

Shigellosis

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Diarrheal illness remains one of the leading causes of morbidity and mortality worldwide, despite ongoing trials to understand its epidemiology, pathogenesis, and treatment. Shigellosis is one of the acute infectious disease that cause an estimated 150 million cases and 600,000 deaths annually, it is responsible for 10% of all cases of diarrhea among children <5 years of age living in developing countries [1] and can cause disease after ingestion of 10 bacterial cells only [2]. So there is a need to revisit shigellosis epidemiology to see if it is following the global trend of diarrheal diseases, or if it has its own unique evolutionary profile.

Shigellosis caused by one of four serogroups with multiple serotypes: A (*S dysenteriae*, 12 serotypes); B (*S flexneri*, 6 serotypes); C (*S boydii*, 18 serotypes); and D (*S sonnei*, 1 serotype). They are transmitted by fecal-oral route, water, food, fomites, flies and direct contact to a diseased person or carrier. The symptoms include abdominal pain, tenesmus, watery diarrhea, and/or dysentery [3]. Once ingested, *Shigella* moves down to the colon where it gains access to the intestinal mucosa by invading specialized epithelial cells, the M cells in Peyer's patches, and subsequently infecting adjacent cells in intestinal crypts. Once the bacteria reach the lymphoid follicles, they encourage macrophages to multiply, induce apoptosis and give rise to an inflammatory response, the hallmark of this enteric disease [4]. Diagnosis depends on direct plating of fecal specimens onto MacConkey, Salmonella-Shigella, Xylose lysin deoxycholate and Hectoen enteric agar media, isolates were confirmed biochemically and by API 20E system and serotyped by antisera. Recently immunofluorescence techniques, direct polymerase chain reaction and multiplex PCR assays detecting *Shigella* enterotoxins (*set1A*, *set1B* and *sen*) invasion-associated locus (*ial*), invasive plasmid antigen (*ipaH*), and *virF* virulence genes were used [5]. *Shigella* was not only susceptible to ampicillin and sulphamethoxazole-trimethoprim but also to ceftriaxone, nalidixic acid and ciprofloxacin as a drug of choice for all patients with bloody diarrhea, regardless of their age [6,7]. Qiu et al. [8] described the first isolation of a new *Shigella flexneri* serotype 4s, which is a clone of the *S. flexneri* serotype X variant in Beijing, China, and concern with multidrug resistance. Due to rising drug resistance, the importance of better pathogen detection, vaccine design and the use of vaccines as a preventive measure against intestinal infections had

emerged. Special attention is paid to OMP38, a protein isolated from *S. flexneri* 3a outer membrane. Since it is known that this protein has good immunogenic properties, it can be used as an antigen or carrier for conjugate vaccines [9].

The most important thing you can do to prevent shigellosis is to wash your hands thoroughly with soap and warm water after the use of bathroom and before eating or preparing food. Remind everyone else in your family especially children to do the same. After someone with shigellosis uses a toilet, it should be cleaned and disinfected before anyone else uses it. By following these simple steps, you can help keep yourself and everyone in your family healthy.

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