

# Lab diagnosis of cholera

- Specimens

Freshly collected watery stool specimen of choice

To be collected before starting antibiotics

Rectal swab for carriers or convalescents

Transport media-to be transported immediately

1-3 ml of stool mixed in 10-20 ml of transport media such as Venkatraman –Ramakrishnan media, Alkaline salt transport medium, Cary Blair medium and autoclaved sea water

- Direct microscopy-
- Gram staining-comma shaped bacilli
- Motility-darting motility
- Culture-V.cholera grows on ordinary media such as nutrient agar,peptone water,blood agar(hemodigestion)

TCBS agar-V.cholera produces yellow coloured colonies

MacConkey agar-Translucent and late lactose fermentation

- Biochemical reactions-
- Indole positive
- Citrate test variable
- Urease test negative
- TSI-Acid/acid gas absent, h<sub>2</sub>s absent
- String test
- Biotyping-Classical and Elmtor biotypes can be differentiated by polymixin B
- serotyping-o1 antisera agglutination then by ogawa and inaba antisera

Lab diagnosis of leptospirosis-

Specimens-CSF and blood (first ten days) and urine (10-30 days of infection)

Microscopy-extremely thin hence cannot be seen under microscope

Wet film-dark ground or phase contrast microscopy

Staining-silver impregnation stains such as fontana

Culture-

EMJH(Ellinghausen,McCullough,johnson,Harri  
s)

Animal inoculation-Guinea pigs

Serology-IgM appears within 1 week peaks 3  
week and undetectable by 6 months

IgG persists for years

Microscopic agglutination test(MAT) gold  
standard and reference test for diagnosis

ELISA(IgG and IgM)

ICT(IgM)

Latexagglutination test

PCR

- Lab diagnosis of typhoid
- Culture-Blood and bone marrow in first week in blood culture bottle

Stool culture in second or third week on XLD agar, macconkey agar

Enrichment broth for stool-selenite f broth

XLD agar-red colonies with black center

SS agar-colourless colonies with black center

Rectal swabs gives inferior results than stool culture

Urine culture 3-4 th week of illness on macconkey agar



Bone marrow culture employed during first week if blood culture negative when patient on antibiotics

Duodenal aspirate culture if both blood and bone marrow culture negative

Combination of blood, bone marrow culture and intestinal secretions culture best in first week with 90% sensitivity

Widal test obsolete these days but still done in resource limited settings

Test of choice in periphery-Typhidot test(rapid IgG and IgM)

Interpretation-

Negative –Control positive ,M and G negative

Positive-M or G positive

Invalid-C negative and Mor G positive