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Typhoid fever is a deadly disease caused by Salmonella Typhi. Paratyphoid fever is a deadly disease caused by Salmonella Paratyphi. How many people have typhoid fever and paratyphoid fever each year? Worldwide, typhoid fever affects about 11 to 21 million people and paratyphoid fever affects about 5 million people each year. In the United States each year, approximately 350 people are diagnosed with typhoid fever and 90 people are diagnosed with paratyphoid fever each year. These cases do not include people who do not seek medical attention, or whose illness is not reported to the CDC. The CDC estimates that typhoid fever affects 5,700 people in the United States each year. The CDC did not make estimates for Salmonella Paratyphi. Most people diagnosed in the United States have traveled to places where diseases are most common. Where are the most common diseases? Typhoid fever and paratyphoid fever are most common in areas of the world where food and water can be dangerous and sanitation is poor. Travellers to South Asia, particularly Pakistan, India and Bangladesh, should take precautions to prevent infection. Typhoid fever and paratyphoid fever are somewhat less common in East Asia, Africa, the Caribbean and Central and South America. Both diseases are rare in the United States, Canada, Western Europe, Australia or Japan. How do typhoid fever and paratyphoid fever spread? These diseases are spread by contaminating wastewater from food or water and by person-to-person contact. People who are currently sick and people who have recovered but are still passing the bacteria in their poo (saddles) can spread Salmonella Typhi or Salmonella Paratyphi. You can get typhoid fever or paratyphoid fever if you eat food or drink a drink that has been touched by a person who is excretion (get rid of) Salmonella Typhi or Paratyphi in their and who has not washed their hands thoroughly after going to the bathroom. Wastewater contaminated with Salmonella Typhi or Salmonella Paratyphi enters the water you drink. Wastewater contaminated with Salmonella Typhi or Salmonella Paratyphi enters the water used to rinse the food you eat raw. What happens if you eat or drink something contaminated with Salmonella Typhi or Salmonella Paratyphi? If you consume a food or drink contaminated with Salmonella Typhi or Salmonella Paratyphi, the bacteria can multiply and spread to the bloodstream, causing typhoid fever or fever How can I protect myself from typhoid fever and paratyphoid fever? If you are planning to travel outside the United States ted, you should do the following: Can animals spread typhoid fever or paratyphoid fever to people? Lol Salmonella Typhi and Salmonella Paratyphi live only in humans. Animals can spread other types of Salmonella to humans, so it is important to wash your hands after contact with animals, their, or places where animals live, feed or roam. Get more tips Not to be confused with Typhus. Bacterial infection due to a specific type of Salmonella typhoid feverTwo namesSlow fever, typhoidRose spots on the chest of a person with typhoid feverSpecialtyInfectious diseaseSymptomsFever, abdominal pain, headache. rash[1]Usual onset6-30 days after exposure[1][2]CausesSalmonella subs. enterica (spread by food or water contaminated with feces)[3]Risk factorsPoor sanitation, poor hygiene[3] Diagnostic methodRial culture, DNA detection[3][3][3]Differential DiagnosisThe infectious diseases[6]Vaccine anti-typhoid prevention, handwashing[2][7]TreatmentAntibiotics[3]Frequency12.5 million (2015)[8]Deaths149,000 (2015)[9] Typhoid fever, also known simply as typhoid , is a bacterial infection caused by a specific type of Salmonella that causes symptoms. [3] Symptoms can range from mild to severe, and usually begin 6 to 30 days after exposure. [1] [2] Often there is a gradual onset of a high fever over several days. [1] This is usually accompanied by weakness, abdominal pain, constipation, headaches, and mild vomiting. [2] Some people develop a rash with pink spots. [2] In severe cases, people may experience confusion. [6] Without treatment, symptoms can last for weeks or months. [2] Diarrhea is rare. [6] Other people may carry the bacteria unaffected, but they are still able to spread the disease to others. [4] Typhoid fever is a type of enteric fever, along with paratyphoid fever. [3] The cause is salmonella enterica subsp. enterica serovar Typhi growing in the intestines and blood. [2] [6] Typhoid spreads by eating or drinking food or water contaminated by the feces of an infected person. [4] Risk factors include poor sanitation and poor hygiene. [3] Those travelling to developing countries are also at risk. [6] Only humans can be infected. [4] The symptoms are similar to those of many other infectious diseases. [6] The diagnosis is either by presenting the bacteria or detecting their DNA in the blood, stool or bone marrow. [2] [3] [5] Growing the bacteria can be difficult. [10] The bone marrow test is the most accurate. [5] A typhoid vaccine can prevent about 40-90% of cases in the first two