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|  | SALMONELLA | SHIGELLA |
| Epidemiology | S typh india, south America, Africa  Non-typh worldwide  approximately 106 bacteria  200,000 death | Low infective dose < 200 bacilli |
| Microbiology | Gram negative facultative anaerobic bacilli  Non lactose fermenting colonies, nitrate positive but oxidase negative  Motile | Gram negative facultative anaerobic bacilli  Non lactose fermenting colonies  Non-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 serotype  2-S.borgori (rare) | S.sonnei  S.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 - Adherence  Enterotoxin | 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 pain  8% bacteremia | Prolong fever, bacteremia and dissemination.  1st wk Constipation, Mesenteric lymph node🡪 blood other organs ie liver (monocytes)  -faint salmon-colored maculopapular skin lesions  2-3 wks prolonged fever, payer's patches and gallbladder 🡪 Diarrhea | | In sickle cell,  HIV(10-100X)  hemolytic disorder and ulcerative colitis  Graft, 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 cholecystitis  Bowel hemorrhage and perforation  Pneumonia and thrombophlebitis  Meningitis, osteomyelitis, endocarditis and abscesses  Chronic carrier 4-5wks child (0.4%) 50% up to 6 mos (G) .  3mons carrier and 4% chronic (TF) | Can lead to rectal prolapsed in children  Complication ileus, obstruction dilatation and toxic mega colon  Bacteremia in 4 % of severely ill patient  Seizures, HUS |
| Diagnosis | Culture on selective selenite enrichment broth  media MAC, SS and XLD,HEA BS Serogrouping  Sensitivity  Blood culture | Culture on selective media sam as salmonella  Serotyping  Sensitivity |
| Treatment | Ampicillin,Trimelhoprim – Sulfamethoxazole  Ceftriaxone, 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 |