

الأسبوع الثالث عشر :

Vibrio

- Gram-negative rods
- Curves or comma shaped
- Non-spore forming
- Highly motile-single polar flagella
- Associated with salt water
- Oxidase positive
- Facultative anaerobe
- Tolerate alkaline conditions to pH9.0
- Readily cultivated, Simple nutritional

Pathogenesis of V.cholerae

- Incubation period: 2–3 days
- High infectious dose: $>10^8$ CFU
- 10^3 – 10^5 CFU with achlorhydria or hypochlorhydria (lack of or reduced stomach acid)
- Abrupt onset of vomiting and life-threatening watery diarrhea (15–20 liters/day)
- As more fluid is lost, feces-streaked stool changes to rice-water stools:



- Colorless
 - Odorless
 - No protein
 - Speckled with mucus
- Cholera toxin leads to profuse loss of fluids and electrolytes (sodium, potassium, bicarbonate)
- Hypokalemia (low levels of K in blood)
 - Cardiac arrhythmia and renal failure
- Cholera toxin blocks uptake of sodium & chloride from lumen of small intestine .



Treatment & Prevention of *V. cholerae*

- Untreated: 60% fatality
- Treated: <1% fatality
- Rehydration & supportive therapy
 - Oral

Sodium chloride (3.5 g/L)

+ Potassium chloride (1.5 g/L)

+ Rice flour (30–80g/L)



+ Trisodium citrate (2.9 g/L)

- Intravenous (IV)
 - Doxycycline or tetracycline (Tet resistance may be developing) of secondary value .
 - Water purification, sanitation & sewage treatment
 - Vaccines .



Thank You

Questions?

Comments and opinions would be appreciated.