years. [7] The vaccine may have some effect for up to seven years. [3] For high-risk individuals or people travelling to areas where the disease is common, vaccination is recommended. [4] Other efforts to prevent the disease include providing clean drinking water, good and hand washing. [2] [4] Until a person's infection is confirmed as being cleared, the person should not prepare food for others. [2] The disease is treated with antibiotics such as azithromycin, fluoroquinolones, or third generation cephalosporins. [3] Resistance to these antibiotics has developed, which has made treatment of the disease more difficult. [3] [11] In 2015, 12.5 million new cases worldwide were reported. [8] The disease is the most common in India. [3] Children are most often affected. [3] [4] Disease rate developed countries in the 1940s through improved sanitation and the use of antibiotics to treat the disease. Each year in the United States, approximately 400 cases are reported and the disease occurs in approximately 6,000 people. [6] [12] In 2015, it caused about 149,000 deaths worldwide, up from 181,000 in 1990 (about 0.3% of the world total). [9] [13] The risk of death may be as high as 20% without treatment. [4] With treatment, it is between 1 and 4%. [3] Typhus is a different disease. [14] However, the typhoid name means typhus-like because of the similarity in the symptoms. [15] Read media Video Summary (script) Signs and symptoms Pink spots on the chest of a person with typhoid fever Classically, the progression of untreated typhoid fever is divided into four distinct stages, each lasting about one week. During these steps, the patient becomes exhausted and emaciated. [16] In the first week, body temperature rises slowly, and fever fluctuations are seen with relative bradycardia (Faget sign), malaise, headache, and cough. A bloody nose (epistaxis) is seen in a quarter of cases, and abdominal pain is also possible. A decrease in the number of circulating white blood cells (leukopenia) occurs with eosinopenia and relative lymphocytosis; blood crops are positive for Salmonella enterica subsp. Typhi serovar enterica serovar. The Widal test is usually negative in the first week. [17] In the second week, the person is often too tired to get up, with a high fever in the plateau around 40 degrees Celsius (104 degrees Fahrenheit) and bradycardia (sphygmothermic dissociation or faget sign), classically with a dirotic pulse wave. Delirium can occur, where the patient is often calm, but sometimes becomes restless. This delirium led to the typhoid receiving the nickname nervous fever. Rose spots appear on the lower chest and abdomen in about a third of patients. Rhonchus (clicking breathing noises) are heard at the base of the lungs. The abdomen is distended and painful in the right lower quadrant, where a rumble can be heard. Diarrhea can occur at this stage, but constipation is also common. The spleen and liver are enlarged (hepatosplenomegaly) and tender, and liver transaminases are elevated. The Widal test is highly positive, with antiO and antiH antibodies. Blood cultures are sometimes still positive at this stage. In the third week of typhoid fever, a number of complications can occur: intestinal hemorrhage due to bleeding in clotted Peyer spots occurs; (this can be very serious, but is generally not fatal. Intestinal perforation in the distal ileum is a very serious complication is frequently fatal. It can occur without alarming symptoms until sepsis or diffuse peritonitis sets in. Encephalitis Respiratory diseases such as pneumonia and acute bronchitis Neuropsychiatric symptoms (described as mumbling delirium or watch coma), with picking at sheets or imaginary metastatic abscess objects, cholecystitis, endocarditis, and osteitis fever is still very high and oscillates very little over 24 hours. Dehydration ensues, and the patient is delusional (typhoid condition). One third of affected individuals develop a macular rash on the trunk. A small number of platelets (thrombocytopenia) can sometimes be observed. [18] Causes A 1939 conceptual illustration showing various ways that typhoid bacteria can contaminate a water well (center) Bacteria The gran-negative bacterium that causes typhoid fever is Salmonella enterica subsp. Typhi serovar enterica serovar. Based on the MLST subtyping system, the two main types of S. Typhi sequences are ST1 and ST2, which are currently widespread worldwide. [19] Global phylogenetic analysis showed the dominance of a haplotype 58 (H58) that probably began in India in the late 1980s and is now spreading around the world carrying multidrug resistance. [20] A recently proposed and more detailed genotyping system was reported in 2016 and has been widely used ever since. This pattern reclassified the H58 nameacclimated to genotype 4.3.1. [21] Transmission Unlike other strains of Salmonella, no animals carry typhoid are known. [22] Humans are the only known carriers of the bacteria. [22] S. enterica subsp. enterica serovar Typhi is transmitted through the fecal-oral route by individuals who are currently infected and