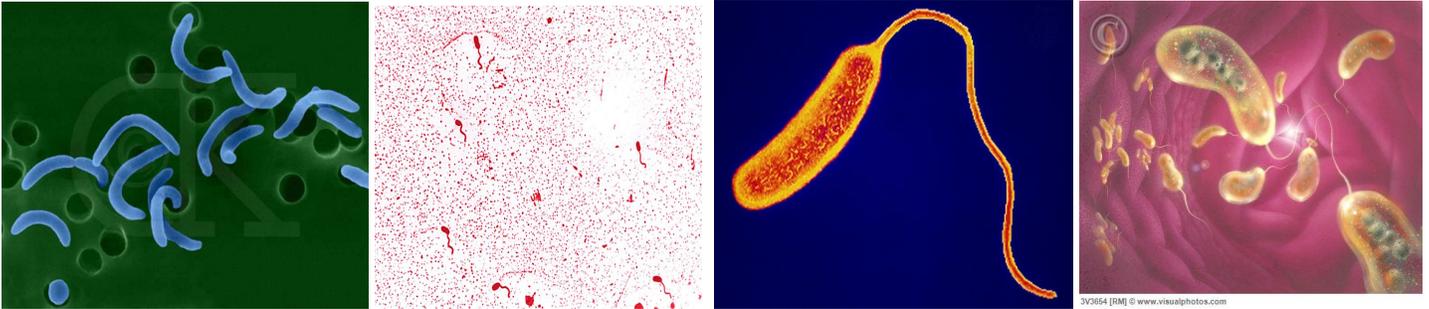


Vibrio

V. cholerae *V. parahaemolyticus*, and *V. vulnificus*

On microscope:

G -ve , curved Rod shape , Single polar flagella with sheath , no spore , facultative anaerobes



On culture media:

A-Enriched: APW alkaline peptone water \Rightarrow very rapid growth

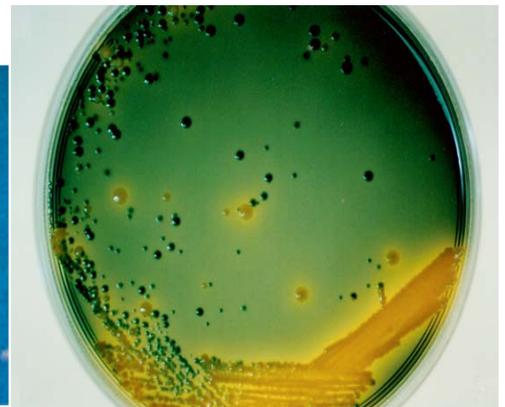
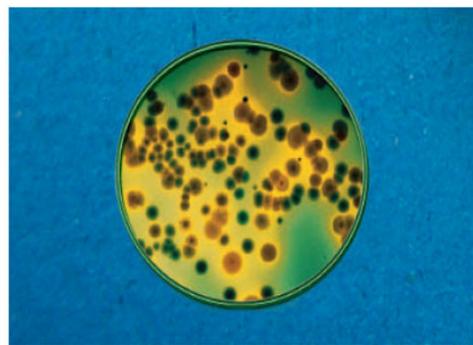
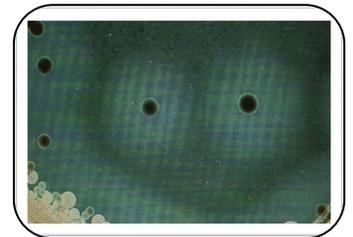
B-Selective and differential: TCBS TTGA MAC

TTGA \rightarrow grey colony

Mac Conkey \rightarrow colorless to light pink

TCBS \rightarrow agar is highly selective for Vibrio (bromothymol blue & Thymol blue)

(*V. cholerae* \Rightarrow yellow) - (*V. parahemolyticus* \Rightarrow Blue to green) - (*V. vulnificus* \Rightarrow Green or yellow)



Biochemical tests:

Catalase +ve

Oxidase +ve

Urease -ve

TSI	A/A	no gas / no H ₂ S	}	V.cholerae
KIA	K/A	no gas / no H ₂ S		

I	M	V	C	}	V.cholerae
+	+	-	+		

Pathogenesis: cholera & non-cholera infection

Cholera:

Children are also more susceptible, also those with type O blood and lower immunity.

Bacteria enter stomach (mostly killed by acidity) --- few no. into intestine (produce flagellin protein – flagella) until reach intestinal wall --- no need flagellin any more --- produce CT cholera toxin to cause diarrhea.

Cholera toxin, a protein that causes profuse, watery diarrhea ("rice water" & fishy odor) / 10–20 liters of diarrhea a day, "blue death" skin turning a bluish-gray from extreme loss of fluids.

Symptom and signs / severe diarrhea and vomiting \Rightarrow dehydration and electrolyte imbalance, low blood pressure, poor skin turgor (wrinkled hands), sunken eyes, and a rapid pulse.

Dx:

Clinical assessment with Hx

Culture stool and blood on TCBS APW before antibiotic admin.

In epidemic state investigate for: *V. cholerae* O1 and *V. cholerae* O139.

Rx:

Fluids \rightarrow oral & I.V with electrolytes replacement

Antibiotics \rightarrow Doxycycline initially, cotrimoxazole, erythromycin, tetracycline, chloramphenicol

Mortality rate is less than 1% if treated, while untreated 50–60%

V.parahemolyticus :

Seafood-borne disease ⇒ gastroenteritis & wound infection

V.vulnificus :

Undercooked seafood ⇒ diarrhea, cellulitis or septicemia



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