PID No.
 : MED111087625
 Register On
 : 14/05/2022 9:37 AM

 SID No.
 : 712214637
 Collection On
 : 14/05/2022 12:04 PM

Type : OP

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	Value		Reference Interval

# **HAEMATOLOGY**

## Complete Blood Count With - ESR

Haemoglobin	18.4	g/dL	13.5 - 18.0
-------------	------	------	-------------

(EDTA Blood/Spectrophotometry)

**INTERPRETATION:** Haemoglobin values vary in Men, Women & Children. Low haemoglobin values may be due to nutritional deficiency, blood loss, renal failure etc. Higher values are often due to dehydration, smoking, high altitudes, hypoxia etc.

Remark:	Kindly	correlate	clinically
ixciliai K.	MILLIAN	Conciac	Cillincally

PCV (Packed Cell Volume) / Haematocrit (EDTA Blood/Derived)	52.3	%	42 - 52
RBC Count (EDTA Blood'Automated Blood cell Counter)	5.59	mill/cu.mm	4.7 - 6.0
MCV (Mean Corpuscular Volume) (EDTA Blood/Derived from Impedance)	94.0	fL	78 - 100
MCH (Mean Corpuscular Haemoglobin) (EDTA Blood/Derived)	32.9	pg	27 - 32
MCHC (Mean Corpuscular Haemoglobin concentration) (EDTA Blood/Derived)	35.2	g/dL	32 - 36
RDW-CV (Derived)	10.51	%	11.5 - 16.0
RDW-SD (Derived)	34.58	fL	39 - 46
Total WBC Count (TC) (EDTA Blood/Derived from Impedance)	5550	cells/cu.mm	4000 - 11000
Neutrophils (Blood/Impedance Variation & Flow Cytometry)	55	%	40 - 75
Lymphocytes (Blood/Impedance Variation & Flow Cytometry)	35	%	20 - 45



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Eosinophils	02	%	01 - 06
(Blood/Impedance Variation & Flow Cytometry)			
Monocytes (Blood/Impedance Variation & Flow Cytometry)	08	%	01 - 10
Basophils (Blood/Impedance Variation & Flow Cytometry)	00	%	00 - 02
Absolute Neutrophil count (EDTA Blood/Impedance Variation & Flow Cytometry)	3.05	10^3 / μl	1.5 - 6.6
Absolute Lymphocyte Count (EDTA Blood/Impedance Variation & Flow Cytometry)	1.94	10^3 / μ1	1.5 - 3.5
Absolute Eosinophil Count (AEC) (EDTA Blood/Impedance Variation & Flow Cytometry)	0.11	10^3 / μl	0.04 - 0.44
Absolute Monocyte Count (EDTA Blood/Impedance Variation & Flow Cytometry)	0.44	10^3 / μ1	< 1.0
Absolute Basophil count (EDTA Blood/Impedance Variation & Flow Cytometry)	0.00	10^3 / μ1	< 0.2
Platelet Count (EDTA Blood/Derived from Impedance)	213	10^3 / μl	150 - 450
MPV (Blood/ <i>Derived</i> )	08.19	fL	7.9 - 13.7
PCT	0.17	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate)	06	mm/hr	< 15



(Citrated Blood/Automated ESR analyser)

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Investigation	Observed Value	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<b>BIOCHEMISTRY</b>			
Liver Function Test			
Bilirubin(Total) (Serum/Diazotized Sulfanilic Acid)	1.5	mg/dL	0.1 - 1.2
Remark: Kindly correlate clinically.  Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	0.4	mg/dL	0.0 - 0.3
Remark: Kindly correlate clinically.  Bilirubin(Indirect) (Serum/Derived)	1.10	mg/dL	0.1 - 1.0
Total Protein (Serum/Biuret)	7.5	gm/dl	6.0 - 8.0
Albumin (Serum/Bromocresol green)	4.7	gm/dl	3.5 - 5.2
Globulin (Serum/Derived)	2.80	gm/dL	2.3 - 3.6
A : G Ratio (Serum/Derived)	1.68		1.1 - 2.2
INTERPRETATION: Remark: Electrophoresis is the	preferred method		
SGOT/AST (Aspartate Aminotransferase) (Serum/IFCC / Kinetic)	31	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/IFCC / Kinetic)	43	U/L	5 - 41
Remark: Kindly correlate clinically.			
Alkaline Phosphatase (SAP) (Serum/PNPP / Kinetic)	86	U/L	53 - 128
GGT(Gamma Glutamyl Transpeptidase) (Serum/IFCC / Kinetic)	34	U/L	< 55