asymptomatic carriers of the bacterium. [22] An asymptomatic human carrier is an individual who still excretes typhoid bacteria in their stools one year after the acute stage of infection. [22] Diagnostic Diagnosis is done by any blood, bone marrow, or stool culture and with the Widal test (demonstration of antibodies against Salmonella O-somatic and H-flagellar antigens). In epidemics and less affluent countries, after excluding malaria, dysentery or pneumonia, a therapeutic trial with chloramphenicol is usually undertaken pending the results of the Widal test and blood and stool cultures. [23] Widal test widal test card Widal test is used to identify specific antibodies in the serum of people with typhoid using antigen-antibody interactions. In this test, the serum is mixed with a dead bacterial suspension of salmonella having specific antigens on it. If the patient's serum carries antibodies against these antigens, they attach to them forming an agglomeration that indicated the positivity of the test. If clumping does not occur, the test is negative. The Widal test takes a long time and is subject to significant false positive results. The test may also be falsely negative at the onset of the disease. However, unlike the Typhidot test, the Widal test quantifies the specimen with titles. [24] Rapid Diagnostic Tests such as Tubex, Typhidot, and Test-It showed moderate diagnostic accuracy. [25] Typhidot The test is based on the presence of IgM and IgG antibodies specific to a specific 50kD OMP antigen. This test is performed on a cellulose nitrate membrane where a specific external membrane of S. typhi typhi is attached as fixed test lines. It separately identifies IgM and IgG antibodies. IgM shows a recent infection while IgG means remote infection. The sample buffer of this kit contains the gold-anti-human colloidal IgG or gold-anti-human IgM. If the sample contains IgG and IgM antibodies against these antigens, they will react and be turned red. This complex will continue to advance and the IgG and IgM antibodies will attach to the first test line where the IgG and IgM antibodies are present giving a pink-purple band. This complex will continue to move further and reach the control line which consists of anti-mouse rabbit antibodies that bend the anti-human mouse IgG or IgM antibodies. The main purpose of the control line is to indicate an appropriate migration and reactive color. The typhidot test becomes positive within 2 to 3 days of infection. Two coloured stripes indicate a positive test. A single control line strip indicates a negative test. A single fixed front-line band or no tapes at all indicates invalid tests. The most important limitation of this test is that it is not quantitative and that the result is only positive or negative. [26] Tubex test Tubex test contains two types of brown particles magnetic particles covered with antigen particles and blue indicators covered with O9 antibodies. During the test, if antibodies are present in the serum, they will attach to the brown magnetic particles and settle at the base and the blue indicator particles remain in the solution giving a blue color that indicates the positivity of the test. If the serum has no antibodies, then the blue particle attaches to the brown particles and settles at the bottom without giving color to the solution, which means that the test is negative and they do not have typhoid. [27] The prevention doctor administering a typhoid vaccination at a school in San Augustine County, Texas, 1943 sanitation and hygiene are important to prevent typhoid. It can only spread in environments where human feces are able to come into contact with food or drinking water. Careful food preparation and hand washing are essential to prevent typhoid. Industrialization, and in particular the invention of the automobile, has greatly contributed to the elimination of typhoid fever, as it has eliminated the public health risks associated with the use of horse manure on public streets, which has led to a large number of flies[28], which are known as vectors of many pathogens, including Salmonella spp. [29] According to statistics from the U.S. Centers for Disease Control and Prevention. [29] According to statistics from the U.S. Centers for Disease Control and Prevention. [29] , chlorination of drinking water a dramatic decrease in typhoid fever transmission in the United States. [30] Vaccination Two typhoid vaccines are approved for the prevention of typhoid:[7] the live and oral Ty21a vaccine (sold as Vivovif by Crucell [Switzerland AG] and the injectable vaccine against typhoid polysaccharoid (sold as Typhim Vi by Sanofi Pasteur and Typherix by para Both are effective and recommended for travellers in areas where typhoid is endemic. Recalls are recommended every five years for the oral vaccine and every two years for the injectable form. [7] An older and killed whole cell vaccine is still used in countries where newer preparations are not available, but this vaccine is no longer recommended for use because it has a higher rate of side effects (mainly pain and inflammation