

Microbiology Lab, HLS – March, 2019

Albalqa Applied University School of medicine

**Clinical case:**

A six-year-old boy admitted to Albalqa University hospital emergency department with a history of persistent fever not responding to Amoxicillin or acetaminophen, he was in a trip with his family to Africa who have been travelling to Jordan in the last 7 days, on further questioning; his parents remembered a recent bout of diarrhea after ingestion of sea food, in which he has not been treated.

on physical examination, he was febrile with abdominal pain, pt was examined with ultrasonogram of the abdomen. Hematology-cell analysis, serology (Widal test), urine analysis, and blood cultures were also performed. The results revealed mild hepatosplenomegaly, Hematological analysis showed a white blood count of 6,300 cells mL<sup>-1</sup>; a red blood cell count of 4.54 million/cu mm. The erythrocyte sedimentation rate (ESR) was 24 mm/1 hr; hemoglobin level of 11.5 g/dl; and a platelet count of 206,000 cells/mL. The patient's serum was agglutinated with lipopolysaccharide (TO), the titre value was 1:320 dilution, and flagellar antigen (TH) titre was 1:640. He is started on IV Fluids and antibiotics.

Interpret Lab tests and Physical examination to make diagnosis? please explain with causative agent in relation?

## Normal Lab values

### HEMATOLOGY – Red Blood Cells.

- RBC (Male) 4.2 – 5.6  $10^6 / \mu\text{L}$
- RBC (Female) 3.8 – 5.1  $10^6 / \mu\text{L}$
- RBC (Child) 3.5 – 5.0  $10^6 / \mu\text{L}$

### HEMATOLOGY – White Blood Cells.

- WBC (Male) 3.8 – 11.0  $10^3 / \text{mm}^3$
- WBC (Female) 3.8 – 11.0  $10^3 / \text{mm}^3$
- WBC (Child) 5.0 – 10.0  $10^3 / \text{mm}^3$

### HEMOGLOBIN

- Hgb (Male) 14 – 18 g/dL
- Hgb (Female) 11 – 16 g/dL
- Hgb (Child) 10 – 14 g/dL
- Hgb (Newborn) 15 – 25 g/dL

### ESR

#### Adults (Westergren method):

- Men under 50 years old: less than 15 mm/hr
- Men over 50 years old: less than 20 mm/hr
- Women under 50 years old: less than 20 mm/hr
- Women over 50 years old: less than 30 mm/hr

#### Children (Westergren method):

- Newborn: 0 to 2 mm/hr
- Newborn to puberty: 3 to 13 mm/hr

Note: mm/hr. = millimeters per hour

Normal value ranges may vary slightly among different laboratories.