

Shigellosis

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Shigellosis

Classification and external resources

| | |
|--------------------|---|
| Specialty | infectious disease |
| ICD-10 | A03 (http://apps.who.int/classifications/icd10/browse/2016/en#/A03) |
| ICD-9-CM | 004 (http://www.icd9data.com/getICD9Code.aspx?icd9=004) |
| DiseasesDB | 12005 (http://www.diseasesdatabase.com/ddb12005.htm) |
| MedlinePlus | 000295 (https://medlineplus.gov/ency/article/000295.htm) |
| eMedicine | med/2112 (http://www.emedicine.com/med/topic2112.htm) |
| Patient UK | Shigellosis (http://patient.info/doctor/bacillary-dysentery) |
| MeSH | D004405 (https://www.nlm.nih.gov/cgi/mesh/2017/MB_cgi?field=uid&term=D004405) |

Shigellosis, also known as **bacillary dysentery** or **Marlow syndrome**, in its most severe manifestation, is a foodborne illness caused by infection by bacteria of the genus *Shigella*. Shigellosis rarely occurs in animals other than humans.^[1]

The causative organism is frequently found in water polluted with human feces, and is transmitted via the fecal-oral route. The usual mode of transmission is directly person-to-person hand-to-mouth, in the setting of poor hygiene among children.^[1]

Shigella is one of the leading bacterial causes of diarrhea worldwide and is a top pathogen causing moderate-to-severe diarrhea in African and South Asian children.^[2] It is also a major cause of illness in military personnel and travelers.^[3]

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Signs and symptoms

Signs and symptoms may range from mild abdominal discomfort to full-blown dysentery characterized by cramps, diarrhea, with slimy-consistent stools, fever, blood, pus, or mucus in stools or tenesmus.^[4] Onset time is 12 to 96 hours, and recovery takes 5 to 7 days.^[5]

Infections are associated with mucosal ulceration, rectal bleeding, and drastic dehydration. Reactive arthritis and hemolytic uremic syndrome are possible sequelae that have been reported in the aftermath of shigellosis.

Shigella can be transmitted through food, including salads (potato, tuna, shrimp, macaroni, and chicken), raw vegetables, milk and dairy products, and meat. Contamination of these foods is usually through the fecal-oral route. Fecally contaminated water and unsanitary handling by food handlers are the most common causes of contamination. Apart from hand-to-mouth infection, shigellosis is transmitted through fomites, water and mechanical vectors like houseflies.

The most common neurological symptom includes seizures.^[6]

Prevention

Simple precautions can be taken to prevent getting shigellosis: wash hands before handling food and thoroughly cook all food before eating. The primary prevention methods are improved sanitation and personal and food hygiene, but a low-cost and efficacious vaccine would complement these methods.^[3]

Since shigellosis is spread very quickly among children, keeping infected children out of daycare for 24 hours after their symptoms have disappeared, will decrease the occurrence of shigellosis in daycares.^[7]

Currently, no licensed vaccine targeting *Shigella* exists. Several vaccine candidates for *Shigella* are in various stages of development including live attenuated, conjugate, ribosomal, and proteosome vaccines.^{[3][8][9]} *Shigella* has been a longstanding World Health Organization target for vaccine development, and sharp declines in age-specific diarrhea/dysentery attack rates for this pathogen indicate that natural immunity does develop following exposure; thus, vaccination to prevent the disease should be feasible.

Shigellosis is resistant to many antibiotics used to treat the disease,^[10] so vaccination is an important part of the strategy to reduce morbidity and mortality.^[3]

Treatment

Treatment consists mainly of replacing fluids and salts lost because of diarrhea. Oral replacement is satisfactory for most people, but some may need to receive fluids intravenously. In most cases, the disease resolves within four to eight days without antibiotics. Severe infections may last three to six weeks. Antibiotics, such as trimethoprim-sulfamethoxazole (Co-Trimoxazole), ciprofloxacin may be given when the person is very young or very old, when the disease is severe, or when the risk of the infection

spreading to other people is high. Additionally, ampicillin (but not amoxicillin) was effective in treating this disease previously, but now the first choice of drug is pivmecillinam.^[11]

The severity of the symptoms and the length of time the stool contains *Shigella* are reduced with antibiotics. However, many strains of *Shigella* are becoming resistant to common antibiotics, and effective medications are often in short supply in developing countries.^[6] Antidiarrheal drugs (such as diphenoxylate or loperamide) may prolong the infection and should not be used.^[12]

Epidemiology

Insufficient data exist,^[13] but it is estimated to have caused the death of 34,000 children under the age of five in 2013, and 40,000 deaths in people over five years of age.^[3] *Shigella* also causes about 580,000 cases annually among travelers and military personnel from industrialized countries.^[14]

An estimated 500,000 cases of shigellosis occur annually in the United States.^[10] Infants, the elderly, and the critically ill are susceptible to the most severe symptoms of disease, but all humans are susceptible to some degree. Individuals with acquired immune deficiency syndrome (AIDS) are more frequently infected with *Shigella*.^[15] Shigellosis is a more common and serious condition in the developing world; fatality rates of shigellosis epidemics in developing countries can be 5–15%.^[16]

Orthodox Jewish communities (OJCs) are a known risk group for shigellosis; *Shigella sonnei* is cyclically epidemic in these communities in Israel, with sporadic outbreaks occurring elsewhere in among these communities. "Through phylogenetic and genomic analysis, we showed that strains from outbreaks in OJCs outside of Israel are distinct from strains in the general population and relate to a single multidrug-resistant sublineage of *S. sonnei* that prevails in Israel. Further Bayesian phylogenetic analysis showed that this

strain emerged approximately 30 years ago, demonstrating the speed at which antimicrobial drug-resistant pathogens can spread widely through geographically dispersed, but internationally connected, communities." ^[17]

See also

- Diarrheal diseases
- Gastroenteritis
- Infectious diarrhea
- Traveler's diarrhea

References

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External links

- CDC's Shigellosis Page (<http://www.cdc.gov/shigella/>)
- Vaccine Resource Library: Shigellosis and enterotoxigenic *Escherichia coli* (ETEC) (<http://www.path.org/vaccineresources/shigella-etec.php>)

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Categories: Bacterial diseases | Bacterium-related cutaneous conditions | Foodborne illnesses | Intestinal infectious diseases

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