at the injection site). [5] To help reduce typhoid fever levels in developing countries, the World Health Organization (WHO) has approved the use of a vaccination programme from 1999. Vaccinations have proven to be an excellent way to control outbreaks in high-incidence areas. Just as important, it is also very profitable. Vaccination prices are normally low, less than US\$1 per dose. Because the price is low, poor communities are more willing to take advantage of vaccinations. [32] Although typhoid vaccination programs have been shown to be effective, they alone cannot eliminate typhoid fever. [32] Combining vaccine use with increased public health efforts is the only proven way to control this disease. [32] Since the 1990s, two vaccines against typhoid fever have been recommended by WHO. The ViPS vaccine is given by injection, while Ty21a is taken in capsules. Only people 2 years of age or older are recommended to be vaccinated with the ViPS vaccine, and it requires revaccination after 2-3 years with a vaccine efficacy of 55 to 72%. The alternative vaccine Ty21a is recommended for people 5 years of age or older, and has a duration of 5-7 years with a vaccine efficacy of 51 to 67%. The two different vaccines have been proven to be a safe and effective treatment for the fight against epidemic diseases in several regions. [32] A combined version of hepatitis A is also available. [33] Results from a Phase 3 trial of the typhoid conjugate vaccine (TCV) in December 2019 reported 81% fewer cases in children. [34] [35] Treatment Oral Rehydration Therapy The rediscovery of oral rehydration therapy in the 1960s provided a simple way to prevent many deaths from diarrhoeal diseases in general. [36] Antibiotics When resistance is rare, the treatment of choice is a fluoroquinolone like ciprofloxacin. [37] Otherwise, a third-generation cephalosporin such as ceftriaxone or cefotaxime is the first choice. [39] [40] [41] [42] Cefixime is an appropriate oral alternative. [43] [44] Typhoid fever, when properly treated, is not fatal in most cases. Antibiotics, such as ampicillin, chloramphenicol, amoxicillin and ciprofloxacin, have been commonly used to treat typhoid fever. [45] Treatment of the disease with antibiotics reduces the case-fatality rate to about 1%. [46] Without treatment, some patients develop sustained fever, bradycardia, hepatosplenomegaly, abdominal symptoms, and occasionally, pneumonia. In white-skinned patients, pink spots, which fade under pressure, appear on the skin of the trunk up to 20% Case. In the third week, untreated cases can develop gastrointestinal and cerebral complications, which can be fatal in up to 10 to 20% of cases. The highest case case rates are reported in children under 4 years of age. About 2 to 5% of those who contract typhoid fever become chronic carriers, as bacteria persist in the bile tract after symptoms have resolved. [47] Surgery is usually indicated if intestinal perforation occurs. One study found a 30-day mortality rate of 9% (8/88) and surgical site infections at 67% (59/88), the burden of disease borne mainly by low-resource countries. [48] For surgical treatment, most surgeons prefer the simple closure of the perforation with the drainage of the peritoneum. Small bowel resection is indicated for patients with multiple perforations. If antibiotic treatment fails to eradicate hepatobiliary transport, the gallbladder must be resected. Cholecystectomy is sometimes successful, especially in patients with gallstones, but is not always successful in eradicating the carrier condition due to persistent liver infection. [49] Resistance As resistance to ampicillin, chloramphenicol, trimethoprim-sulfamethoxazole and streptomycin is now common, these agents are no longer used as a first-line treatment for typhoid fever. [51] Typhoid resistant to these agents is known as multidrug resistant typhoid. Resistance to ciprofloxacin is a growing problem, particularly in the Indian subcontinent and southeast Asia. Many centres are moving from using ciprofloxacin as the first line to treat suspected typhoid from South America, India, Pakistan, Bangladesh, Thailand or Vietnam. For these people, the recommended first-line treatment is ceftriaxone. In addition, azithromycin has been suggested to be better at treating resistant typhoid in populations than both fluoroquinolone drugs and ceftriaxone. [38] Azithromycin can be taken by mouth and is cheaper than ceftriaxone which is given by injection. [53] A separate problem exists with laboratory tests to reduce susceptibility to ciprofloxacin; current recommendations are that isolates should be tested simultaneously against ciprofloxacin (CIP) and nalidixic acid (NAL), and that IPC-sensitive isolates should be tested and NAL should be declared ciprofloxacin sensitive, but that IPC-sensitive but not NAL-sensitive isolates should be reported as reduced sensitivity to ciprofloxacin. However, an analysis of 271 isolates showed that about 18% of the isolates reduced sensitivity to fluoroquinolones, the class to which the IPC belongs , (MIC 0.125-1.0 mg/l) would not be