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Investigation	Observed Value	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<u>Lipid Profile</u>			
Cholesterol Total (Serum/Oxidase / Peroxidase method)	207	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Remark: Kindly correlate clinically.			
Triglycerides (Serum/Glycerol phosphate oxidase / peroxidase)	78	mg/dL	Optimal: < 150 Borderline: 150 - 199 High: 200 - 499 Very High: >= 500

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**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.

HDL Cholesterol (Serum/Immunoinhibition)	52	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 40 - 59 High Risk: < 40
LDL Cholesterol (Serum/Calculated)	139.4	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/Calculated)	15.6	mg/dL	< 30



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Non HDL Cholesterol 155.0 mg/dL

(Serum/Calculated)

Optimal: < 130 Above Optimal: 130 - 159 Borderline High: 160 - 189 High: 190 - 219 Very High: >= 220

**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 4

(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 1.5

(TG/HDL)

(Serum/Calculated)

LDL/HDL Cholesterol Ratio 2.7

(Serum/Calculated)

Optimal: < 2.5

Mild to moderate risk: 2.5 - 5.0

High Risk: > 5.0

Optimal: 0.5 - 3.0 Borderline: 3.1 - 6.0

High Risk: > 6.0



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Investigation	Observed <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Glycosylated Haemoglobin (HbA1c)			
HbA1C (Whole Blood/HPLC)	5.1	%	Normal: 4.5 - 5.6 Prediabetes: 5.7 - 6.4

Diabetic:  $\geq 6.5$ 

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

Estimated Average Glucose 99.67 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 HbA1c.

> MBBS MD DNB Consultant Pathologist Reg No: KMC 103138

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InvestigationObservedUnitBiologicalValueReference Interval

## **IMMUNOASSAY**

## THYROID PROFILE / TFT

T3 (Triiodothyronine) - Total 1.11 ng/ml 0.7 - 2.04

(Serum/Chemiluminescent Immunometric Assay (CLIA))

#### INTERPRETATION:

#### **Comment:**

Total T3 variation can be seen in other condition like pregnancy, drugs, nephrosis etc. In such cases, Free T3 is recommended as it is Metabolically active.

T4 (Thyroxine) - Total 11.51 Microg/dl 4.2 - 12.0

 $(Serum/{\it Chemiluminescent\ Immunometric\ Assay}$ 

(CLIA))

## INTERPRETATION:

#### **Comment:**

Total T4 variation can be seen in other condition like pregnancy, drugs, nephrosis etc. In such cases, Free T4 is recommended as it is Metabolically active.

TSH (Thyroid Stimulating Hormone) 1.149 µIU/mL 0.35 - 5.50

(Serum/Chemiluminescent Immunometric Assay

(CLIA))

### INTERPRETATION:

Reference range for cord blood - upto 20

1 st trimester: 0.1-2.5 2 nd trimester 0.2-3.0 3 rd trimester : 0.3-3.0

(Indian Thyroid Society Guidelines)

#### **Comment:**

- 1.TSH reference range during pregnancy depends on Iodine intake, TPO status, Serum HCG concentration, race, Ethnicity and BMI.
- 2.TSH Levels are subject to circadian variation, reaching peak levels between 2-4am and at a minimum between 6-10PM. The variation can be of the order of 50%, hence time of the day has influence on the measured serum TSH concentrations.
- 3. Values&amplt 0.03 µIU/mL need to be clinically correlated due to presence of rare TSH variant in some individuals.



