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Investigation	Observed Value	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<b>HAEMATOLOGY</b>			
Complete Blood Count With - ESR			
Haemoglobin (EDTA Blood/Automated Blood cell Counter)	15.6	g/dL	13.5 - 18.0
Packed Cell Volume(PCV)/Haematocrit (EDTA Blood/Automated Blood cell Counter)	46.3	%	42 - 52
RBC Count (EDTA Blood/Automated Blood cell Counter)	5.14	mill/cu.mm	4.7 - 6.0
Mean Corpuscular Volume(MCV) (EDTA Blood/Automated Blood cell Counter)	90.0	fL	78 - 100
Mean Corpuscular Haemoglobin(MCH) (EDTA Blood/Automated Blood cell Counter)	30.4	pg	27 - 32
Mean Corpuscular Haemoglobin concentration(MCHC) (EDTA Blood/Automated Blood cell Counter)	33.7	g/dL	32 - 36
RDW-CV	14.7	%	11.5 - 16.0
RDW-SD	46.30	fL	39 - 46
Total Leukocyte Count (TC) (EDTA Blood/Automated Blood cell Counter)	7810	cells/cu.mm	4000 - 11000
Neutrophils (Blood)	65.4	%	40 - 75
Lymphocytes (Blood)	27.3	%	20 - 45
Eosinophils (Blood)	3.4	%	01 - 06



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Monocytes (Blood)	2.7	%	02 - 10
Basophils (Blood/Automated Blood cell Counter)	1.2	%	00 - 02
Absolute Neutrophil count (EDTA Blood/Automated Blood cell Counter)	5.11	10^3 / μl	1.5 - 6.6
Absolute Lymphocyte Count (EDTA Blood/Automated Blood cell Counter)	2.13	10^3 / μ1	1.5 - 3.5
Absolute Eosinophil Count (AEC) (EDTA Blood/Automated Blood cell Counter)	0.27	10^3 / μ1	0.04 - 0.44
Absolute Monocyte Count (EDTA Blood/Flow cytometry)	0.21	10^3 / μ1	< 1.0
Absolute Basophil count (EDTA Blood/Automated Blood cell Counter)	0.09	10^3 / μl	< 0.2
Platelet Count (EDTA Blood/Automated Blood cell Counter)	393	10^3 / μ1	150 - 450

**INTERPRETATION:** NOTE: Low platelets can be caused by a wide variety of conditions, including viral infections, consumption coagulopathy, decreased production in the bone marrow and drugs. Values are to be interpreted in a background of patient age, history and clinical findings.

MPV* (Blood/Calculated)	8.5	fL	7.9 - 13.7
PCT	0.33	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate) (Citrated Blood)	4	mm/hr	0 - 15



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Investigation BIOCHEMISTRY	Observed Value	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Liver Function Test			
Bilirubin(Total) (Serum/Diazotized Sulfanilic Acid)	1.0	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	0.3	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/Derived)	0.7	mg/dL	0.1 - 1.0
Total Protein (Serum/Biuret)	7.9	g/dL	6.0 - 8.3
Albumin (Serum/Bromocresol green)	4.7	g/dL	3.5 - 5.2
Globulin (Serum/Derived)	3.2	g/dL	2.3 - 3.5
A : G Ratio (Serum/Derived)	1.5		1.5 - 2.5
SGOT/AST (Aspartate Aminotransferase) (Serum/IFCC Kinetic)	27	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/IFCC / Kinetic)	31	U/L	5 - 41
Alkaline Phosphatase (SAP) (Serum/IFCC Kinetic)	68	U/L	53 - 128
GGT(Gamma Glutamyl Transpeptidase) (Serum/SZASZ standarised IFCC)	13	U/L	< 55





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Investigation	Observed <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<u>Lipid Profile</u>			
Cholesterol Total (Serum/Cholesterol oxidase/Peroxidase)	138	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Triglycerides (Serum/Glycerol phosphate oxidase / peroxidase)	178	mg/dL	Optimal: < 150 Borderline: 150 - 199 High: 200 - 499 Very High: >= 500

**INTERPRETATION:** The reference ranges are based on fasting condition. Triglyceride levels change drastically in response to food, increasing as much as 5 to 10 times the fasting levels, just a few hours after eating. Fasting triglyceride levels show considerable diurnal variation too. There is evidence recommending triglycerides estimation in non-fasting condition for evaluating the risk of heart disease and screening for metabolic syndrome, as non-fasting sample is more representative of the õusualö"circulating level of triglycerides during most part of the day.

rant at any			
HDL Cholesterol (Serum/Immunoinhibition)	44	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 40 - 59 High Risk: < 40
LDL Cholesterol (Serum/Calculated)	58.4	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/Calculated)	35.6	mg/dL	< 30
Non HDL Cholesterol (Serum/Calculated)	94.0	mg/dL	Optimal: <130 Above Optimal: 130 - 159 Borderline High: 160 - 189 High: 190 - 219



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Very High:  $\geq 220$ 

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**INTERPRETATION:** 1.Non-HDL Cholesterol is now proven to be a better cardiovascular risk marker than LDL Cholesterol. 2.It is the sum of all potentially atherogenic proteins including LDL, IDL, VLDL and chylomicrons and it is the "new bad cholesterol" and is a co-primary target for cholesterol lowering therapy.