captured by this method. [54] Epidemiology Main Article: Epidemiology of Typhoid Fever Incidence of Highly Endemic Typhoid Fever Endemic Sporadic Cases In 2000, typhoid fever caused approximately 21.7 million illnesses and 217,000 deaths. [5] It most often occurs in children and young adults between the age of 5 and 19. [55] In 2013, it resulted in approximately 181,000 in 1990. Infants, children and adolescents in Southeast Asia and Southeast Asia bear the greatest burden of the disease. [56] Outbreaks of typhoid fever are also frequently reported in sub-Saharan Africa and Southeast Asian countries. [57] [58] [59] In the United States, approximately 400 cases occur each year, and 75% of them occur on trips abroad. [60] [61] Historically, before the antibiotic era, the casey rate of typhoid fever was 10-20%. Today, with rapid treatment, it is less than 1%. [62] However, about 3 to 5% of infected people develop a chronic infection in the gallbladder. [63] Since S. enterica subsp. Enterica serovar Typhi is the human-restricted, these chronic carriers become the crucial reservoir, which can persist for decades for further spread of the disease, further complicating the identification and treatment of the disease. [50] Lately, the study of S. enterica subsp. enterica serovar Typhi associated with a large epidemic and a carrier at the genome level provides new insights into the pathogenic pathogen. [64] [65] In industrialized countries, clean water and improved food handling have reduced the number of cases. [66] Developing countries, such as those found in parts of Asia and Africa, have the highest rates of typhoid fever. These areas do not have access to safe drinking water, adequate sanitation and adequate health care facilities. For these regions, such access to basic public health needs is not in the near future. [67] In 2004-2005, an epidemic in the Democratic Republic of Congo resulted in more than 42,000 cases and 214 deaths. [55] Since November 2016, Pakistan has experienced an outbreak of high-resistant typhoid fever (XDR). [68] History Spread During the treatment of a typhoid epidemic in a local village in 1838, the English field physician William Budd realized the oiso involved in infectious diseases multiplied in the intestines of patients, were present in their excretions, and could be transmitted to health through their consumption of contaminated water. [69] He proposed strict isolation or quarantine as a method to contain such outbreaks in the future. [70] The medical and scientific communities did not recognize the role of microorganisms in infectious diseases until the work of Robert Koch and Louis Pasteur in the 1880s. [71] [72] [73] Organization involved Alrnroth Edward Wright developed the first effective typhoid vaccine. In 1880, Karl Joseph Eberth described a bacillus that he suspected was the cause of typhoid. [74] [75] In 1884, pathologist Georg Theodor August Gaffky (1850-1918) confirmed Eberth's findings.[77] received names such as Eberth's bacillus, Eberthella Typhi and Gaffky-Eberth's bacillus. Today, the bacillus that causes typhoid fever is known as Salmonella enterica enterica, serovar Typhi. [78] Vaccine British bacteriologist Alrnroth Edward Wright first developed a typhoid vaccine at the Army School of Medicine in Netley, Hampshire. It was introduced in 1896 and used successfully by the British during the Boer War in South Africa. At that time, typhoid often killed more soldiers at war than lost to enemy combat. Wright then developed his vaccine in a newly opened research department at St Mary's Hospital Medical School in London from 1902, where he established a method to measure protective substances (opsonin) in human blood. Citing the example of the Second Boer War, [81] during which many soldiers died from easily preventable diseases, Wright convinced the British army that 10 million doses of vaccine should be produced for troops sent to the Western Front, saving up to half a million lives during The First World War[81] The British army was the only early combatant to have its troops fully vaccinated against the bacteria. For the first time, their losses from combat exceeded those of the disease. In 1909, Frederick F. Russell, a U.S. Army physician, adopted Wright's typhoid vaccine for use in the military, and two years later, his immunization program became the first in which an entire army was immunized. It eliminated typhoid as an important cause of morbidity and mortality in the U.S. military. Water chlorination Lizzie van Zyl was a child held in a British concentration camp in South Africa who died of typhoid fever during the Boer War (1899-1902). Most developed countries experienced a decline in typhoid fever levels throughout the first half of the 20th century due to vaccinations and advances in public sanitation and hygiene. In 1893, attempts were made to chlorinate the water supply in Hamburg, Germany and in 1897 Maidstone, England was the first city to have all its water supply chlorinated. In 1905, following an outbreak of typhoid fever, the city of Lincoln, England, instituted permanent