|  |  |  |
| --- | --- | --- |
|  | SALMONELLA | SHIGELLA |
| Epidemiology | S typh india, south America, Africa Non-typh worldwideapproximately 106 bacteria200,000 death | Low infective dose < 200 bacilli |
| Microbiology | Gram negative facultative anaerobic bacilliNon lactose fermenting colonies, nitrate positive but oxidase negativeMotile | Gram negative facultative anaerobic bacilliNon lactose fermenting coloniesNon-motile |
| Source | *Salmonella typhi and S. paratyphi the source is human*Salmonella Non-Typhi🡪Cold blooded animal, birds, rodents, turtles, snake and fish | Human is the only reservoir fecal –oral route ,Flies, fingers,Food and water, Young children in daycare, people in crowded area and anal oral sex in developed countries |
| Classification | **Two species**  1-S.enterica (six subspecies I, II, III, IV, V, VI) >2500 serotype2-S.borgori (rare) | S.sonneiS.flexneri S.dysenteriae and S. boydii |
| Virulence |

|  |  |
| --- | --- |
| S.Typhi | Salmonella non-typhi |
| Vi (virulence)  | K. capsular antigen |
| H. Flagellar antigen | H. Flagellar antigen |
| O. somatic antigen LPS, HS | O. somatic antigen ( |

 |

|  |
| --- |
| Shigella (T3SS cytotoxic) |
| K. capsular antigen |
| NO H Flagellar antigen(non-motile) |
| O. somatic antigen (HL) |

 |
| Pathogenesis | Fimbria - AdherenceEnterotoxin | Penetrate epithelial cells leads to local inflammation, shedding of intestinal lining and ulcer formation |
| Clinical |

|  |  |
| --- | --- |
| **Gastroenteritis** | **Typhoid Fever** |
| **S. enterica subsp. enterica** | **Salmonella typhi and S. paratyphi A,B and C** |
| IP 12 – 48 hrs. | IP : 9 – 14 days. |
| fever, chills, watery diarrhea and abd pain8% bacteremia | Prolong fever, bacteremia and dissemination.1st wk Constipation, Mesenteric lymph node🡪 blood other organs ie liver (monocytes)-faint salmon-colored maculopapular skin lesions2-3 wks prolonged fever, payer's patches and gallbladder 🡪 Diarrhea  |
| In sickle cell, HIV(10-100X)hemolytic disorder and ulcerative colitisGraft, elderly or very young |
| Treatment not indicated unless above |

 |

|  |
| --- |
| S.sonnei (US)S.flexneri (second)S. dysenteriae T 1 and S. boydii  |
| IP 1-3 days |
| High fever, chill, abdominal cramp and pain accompanied by tenesmus of bloody stool with mucus & WBC |

 |
| Complication | Necrotizing cholecystitisBowel hemorrhage and perforationPneumonia and thrombophlebitisMeningitis, osteomyelitis, endocarditis and abscessesChronic carrier 4-5wks child (0.4%) 50% up to 6 mos (G) . 3mons carrier and 4% chronic (TF)  | Can lead to rectal prolapsed in childrenComplication ileus, obstruction dilatation and toxic mega colon Bacteremia in 4 % of severely ill patientSeizures, HUS |
| Diagnosis | Culture on selective selenite enrichment brothmedia MAC, SS and XLD,HEA BS SerogroupingSensitivity Blood culture | Culture on selective media sam as salmonella SerotypingSensitivity |
| Treatment | Ampicillin,Trimelhoprim – SulfamethoxazoleCeftriaxone, Ciprofloxacin or Azithromycin | Ampicillin,Trimelhoprim – Sulfamethoxazole, Ceftriaxone, Ciprofloxacin |
| Prevention | For S.typhi killed and live attenuated, 1 wk before travel to endemic area  | Improve food process and water treatment and sanitation |