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Age / Sex	: 58 Year(s) / Male	**Report On**	: 09/05/2023 3:58 PM		
Type	: OP	**Printed On**	: 09/05/2023 4:27 PM		
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Investigation	Observed Value	Unit	Biological Reference Interval
HAEMATOLOGY			
Complete Blood Count With - ESR			
Haemoglobin (EDTA Blood/*Spectrophotometry)*	16.8	g/dL	13.5 - 18.0
Packed Cell Volume(PCV)/Haematocrit (EDTA Blood)	48.6	%	42 - 52
RBC Count (EDTA Blood)	5.32	mill/cu.mm	4.7 - 6.0
Mean Corpuscular Volume(MCV) (EDTA Blood)	91.4	fL	78 - 100
Mean Corpuscular Haemoglobin(MCH) (EDTA Blood)	31.5	pg	27 - 32
Mean Corpuscular Haemoglobin concentration(MCHC) (EDTA Blood)	34.5	g/dL	32 - 36
RDW-CV (EDTA Blood)	13.9	%	11.5 - 16.0
RDW-SD (EDTA Blood)	44.47	fL	39 - 46
Total Leukocyte Count (TC) (EDTA Blood)	7800	cells/cu.mm	4000 - 11000
Neutrophils (EDTA Blood)	54.5	%	40 - 75
Lymphocytes (EDTA Blood)	30.7	%	20 - 45
Eosinophils (EDTA Blood)	**6.7**	%	01 - 06
Monocytes (EDTA Blood)	7.5	%	01 - 10

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Investigation	Observed Value	Unit	Biological Reference Interval
Basophils (Blood)	0.6	%	00 - 02
INTERPRETATION: Tests done on Automated Five Part cell counter. All abnormal results are reviewed and confirmed microscopically.			
Absolute Neutrophil count (EDTA Blood)	4.25	10^3 / µl	1.5 - 6.6
Absolute Lymphocyte Count (EDTA Blood)	2.39	10^3 / µl	1.5 - 3.5
Absolute Eosinophil Count (AEC) (EDTA Blood)	**0.52**	10^3 / µl	0.04 - 0.44
Absolute Monocyte Count (EDTA Blood)	0.58	10^3 / µl	< 1.0
Absolute Basophil count (EDTA Blood)	0.05	10^3 / µl	< 0.2
Platelet Count (EDTA Blood)	196	10^3 / µl	150 - 450
MPV (EDTA Blood)	10.2	fL	7.9 - 13.7
PCT (EDTA Blood/*Automated Blood cell Counter)*	0.20	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate) (Citrated Blood)	10	mm/hr	< 20

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Investigation	Observed Value	Unit	Biological Reference Interval
BIOCHEMISTRY			
Liver Function Test			
Bilirubin(Total) (Serum/*DCA with ATCS)*	0.58	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/*Diazotized Sulfanilic Acid)*	0.26	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/*Derived)*	0.32	mg/dL	0.1 - 1.0
SGOT/AST (Aspartate Aminotransferase) (Serum/*Modified IFCC)*	30.37	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/*Modified IFCC)*	**41.83**	U/L	5 - 41
GGT(Gamma Glutamyl Transpeptidase) (Serum/*IFCC / Kinetic)*	23.31	U/L	< 55
Alkaline Phosphatase (SAP) (Serum/*Modified IFCC)*	108.0	U/L	56 - 119
Total Protein (Serum/*Biuret)*	7.64	gm/dl	6.0 - 8.0
Albumin (Serum/*Bromocresol green)*	4.79	gm/dl	3.5 - 5.2
Globulin (Serum/*Derived)*	2.85	gm/dL	2.3 - 3.6
A : G RATIO (Serum/*Derived)*	1.68		1.1 - 2.2

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Investigation	Observed Value	Unit	Biological Reference Interval
Lipid Profile			
Cholesterol Total (Serum/*CHOD-PAP with ATCS)*	140.79	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Triglycerides (Serum/*GPO-PAP with ATCS)*	**175.48**	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 ñusualò circulating level of triglycerides during most part of the day.

HDL Cholesterol (Serum/*Immunoinhibition)*	**25.28**	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 40 - 59 High Risk: < 40
LDL Cholesterol (Serum/*Calculated)*	80.4	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/*Calculated)*	35.1	mg/dL	< 30
Non HDL Cholesterol (Serum/*Calculated)*	115.5	mg/dL	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.