chlorination of water. [85] The first permanent disinfection of drinking water in the United States was done in 1908 at the city of Jersey, New Jersey, the water supply. The decision to build the chlorination system was given to John L. Leal. [86] The chlorination facility was designed by George W. Fuller. [87] 20th century Mary Mallon (typhoid Mary) in a hospital bed (foreground): She was forcibly quarantined as a carrier of typhoid fever in 1907 for three years, then again from 1915 until her death in 1938. In 1902, guests at the town hall banquets in Southampton and Winchester, England, fell ill and four of them died, including the dealer of after eating oysters. The infection was caused by oysters from Emsworth, where oyster schools had been contaminated with raw sewage. [88] The most notorious carrier of typhoid fever, but by no means the most destructive, was Mary Mallon, known as Typhoid Marie. In 1907, it became the first carrier in the United States to be identified and traced. She was a cook in New York, which was associated with 53 53 and three deaths. [90] Terminology The disease has been mentioned by various names, often associated with symptoms, such as gastric fever, enteric fever, abdominal typhus, infant remission fever, slow fever, nervous fever, pythogen fever.[91] drain fever and low fever. [92] Notable cases See also. Category: Death of typhoid fever William Henry Harrison, the 9th president of the United States of America, died 32 days in his term, in 1841. This is the shortest term served by a president of the United States. Stephen A. Douglas, Abraham Lincoln's political opponent in 1858 and 1860, died of typhoid on June 3, 1861. William Wallace Lincoln, the son of U.S. President Abraham and Mary Todd Lincoln, died of typhoid in 1862. Martha, Bulloch Roosevelt, mother of President Theodore Roosevelt, died of typhoid fever in 1884. Edward VII of the United Kingdom, while still Prince of Wales, had an almost fatal case of typhoid fever in 1871. It was thought at the time that his father, Prince Consort Albert, had also died of typhoid fever (in 1861), but this is disputed. Leland Stanford Jr., son of American tycoon and politician A. Leland Stanford and eponymous of Leland Stanford Jr., died of typhoid fever in 1884 at the age of 15. Gerard Manley Hopkins, an English poet, died of typhoid fever in 1889. Lizzie van Zyl, a South African child held in the Bloemfontein concentration camp during the Second Boer War, died of typhoid fever in 1901. Dr HJH 'Tuy' Scott, captain of the 1886 Australian cricket team that visited England, died of typhoid in 1910. Arnold Bennett, an English novelist, died in 1932 of typhoid, two months after drinking a glass of water in a Parisian hotel to prove he was safe. Hakaru Hashimoto, a Japanese physician, died of typhoid fever in 1934. [100] See also Timeline of Jarisch-Herxheimer typhoid fever reaction Kauffman-White classification References - a b c d Newton AE (2014). 3 Travel-Related Infectious Diseases. CDC Health Information for International Travel 2014: The Yellow Book. ISBN 978019948489. Archived from the original on 2015-07-02. Typhoid fever is a b c d e f g h i j kTyphoid fever. cdc.gov. May 14, 2013. Archived from the original of June 6, 2016. Excerpted March 28, 2015. 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Typhoid fever is a deadly disease caused by Salmonella Typhi. Paratyphoid fever is a deadly disease caused by Salmonella Paratyphi. How many people have typhoid fever and paratyphoid fever each year? Worldwide, typhoid fever affects about 11 to 21 million people and paratyphoid fever affects about 5 million people each year. In the United States each year, approximately 350 people are diagnosed with typhoid fever and 90 people are diagnosed with paratyphoid fever each year. These cases do not include people who do not seek medical attention, or whose illness is not reported to the CDC. The CDC estimates that typhoid fever affects 5,700 people in the United States each year. The CDC did not make estimates for Salmonella Paratyphi. Most people diagnosed in the United States have traveled to places where diseases are most common. Where are the most common diseases? Typhoid fever and paratyphoid fever are most common in areas of the world where food and water can be dangerous and sanitation is poor. Travellers to South Asia, particularly Pakistan, India and Bangladesh, should take precautions to prevent infection. Typhoid fever and paratyphoid fever are somewhat less common in East Asia, Africa, the Caribbean and Central and South America. Both diseases are rare in the United States, Canada, Western Europe, Australia or Japan. How do typhoid fever and paratyphoid fever spread? These diseases are spread by contaminating wastewater from food or water and by person-to-person contact. People who are currently sick and people who have recovered but are still passing the bacteria in their poo (saddles) can spread Salmonella Typhi or Salmonella Paratyphi. You can get typhoid fever or paratyphoid fever if you eat food or drink a drink that has been touched