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_	<u>Value</u>		Reference Interval

# **CLINICAL PATHOLOGY**

## **PHYSICAL EXAMINATION**

Colour	Pale yellow	Yellow to Amber
(Urine/Physical examination)		

(Orme/Physical examination)

Volume 30 ml

(Urine/Physical examination)

Appearance Clear

(Urine)

## **CHEMICAL EXAMINATION**

pН	7.0	4.5 - 8.0
/T.T. ' \		

(Urine)

Specific Gravity 1.015 1.002 - 1.035

(Urine/Dip Stick oʻ'Reagent strip method)

Protein Negative Negative

(Urine/Dip Stick oʻ'Reagent strip method)

Glucose Nil Nil

(Urine)

Ketone Nil Nil

(Urine/Dip Stick oʻ'Reagent strip method)

Leukocytes Negative leuco/uL Negative

(Urine)

Nitrite Nil Nil

(Urine/Dip Stick ó"Reagent strip method)

Bilirubin Negative mg/dL Negative

(Urine)



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Investigation	<u>Observed</u> <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Blood	Nil		Nil
(Urine)			
Urobilinogen	Normal		Within normal limits
(Urine/Dip Stick ó"Reagent strip method)			
Urine Microscopy Pictures			
RBCs	Nil	/hpf	NIL
(Urine/Microscopy)			
Pus Cells	2-3	/hpf	< 5
(Urine/Microscopy)			
Epithelial Cells	2-3	/hpf	No ranges
(Urine/Microscopy)			
Others	Nil		Nil
(Urine)			



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Investigation	Observed <u>Value</u>	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
Stool Analysis - ROUTINE			
Colour (Stool)	Brownish		Brown
Blood (Stool)	Not present		Not present
Mucus (Stool)	Not present		Not present
Reaction (Stool)	Alkaline		Alkaline
Consistency (Stool)	Semi solid		Semi solid
Ova (Stool)	Nil		Nil
Others (Stool)	Nil		Nil
Cysts (Stool)	Nil		Nil
Trophozoites (Stool)	Nil		Nil
RBCs (Stool)	Nil	/hpf	Nil
Pus Cells (Stool)	2-4	/hpf	Nil
Macrophages (Stool)	Nil		Nil
Epithelial Cells (Stool)	Nil	/hpf	Nil

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

# **IMMUNOHAEMATOLOGY**

BLOOD GROUPING AND Rh TYPING

(EDTA Blood/Agglutination)

Remark: Test to be confirmed by Gel method.

'O' 'Positive'

Consultant Pathologist Reg No: KMC 103138

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Investigation	Observed Value	<u>Unit</u>	<u>Biological</u> <u>Reference Interval</u>
<b>BIOCHEMISTRY</b>			
BUN / Creatinine Ratio	9.3		
Glucose Fasting (FBS) (Plasma - F/GOD- POD)	80	mg/dL	Normal: < 100 Pre Diabetic: 100 - 125 Diabetic: >= 126

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

Nil Urine sugar, Fasting Nil

(Urine - F)

Glucose Postprandial (PPBS) 120 mg/dL 70 - 140

(Plasma - PP/GOD - POD)

## 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 secretion, Insulin resistance, Exercise or Stress, Dawn Phenomenon, Somogyi Phenomenon, Anti- diabetic medication during treatment for Diabetes.

Urine Sugar (PP-2 hours) (Urine - PP)	Negative		Negative
Blood Urea Nitrogen (BUN) (Serum/Urease UV / derived)	12.1	mg/dL	7.0 - 21
Creatinine (Serum/Jaffe Kinetic)	1.3	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

Uric Acid 5.7 3.5 - 7.2mg/dL

(Serum/Uricase/Peroxidase)



-- End of Report --