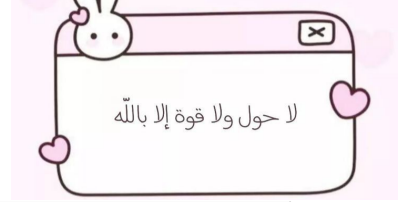


Microbiology- GI Final

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Lecture 1 - *Vibrio cholera* , *C.jejuni* & *H.pylori*

Category	<i>Vibrio cholera</i>	<i>C.jejuni</i>	<i>H.pylori</i>
Morphology , Motility , Oxygen needs	Curved, comma-shaped rod , Darting motility (shooting star) , single polar flagellum , Facultative anearobe , halotolerant	Curved , S - shaped , full shaped , Corkscrew motility single polar flagellum , Microaerophilic , grows best at 42C (thermophilic)	Spiral- Shaped rod , Corkscrew motility , multiple polar flagella , Microaerophilic
Reservoir	Contaminated water , shellfish	Poultry , pets ,unpasteurized milk	Humans
Transmission	Feco-oral	Feco-oral	Feco-oral
Virulence	Enterotoxin nCholera toxin : (↑ cAMP) TCP pilli	Invasion of gut mucosa cytolethal distending toxin (CDT)	Urease (acid resistance),Type IV secretion system , CagA , VacA
Clinical picture	Sudden onset nausea , vomiting , Profuse watery diarrhea (rice water) , rapid dehydration	bloody/inflammatory diarrhea , Guillain -Barré , RA	Chronic gastritis , peptic ulcers , MALT lymphoma , gastric cancer , hypochlorhydria and reduced iron absorption
Culture media	TCBS agar (yellow colonies) , sucrose fermented , alkaline pH Convex , smooth & round colonies	Skirrow's or Campy -BAP selective at 42C	Chocolate or skirrow's agar
Diagnosis & treatment	Specimens , smears : Dark field Microscopy , agglutination, dipstick test Oral rehydration & Doxycycline and tetracycline (+ –)	Stool culture,smears : Gram stain (gull wing shaped rods) Culture (<i>Skirrow's</i> , <i>Butzler's</i> , <i>Blaser's</i> , <i>Campy-BAP</i> and <i>Preston media</i>) Self limiting ; erythromycin or fluoroquinolones	Urease breath test , biopsy,Giemsa or special silver stains , stool Ag test PPI + 2-3 antibiotics
Notes	Sensitive to acid ; O1& O139 serogroups cause pandemics	Most common cause of bacterial gastroenteritis in developed countries	

Lecture 2- Brucella & Leptospira

Category	Brucella	Leptospira
Morphology , Motility , Oxygen requirements	Coccobacilli , Non- Motile Aerobic (B. abortus needs CO ₂ - capnophilic)	Tightly coiled spirochetes , Motile Aerobic ; prefers 28-30 C
Reservoir & Transmission	Goats, cows, pigs, dogs; unpasteurized dairy, direct contact	Rodents (urine) , contaminated water/soil
Intracellular/Extracellular	Obligate intracellular	Extracellular
Virulence & pathogenesis	Granuloma , caseating necrosis , chronic infection risk	Biphasic: leptospiremic → immune; Weil's triad (nephritis, hepatitis, hemorrhage)
Clinical picture	Undulant fever , osteomyelitis , neurobrucellosis , hepatitis ,	Conjunctival suffusion , aseptic meningitis, jaundice , nephritis
Diagnosis & Treatment	Samples : Blood (acute) , BM (chronic) Culture (slow) , SAT, ELISA Doxycycline + rifampin (6 weeks) or streptomycin (2-3 weeks)	Blood (early), CSF (middle), urine (late) Dark-field microscopy, MAT (gold standard), EMJH culture Doxycycline (mild), IV penicillin (severe/Weil's)
Prevention	Animal vaccination & Pasteurisation	Rodent control, PPE, animal vaccination, avoid contaminated