by a person who is excretion (get rid of) Salmonella Typhi or Paratyphi in their and who has not washed their hands thoroughly after going to the bathroom. Wastewater contaminated with Salmonella Typhi or Salmonella Paratyphi enters the water you drink. Wastewater contaminated with Salmonella Typhi or Salmonella Paratyphi enters the water used to rinse the food you eat raw. What happens if you eat or drink something contaminated with Salmonella Typhi or Salmonella Paratyphi? If you consume a food or drink contaminated with Salmonella Typhi or Salmonella Paratyphi, the bacteria can multiply and spread to the bloodstream, causing typhoid fever or fever How can I protect myself from typhoid fever and paratyphoid fever? If you are planning to travel outside the United States ted, you should do the following: Can animals spread typhoid fever or paratyphoid fever to people? Lol Salmonella Typhi and Salmonella Paratyphi live only in humans. Animals can spread other types of Salmonella to humans, so it is important to wash your hands after contact with animals, their, or places where animals live, feed or roam. Get more tips Not to be confused with Typhus. Bacterial infection due to a specific type of Salmonella typhoid feverTwo namesSlow fever, typhoidRose spots on the chest of a person with typhoid feverSpecialtyInfectious diseaseSymptomsFever, abdominal pain, headache. rash[1]Usual onset6-30 days after exposure[1][2]CausesSalmonella subs. enterica (spread by food or water contaminated with feces)[3]Risk factorsPoor sanitation, poor hygiene[3] Diagnostic methodRial culture, DNA detection[3][3][3]Differential DiagnosisThe infectious diseases[6]Vaccine anti-typhoid prevention, handwashing[2][7]TreatmentAntibiotics[3]Frequency12.5 million (2015)[8]Deaths149,000 (2015)[9] Typhoid fever, also known simply as typhoid , is a bacterial infection caused by a specific type of Salmonella that causes symptoms. [3] Symptoms can range from mild to severe, and usually begin 6 to 30 days after exposure. [1] [2] Often there is a gradual onset of a high fever over several days. [1] This is usually accompanied by weakness, abdominal pain, constipation, headaches, and mild vomiting. [2] Some people develop a rash with pink spots. [2] In severe cases, people may experience confusion. [6] Without treatment, symptoms can last for weeks or months. [2] Diarrhea is rare. [6] Other people may carry the bacteria unaffected, but they are still able to spread the disease to others. [4] Typhoid fever is a type of enteric fever, along with paratyphoid fever. [3] The cause is salmonella enterica subsp. enterica serovar Typhi growing in the intestines and blood. [2] [6] Typhoid spreads by eating or drinking food or water contaminated by the feces of an infected person. [4] Risk factors include poor sanitation and poor hygiene. [3] Those travelling to developing countries are also at risk. [6] Only humans can be infected. [4] The symptoms are similar to those of many other infectious diseases. [6] The diagnosis is either by presenting the bacteria or detecting their DNA in the blood, stool or bone marrow. [2] [3] [5] Growing the bacteria can be difficult. [10] The bone marrow test is the most accurate. [5] A typhoid vaccine can prevent about 40-90% of cases in the first two years. [7] The vaccine may have some effect for up to seven years. [3] For high-risk individuals or people travelling to areas where the disease is common, vaccination is recommended. [4] Other efforts to prevent the disease include providing clean drinking water, good and hand washing. [2] [4] Until a person's infection is confirmed as being cleared, the person should not prepare food for others. [2] The disease is treated with antibiotics such as azithromycin, fluoroquinolones, or third generation cephalosporins. [3] Resistance to these antibiotics has developed, which has made treatment of the disease more difficult. [3] [11] In 2015, 12.5 million new cases worldwide were reported. [8] The disease is the most common in India. [3] Children are most often affected. [3] [4] Disease rate developed countries in the 1940s through improved sanitation and the use of antibiotics to treat the disease. Each year in the United States, approximately 400 cases are reported and the disease occurs in approximately 6,000 people. [6] [12] In 2015, it caused about 149,000 deaths worldwide, up from 181,000 in 1990 (about 0.3% of the world total). [9] [13] The risk of death may be as high as 20% without treatment. [4] With treatment, it is between 1 and 4%. [3] Typhus is a different disease. [14] However, the typhoid name means typhus-like because of the similarity in the symptoms. [15] Read media Video Summary (script) Signs and symptoms Pink spots on the chest of a person with typhoid fever Classically, the progression of untreated typhoid fever is divided into four distinct stages, each lasting about one week. During these steps, the patient becomes exhausted and emaciated. [16] In the first week, body temperature rises slowly, and fever fluctuations are seen with relative bradycardia (Faget sign), malaise, headache, and