LABORATORY REPORT

Redcliffe labs

Patient NAME	: **Dummy**		
DOB/Age/Gender	:	Report STATUS	: Final Report
Patient ID / UHID	:	Barcode NO	:
Referred BY	:	Sample Type	:
Sample Collected	:	Report Date	:

Fever Package- Advance

Complete Blood Count (CBC)

Test Description	Value(s)	Unit(s)	Reference Range
RBC Parameters			
Hemoglobin *Cyanide free spectrophotometry.*	**10.7**	g/dL	12.0 - 15.0
RBC Count *Electrical impedance*	4.8	10^6/µl	3.8 - 4.8
PCV *Calculated*	**32.6**	%	36 - 46
MCV *Calculated*	**68.6**	fl	83 - 101
MCH *Calculated*	**22.6**	pg	27 - 32
MCHC *Calculated*	33	g/dL	31.5 - 34.5
RDW (CV) *Calculated*	**17.2**	%	11.6 - 14.0
RDW-SD *Calculated*	**32.6**	fl	35.1 - 43.9
WBC Parameters			
TLC *Electrical impedance and microscopy*	**11.9**	10^3/µl	4 - 10
Differential Leucocyte Count			
Neutrophils *Flow-cytometry DHSS*	**70.7**	%	35 - 45
Lymphocytes *Flow-cytometry DHSS*	**20.2**	%	50 - 65
Monocytes *Flow-cytometry DHSS*	7.2	%	2 - 10
Eosinophils *Flow-cytometry DHSS*	1.6	%	0 - 5
Basophils *Flow-cytometry DHSS*	0.3	%	0 - 1
Absolute Leukocyte Counts			
Neutrophils. *Calculated*	**8.41**	10^3/µl	2 - 7
Lymphocytes. *Calculated*	2.4	10^3/µl	1 - 3
Monocytes. *Calculated*	0.86	10^3/µl	0.2 - 1.0
Eosinophils. *Calculated*	0.19	10^3/µl	0.02 - 0.5
Basophils.	0.04	10^3/µl	0.02 - 0.5

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Test Description	Value(s)	Unit(s)	Reference Range
Calculated			
Platelet Parameters			
Platelet Count *Electrical impedance and microscopy*	263	10^3/µl	150 - 410
Mean Platelet Volume (MPV) *Calculated*	9.9	fL	9.3 - 12.1
PCT *Calculated*	0.3	%	0.17 - 0.32
PDW *Calculated*	19.9	fL	8.3 - 25.0
P-LCR *Calculated*	37.8	%	18 - 50
P-LCC *Calculated*	100	10^9/L	44 - 140
Mentzer Index *Calculated*	14.29	%	> 13

Interpretation:
CBC provides information about red cells, white cells and platelets. Results are useful in the diagnosis of anemia, infections, leukemias, clotting disorders and many other medical conditions.

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Test Description	Value(s)	Unit(s)	Reference Range
Erythrocyte Sedimentation Rate (ESR)			
ESR - Erythrocyte Sedimentation Rate *MODIFIED WESTERGREN*	**81**	mm/hr	0 - 20

Interpretation:
ESR is also known as Erythrocyte Sedimentation Rate. An ESR test is used to assess inflammation in the body. Many conditions can cause an abnormal ESR, so an ESR test is typically used with other tests to diagnose and monitor different diseases. An elevated ESR may occur in inflammatory conditions including infection, rheumatoid arthritis ,systemic vasculitis, anemia, multiple myeloma , etc. Low levels are typically seen in congestive heart failure, polycythemia ,sickle cell anemia, hypo fibrinogenemia , etc.

Reference- Dacie and lewis practical hematology

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Test Description	Value(s)	Unit(s)	Reference Range
Malarial Parasite (MP) Smear			
MP(PBF FOR MP) *Microscopy (Leishmans Stain)*	Not seen	-	Not seen

Interpretation:

1. Malaria is a serious parasitic diseases characterized by fever, chills, and anemia and is caused by a parasite that is transmitted human to human by the bite of infected female Anopheles mosquitoes.
2. Malarial Parasite test is performed on the blood sample to find out the level of Malaria Parasite in the blood.
3. It is conducted to conclude on Malaria and also during the treatment and after the treatment of Malaria.
4. Most people will have symptoms within 14 days of being bitten by an infected mosquito. But symptoms can show up as soon as seven days afterward or can take as long as a year to appear.
5. Clinical decision should not be based on the results of this test, but should be made by the physician after all clinical and laboratory findings have been evaluated.

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Malaria Antigen, Rapid Card

Test Description	Value(s)	Unit(s)	Reference Range
Plasmodium Vivax *Immunochromatographic*	Negative	-	Negative
Plasmodium falciparum *Immunochromatographic*	Negative	-	Negative

Interpretation:
Immunochromatographic Assay done for Plasmodium falciparum using Histidine-Rich Protein-II (HRP-II) and Plasmodium species (Plasmodium falciparum, P. vivax, P. ovale and P. malariae) using lactate dehydrogenase (pLDH) in human whole blood.

