for less than a third of the non-day care cases in the 1 to 4 year age group. In Florida, seasonal trends occur with the highest number of cases reported in June and the lowest in January.

In a January 1, 1995 to July 31, 1996 study of antibiotic resistance for shigella cases in Hillsborough County, 48.7% of the cultures were resistant to ampicillin and 9.4% to trimethoprim/sulfamethoxazol (STX). Of the cultures resistant to ampicillin, 7% were also resistant to STX, which greatly limits treatment choices in children. The decision to treat shigellosis depends upon the severity of the illness and the likelihood of disease transmission. Treatment may shorten the duration of the illness and/or eliminate the organism from the feces, thereby preventing the spread of the organism; but most cases recover promptly without treatment.

Controlling outbreaks of shigellosis is difficult, and each situation must be evaluated individually. Ensuring adequate handwashing is the most important means of controlling the spread of *Shigella*. Control methods used in day cares have included increased hygiene, excluding individuals, cohorting and antimicrobial therapy. Closing day care centers or exclusion of children for extended periods of time may result in spread of disease to other centers as well as severe hardship on families.

References:

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