

Yersinia

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Are short, pleomorphic, G negative rods that have bipolar staining giving the appearance of hair-pin. They are catalase positive, oxidase negative & microaerophilic or facultative anaerobic. The genus *Yersinia* include, *Y. pestis* the cause of plague, *Y. pseudotuberculosis* & *Y. enterocolitica*, important cause of human diarrheal diseases.

Y. pestis:

Plague is an infection of wild rodent transmitted from one rodent to another & occasionally from rodent to human by the bite of fleas. Serious infection often result which in pervious centuries produce pandemics of “**black death**” with million of fatalities.

Y. enterocolitica:

These are non-lactose fermentor, G negative rods, urase positive, oxidase negative. They grow best at 22C & are motile at 25C but non-motile at 37C. *Y. enterocolitica* exist in more than 50 serotypes. Most isolates from human disease belong to serotypes 03,08 & 09. There is striking geographical differences in the distribution of *Y. enterocolitica* serotypes. *Y. enterocolitica* can produce a heat-stable enterotoxin.

Yersinia



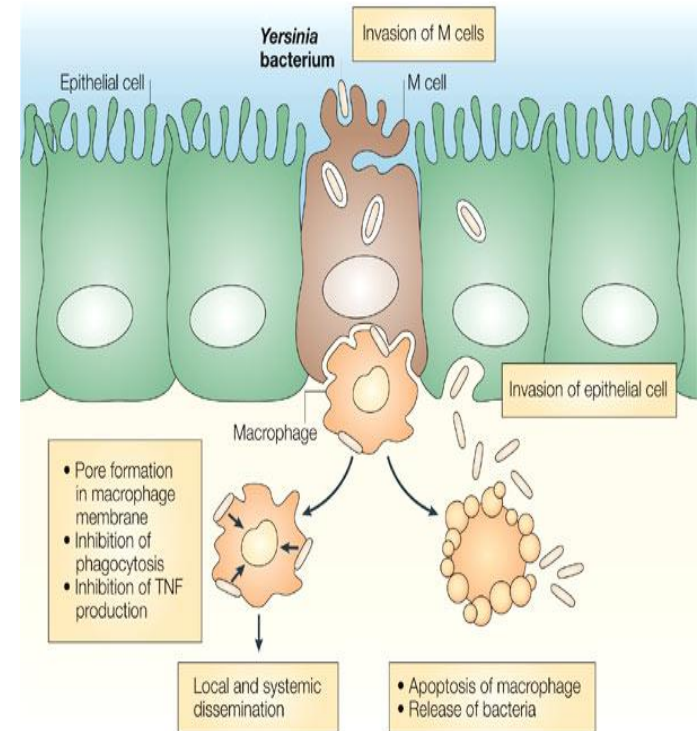
Y. enterocolitica has been isolated from rodents & other domestic animals. Transmission to human probably occur by contamination of food, drink or fomites.

Pathogenesis & clinical findings:

An inoculum of 10^8 - 10^9 yersinia are required to produce infection. The incubation period is 5-10 days. Yersinia multiply in the gut mucosa (ileum) causing inflammation & ulceration & leukocytes appear in the stool.

Early symptoms include fever, abdominal pain & diarrhea (range from watery to bloody). The abdominal pain was severe & located in the right lower quadrant, suggesting appendicitis. *Y. enterocolitica* has been isolated from the contents of 18% of appendices surgically removed as acute appendicitis. *Y. enterocolitica* also isolated from ice-cream.

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Laboratory diagnosis:

Specimens: Stool, blood or contents of surgically removed appendices.

B. Culture: of stool on MacConkey agar (the number of bacteria can be increased by cold enrichment; small amount of feces placed in buffer saline PH 7.6 & kept at 4⁰C for 2-4 weeks, fecal organisms do not survive, but *Y. enterocolitica* survive & multiply.

Serology: rise in agglutinating antibodies can be detected by specific Ag.

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