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Test Description	Value(s)	Unit(s)	Reference Range

Bilirubin (Total, Direct, Indirect)

Bilirubin Total *Diazonium Salt*	0.24	mg/dL	0.2 - 1.2
Bilirubin Direct *Diazo Reaction*	0.14	mg/dL	0.0 - 0.5
Bilirubin Indirect *Calculated*	0.1	mg/dL	0.1 - 1.0

Interpretation:
Adults and children
Increased total bilirubin that is mainly unconjugated (indirect) bilirubin may be a result of:-

1. Hemolytic or pernicious anemia
2. Transfusion reaction
3. Cirrhosis
4. A relatively common inherited condition called Gilbert syndrome, due to low levels of the enzyme that produces conjugated bilirubin.

Newborns
An elevated bilirubin level in a newborn may be temporary and resolve itself within a few days to two weeks. However, if the bilirubin level is above a critical threshold or increases rapidly, an investigation of the cause is needed so appropriate treatment can be initiated. Increased bilirubin concentrations may result from the accelerated breakdown of red blood cells due to:

1. Blood type incompatibility between the mother and her newborn
2. Certain congenital infections
3. Lack of oxygen (hypoxia)
4. Diseases that can affect the liver

In most of these conditions, only unconjugated (indirect) bilirubin is increased.

SGOT / AST

SGOT/AST *Enzymatic [NADH (without P-5-P)]*	14.6	U/L	11 - 34

Interpretation:
Serum AST is used for differential diagnosis of diseases of hepatobiliary system and pancreas. Increased values are seen in liver diseases like acute viral hepatitis, cirrhosis, biliary obstruction, primary or metastatic cancer, granuloma, hepatic ischaemia.

SGPT / ALT

SGPT/ALT *Enzymatic [NADH (without P-5-P)]*	13.4	U/L	< 34

Interpretation:
Serum ALT is used for differential diagnosis of diseases of hepatobiliary system and pancreas. Increased in alcohalic hepatitis, cirrhosis, hepatocellular carcinoma, chronic hepatitis. Decreased in genito-urinary tract infection, malignancy, pyridoxal phosphate deficiency states (malnutrition, pregnancy, alcoholic liver disease).

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Test Description	Value(s)	Unit(s)	Reference Range

C-Reactive Protein (CRP), Quantitative

CRP (Quantitative) *Immunoturbidimetry*	**82**	mg/L	up to 5

Please correlate clinically.

Interpretation:
Increased CRP level:
1. A high or increasing amount of CRP in the blood suggests the presence of inflammation but will not identify its location or the cause.
2. Suspected bacterial infection—a high CRP level can provide indication that patient has an infection.
3. Chronic inflammatory disease—high levels of CRP suggest a flare-up if you have a chronic inflammatory disease or that treatment has not been effective.
If the CRP level is initially elevated and drops, it means that the inflammation or infection is subsiding and/or responding to treatment.

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Test Description	Value(s)	Unit(s)	Reference Range
WIDAL By Slide Agglutination			
Salmonella typhi O (TO) *Direct Agglutination Reaction*	1:20	Titre	< 1:80
Salmonella typhi H (TH)	1:40	Titre	< 1:160
Salmonella paratyphi A(H)	1:20	Titre	< 1:80
Salmonella Paratyphi B(H)	1:20	Titre	< 1:80

Interpretation:

METHOD-(Slide Agglutination)

1.Titres >1:80 of “O” antigen & >1:160 of “H” antigen for Salmonella typhi and titres >1:80 of “H” antigen for Salmonella paratyphi A & B are reactive.
2. Rising titres in paired samples taken 7-10 days apart are more significant than a single test.
3. Reactive results indicates ongoing or recent infection by Salmonella spp. and the diagnosis should be confirmed by gold standard test such as Blood culture.
4. The reactivity will vary with stage of the disease with appearance in 1st week to increase in titres till end of 4th week post which it starts decreasing.
5. In TAB vaccinated patients, high titres of H antibody of ≥1:160 to each of Salmonellae is observed. They tend to persist for many months and even years while O antibody shows lower titres and disappears within 6 months.
6. Antibiotic treatment during 1st week before the appearance of antibodies tend to supress the immune response in the form of no or decreasing antibody levels.
7. False positive results/anamnestic response may be seen in patients with past enteric infection and during unrelated fevers like Malaria, Influenzae etc. in the form of transient rise in H antibody in Widal test.
8. False negative results may be due to processing of sample collected early in the course of disease (1st week) and immunosuppression.
9. Test conducted on serum.

Uses
To diagnose infection due to Salmonella spp. (Enteric fever).
To monitor the progression of disease.
To assess the response to therapy (decreasing titres) in patients being treated for Enteric fever

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Test Description	Value(s)	Unit(s)	Reference Range
Typhidot IgM, Rapid Card			
TYPHI DOT/ SALMONELLA TYPHI IgM *Immunochromatographic*	Negative	-	Negative

Interpretation:

RESULTS	REMARKS
Positive	Indicates presence of IgM antibodies against Salmonella typhi.
Negative	Indicates absence of IgM antibodies against Salmonella typhi.