Total Cholesterol/HDL Cholesterol Ratio 3.1

(Serum/Calculated)

Optimal: < 3.3 Low Risk: 3.4 - 4.4 Average Risk: 4.5 - 7.1 Moderate Risk: 7.2 - 11.0 High Risk: > 11.0

Triglyceride/HDL Cholesterol Ratio 4 Optimal: < 2.5

(TG/HDL)

(Serum/Calculated)

Mild to moderate risk: 2.5 - 5.0

High Risk: > 5.0

LDL/HDL Cholesterol Ratio 1.3 Optimal: 0.5 - 3.0

(Serum/Calculated)
Borderline: 3.1 - 6.0
High Risk: > 6.0



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Investigation	<u>Observed</u> <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Glycosylated Haemoglobin (HbA1c)			
HbA1C (Whole Blood/HPLC)	5.3	%	Normal: 4.5 - 5.6 Prediabetes: 5.7 - 6.4 Diabetic: >= 6.5

INTERPRETATION: If Diabetes - Good control: 6.1 - 7.0 %, Fair control: 7.1 - 8.0 %, Poor control >= 8.1 %

Estimated Average Glucose 105.41 mg/dL

(Whole Blood)

### **INTERPRETATION: Comments**

HbA1c provides an index of Average Blood Glucose levels over the past 8 - 12 weeks and is a much better indicator of long term glycemic control as compared to blood and urinary glucose determinations.

Conditions that prolong RBC life span like Iron deficiency anemia, Vitamin B12 & Folate deficiency,

hypertriglyceridemia, hyperbilirubinemia, Drugs, Alcohol, Lead Poisoning, Asplenia can give falsely elevated HbAlC values.

Conditions that shorten RBC survival like acute or chronic blood loss, hemolytic anemia, Hemoglobinopathies, Splenomegaly, Vitamin E ingestion, Pregnancy, End stage Renal disease can cause falsely low HbAlc.



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<u>Investigation</u> <u>Observed</u> <u>Unit</u> <u>Biological</u> <u>Value</u> <u>Reference Interval</u>

# **CLINICAL PATHOLOGY**

## PHYSICAL EXAMINATION

Colour Pale Yellow

(Urine)

Volume 25 mL

(Urine)

Appearance Clear Clear

(Urine)

**CHEMICAL EXAMINATION** 

pH 6.5 4.6 - 8.0

(Urine)

Specific Gravity 1.015 1.003 - 1.030

(Urine)

Protein Negative Negative

(Urine)

Glucose Negative Negative

(Urine)

Ketones Negative Negative

(Urine)

Leukocytes Negative Negative

(Urine)

Nitrite Negative Negative

(Urine)

Bilirubin Negative Negative

(Urine)



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Investigation	<u>Observed</u> <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Blood	Negative		Negative
(Urine)			
Urobilinogen (Urine)	0.2	mg/dL	0.1 - 1.0
<u>Urine Microscopy Pictures</u>			
Pus Cells	2-3	/hpf	0 - 2
(Urine)			
Epithelial Cells (Urine)	4-5	/hpf	0 - 2
RBCs (Urine)	Nil	/hpf	0 - 1
Others (Urine)	Nil		Nil
(Cilie)			



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Investigation  Stool Analysis - ROUTINE	Observed <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Mucus (Stool)	Absent		Absent
Reaction (Stool)	Alkaline		Alkaline
Consistency (Stool)	Solid		Semi solid to solid
Others (Stool)	Nil		Nil
Ova (Stool)	Not Found		Not Found
Cysts (Stool)	Not Found		Not Found
Trophozoites (Stool)	Not Found		Not found
RBCs (Stool)	Nil	/hpf	Nil
Pus Cells (Stool)	1-2	/hpf	Nil
Macrophages (Stool)	Nil		Nil
Epithelial Cells (Stool)	Nil	/hpf	Nil
Colour (Stool)	Brownish		

Absent



Blood

(Stool)

Absent

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InvestigationObservedUnitBiologicalValueReference Interval

# **IMMUNOHAEMATOLOGY**

BLOOD GROUPING AND Rh TYPING 'O' 'Positive'

(EDTA Blood/Agglutination)

INTERPRETATION: Note: Slide method is screening method. Kindly confirm with Tube method for transfusion.



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Investigation	<u>Observed</u> <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<b>BIOCHEMISTRY</b>			
BUN / Creatinine Ratio	9		6 - 22
Glucose Fasting (FBS) (Plasma - F/GOD - POD)	85	mg/dL	Normal: < 100 Pre Diabetic: 100 - 125 Diabetic: >= 126

**INTERPRETATION:** Factors such as type, quantity and time of food intake, Physical activity, Psychological stress, and drugs can influence blood glucose level.

Urine Glucose - Fasting (Urine - F)	Negative		Negative
Glucose Postprandial (PPBS) (Plasma - PP/GOD - POD)	119	mg/dL	70 - 140

## INTERPRETATION:

Factors such as type, quantity and time of food intake, Physical activity, Psychological stress, and drugs can influence blood glucose level. Fasting blood glucose level may be higher than Postprandial glucose, because of physiological surge in Postprandial Insulin resistance, Exercise or Stress, Dawn Phenomenon, Somogyi Phenomenon, Anti- diabetic medication during treatment for Diabetes.

Urine Glucose (Postprandial) (Urine - PP)	Negative		Negative
Blood Urea Nitrogen (BUN) (Serum/Urease-GLDH)	7	mg/dL	7.0 - 21
Creatinine (Serum/Jaffe Kinetic)	0.8	mg/dL	0.9 - 1.3

INTERPRETATION: Elevated Creatinine values are encountered in increased muscle mass, severe dehydration, Pre-eclampsia, increased ingestion of cooked meat, consuming Protein/ Creatine supplements, Diabetic Ketoacidosis, prolonged fasting, renal dysfunction and drugs such as cefoxitin ,cefazolin, ACE inhibitors ,angiotensin II receptor antagonists,N-acetylcyteine , chemotherapeutic agent such as flucytosine etc.

Uric Acid 5.4 mg/dL 3.5 - 7.2

(Serum/Uricase/Peroxidase)



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-- End of Report --