cough. A bloody nose (epistaxis) is seen in a quarter of cases, and abdominal pain is also possible. A decrease in the number of circulating white blood cells (leukopenia) occurs with eosinopenia and relative lymphocytosis; blood crops are positive for Salmonella enterica subsp. Typhi serovar enterica serovar. The Widal test is usually negative in the first week. [17] In the second week, the person is often too tired to get up, with a high fever in the plateau around 40 degrees Celsius (104 degrees Fahrenheit) and bradycardia (sphygmothermic dissociation or faget sign), classically with a dirotic pulse wave. Delirium can occur, where the patient is often calm, but sometimes becomes restless. This delirium led to the typhoid receiving the nickname nervous fever. Rose spots appear on the lower chest and abdomen in about a third of patients. Rhonchus (clicking breathing noises) are heard at the base of the lungs. The abdomen is distended and painful in the right lower quadrant, where a rumble can be heard. Diarrhea can occur at this stage, but constipation is also common. The spleen and liver are enlarged (hepatosplenomegaly) and tender, and liver transaminases are elevated. The Widal test is highly positive, with antiO and antiH antibodies. Blood cultures are sometimes still positive at this stage. In the third week of typhoid fever, a number of complications can occur: intestinal hemorrhage due to bleeding in clotted Peyer spots occurs; (this can be very serious, but is generally not fatal. Intestinal perforation in the distal ileum is a very serious complication is frequently fatal. It can occur without alarming symptoms until sepsis or diffuse peritonitis sets in. Encephalitis Respiratory diseases such as pneumonia and acute bronchitis Neuropsychiatric symptoms (described as mumbling delirium or watch coma), with picking at sheets or imaginary metastatic abscess objects, cholecystitis, endocarditis, and osteitis fever is still very high and oscillates very little over 24 hours. Dehydration ensues, and the patient is delusional (typhoid condition). One third of affected individuals develop a macular rash on the trunk. A small number of platelets (thrombocytopenia) can sometimes be observed. [18] Causes A 1939 conceptual illustration showing various ways that typhoid bacteria can contaminate a water well (center) Bacteria The gran-negative bacterium that causes typhoid fever is Salmonella enterica subsp. Typhi serovar enterica serovar. Based on the MLST subtyping system, the two main types of S. Typhi sequences are ST1 and ST2, which are currently widespread worldwide. [19] Global phylogenetic analysis showed the dominance of a haplotype 58 (H58) that probably began in India in the late 1980s and is now spreading around the world carrying multidrug resistance. [20] A recently proposed and more detailed genotyping system was reported in 2016 and has been widely used ever since. This pattern reclassified the H58 nameacclimated to genotype 4.3.1. [21] Transmission Unlike other strains of Salmonella, no animals carry typhoid are known. [22] Humans are the only known carriers of the bacteria. [22] S. enterica subsp. enterica serovar Typhi is transmitted through the fecal-oral route by individuals who are currently infected and asymptomatic carriers of the bacterium. [22] An asymptomatic human carrier is an individual who still excretes typhoid bacteria in their stools one year after the acute stage of infection. [22] Diagnostic Diagnosis is done by any blood, bone marrow, or stool culture and with the Widal test (demonstration of antibodies against Salmonella O-somatic and H-flagellar antigens). In epidemics and less affluent countries, after excluding malaria, dysentery or pneumonia, a therapeutic trial with chloramphenicol is usually undertaken pending the results of the Widal test and blood and stool cultures. [23] Widal test widal test card Widal test is used to identify specific antibodies in the serum of people with typhoid using antigen-antibody interactions. In this test, the serum is mixed with a dead bacterial suspension of salmonella having specific antigens on it. If the patient's serum carries antibodies against these antigens, they attach to them forming an agglomeration that indicated the positivity of the test. If clumping does not occur, the test is negative. The Widal test takes a long time and is subject to significant false positive results. The test may also be falsely negative at the onset of the disease. However, unlike the Typhidot test, the Widal test quantifies the specimen with titles. [24] Rapid Diagnostic Tests such as Tubex, Typhidot, and Test-It showed moderate diagnostic accuracy. [25] Typhidot The test is based on the presence of IgM and IgG antibodies specific to a specific 50kD OMP antigen. This test is performed on a cellulose nitrate membrane where a specific external membrane of S. typhi typhi is attached as fixed test lines. It separately identifies IgM and IgG antibodies. IgM shows a recent infection while IgG means remote infection.

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