Note:
1.Its positivity in serum indicates ongoing or recent infection by Salmonella typhi and the diagnosis should be confirmed by gold standard test such as Blood culture prior to start of antibiotics.
2.IgM antibodies are typically detectable 5-7 days post symptom onset, peaking in 2nd week and frequently remain elevated for 2-4 months following infection.
3.False positive results may be due to cross reactivity with other Salmonella spp., Dengue virus infection & in patients with high levels of Rheumatoid factor.
4. False negative reaction may be due to processing of sample collected early in the course of disease, antibiotic treatment during 1st week and immunosuppression.
5. Test conducted on serum.

Use
To diagnose infection due to Salmonella typhi (Enteric fever).

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Test Description	Value(s)	Unit(s)	Reference Range
Dengue Ns1 Antigen Test, EIA			
DENGUE NS1 ANTIGEN *EIA*	0.205	S/Co Ratio	<1 - NEGATIVE >= 1 - POSITIVE

Interpretation:
Clinical background: Dengue virus (serotypes Den 1,2,3,4) is a flavivirus with global distribution and is transmitted by mosquitoes (Aedes aegyptii, Aedes albopictus etc). It may cause Dengue fever, Dengue haemorrhagic fever or Dengue Shock syndrome. Following the dengue infection, an incubation period of 3 to5 days, some infections maybe asymptomatic. Symptomatic patients develop fever with or without rash, severe musculoskeletal pain, headache, retro-orbital pain, petechiae etc. In most individuals there is resolution of illness
without complications. In some individuals the Dengue fever may progress to Dengue haemorrhagic fever or Dengue Shock syndrome especially during repeat infection with a new Dengue Virus serotype.

Interpretation: Dengue virus antigen usually appears in blood within 24 hours of onset of symptoms to symptoms till 9 days post onset of symptoms.

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Urine Routine and Microscopic Examination

Test Description	Value(s)	Unit(s)	Reference Range
Physical Examination			
Volume	15	mL	-
Colour	Pale yellow	-	Pale yellow
Transparency	**Slightly Hazy**	-	Clear
Deposit	**Present**	-	Absent
Chemical Examination			
Reaction (pH) *Double Indicator*	6.0	-	4.5 - 8.0
Specific Gravity *Ion Exchange*	1.010	-	1.010 - 1.030
Urine Glucose (sugar) *Oxidase / Peroxidase*	Negative	-	Negative
Urine Protein (Albumin) *Acid / Base Colour Excahnge*	Negative	-	Negative
Urine Ketones (Acetone) *Legals Test*	Negative	-	Negative
Blood *Peroxidase Hemoglobin*	**Positive(Trace)**	-	Negative
Leucocyte esterase *Enzymatic Reaction*	Negative	-	Negative
Bilirubin Urine *Coupling Reaction*	Negative	-	Negative
Nitrite *Griless Test*	Negative	-	Negative
Urobilinogen *Ehrlichs Test*	Normal	-	Normal
Microscopic Examination			
Pus Cells (WBCs)	2-4	/hpf	0 - 5
Epithelial Cells	2-3	/hpf	0 - 4
Red blood Cells	**4-6**	/hpf	Absent
Crystals	Absent	-	Absent
Cast	Absent	-	Absent
Yeast Cells	Absent	-	Absent
Amorphous deposits	Absent	-	Absent
Bacteria	Absent	-	Absent
Protozoa	Absent	-	Absent

Interpretation:
URINALYSIS- Routine urine analysis assists in screening and diagnosis of various metabolic, urological, kidney and liver disorders.

Protein: Elevated proteins can be an early sign of kidney disease. Urinary protein excretion can also be temporarily elevated by strenuous exercise, orthostatic proteinuria, dehydration, urinary tract infections and acute illness with fever

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Glucose: Uncontrolled diabetes mellitus can lead to presence of glucose in urine. Other causes include pregnancy, hormonal disturbances, liver disease and certain medications.

Ketones: Uncontrolled diabetes mellitus can lead to presence of ketones in urine. Ketones can also be seen in starvation, frequent vomiting, pregnancy and strenuous exercise.

Blood: Occult blood can occur in urine as intact erythrocytes or haemoglobin, which can occur in various urological, nephrological and bleeding disorders.

Leukocytes: An increase in leukocytes is an indication of inflammation in urinary tract or kidneys. Most common cause is bacterial urinary tract infection.

Nitrite: Many bacteria give positive results when their number is high. Nitrite concentration during infection increases with length of time the urine specimen is retained in bladder prior to collection.

pH: The kidneys play an important role in maintaining acid base balance of the body. Conditions of the body producing acidosis/ alkalosis or ingestion of certain type of food can affect the pH of urine.

Specific gravity: Specific gravity gives an indication of how concentrated the urine is. Increased specific gravity is seen in conditions like dehydration, glycosuria and proteinuria while decreased specific gravity is seen in excessive fluid intake, renal failure and diabetes insipidus.

Bilirubin: In certain liver diseases such as biliary obstruction or hepatitis, bilirubin gets excreted in urine.

Urobilinogen: Positive results are seen in liver diseases like hepatitis and cirrhosis and in cases of haemolytic anaemia.

*** End Of Report ***

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