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Investigation	Observed Value	Unit	Biological Reference Interval
Total Cholesterol/HDL Cholesterol Ratio (Serum/*Calculated)*	5.6		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 (TG/HDL) (Serum/*Calculated)*	6.9		Optimal: < 2.5 Mild to moderate risk: 2.5 - 5.0 High Risk: > 5.0
LDL/HDL Cholesterol Ratio (Serum/*Calculated)*	3.2		Optimal: 0.5 - 3.0 Borderline: 3.1 - 6.0 High Risk: > 6.0

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Investigation	Observed Value	Unit	Biological Reference Interval
Glycosylated Haemoglobin (HbA1c)			
HbA1C (Whole Blood/*HPLC)*	5.4	%	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 (Whole Blood*)*	108.28	mg/dL	

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 HbA1C 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.

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Investigation	Observed Value	Unit	Biological Reference Interval

IMMUNOASSAY

THYROID PROFILE / TFT

T3 (Triiodothyronine) - Total (Serum/*ECLIA)*	**1.85**	ng/ml	0.4 - 1.81

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 (Tyroxine) - Total (Serum/*ECLIA)*	8.85	µg/dl	4.2 - 12.0

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) (Serum/*ECLIA)*	**5.51**	µIU/mL	0.35 - 5.50

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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Investigation	Observed Value	Unit	Biological Reference Interval
CLINICAL PATHOLOGY			
PHYSICAL EXAMINATION (URINE COMPLETE)			
Colour (Urine)	Pale yellow		Yellow to Amber
Appearance (Urine)	Clear		Clear
Volume(CLU) (Urine)	05		
CHEMICAL EXAMINATION (URINE COMPLETE)			
pH (Urine)	5.5		4.5 - 8.0
Specific Gravity (Urine)	1.008		1.002 - 1.035
Ketone (Urine)	Negative		Negative
Urobilinogen (Urine)	Normal		Normal
Blood (Urine)	Negative		Negative
Nitrite (Urine)	Negative		Negative
Bilirubin (Urine)	Negative		Negative
Protein (Urine)	Negative		Negative
Glucose (Urine/*GOD - POD*)	Negative		Negative

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Investigation	Observed Value	Unit	Biological Reference Interval
Leukocytes(CP) (Urine)	Negative		
MICROSCOPIC EXAMINATION (URINE COMPLETE)			
Pus Cells (Urine)	**0-1**	/hpf	NIL
Epithelial Cells (Urine)	**0-1**	/hpf	NIL
RBCs (Urine)	NIL	/HPF	NIL
Others (Urine)	NIL		

INTERPRETATION: Note: Done with Automated Urine Analyser & Automated urine sedimentation analyser. All abnormal reports are reviewed and confirmed microscopically.

Casts (Urine)	NIL	/hpf	NIL
Crystals (Urine)	NIL	/hpf	NIL

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Investigation	Observed Value	Unit	Biological Reference Interval
PHYSICAL EXAMINATION(STOOL COMPLETE)			
Mucus (Stool)	Absent		Absent
Consistency (Stool)	**Semi Solid**		Semi Solid to Solid
Colour (Stool)	Brown		Brown
Blood (Stool)	Absent		Absent
MICROSCOPIC EXAMINATION(STOOL COMPLETE)			
Ova (Stool)	NIL		NIL
Cysts (Stool)	NIL		NIL
Trophozoites (Stool)	NIL		NIL
RBCs (Stool)	NIL	/hpf	Nil
Pus Cells (Stool)	**0-1**	/hpf	NIL
Others (Stool)	NIL		
CHEMICAL EXAMINATION(STOOL ROUTINE)			
Reaction (Stool)	**Acidic**		Alkaline
Reducing Substances (Stool/*Benedict's*)	Negative		Negative

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Investigation	Observed Value	Unit	Biological Reference Interval
IMMUNOHAEMATOLOGY			
BLOOD GROUPING AND Rh TYPING (EDTA Blood/*Agglutination)*	'O' 'Positive'		

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Investigation	Observed Value	Unit	Biological Reference Interval
BIOCHEMISTRY			
BUN / Creatinine Ratio	8.51		6.0 - 22.0
Glucose Fasting (FBS) (Plasma - F/*GOD-PAP)*	93.56	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.

Glucose, Fasting (Urine) (Urine - F/*GOD - POD)*	Negative		Negative
Glucose Postprandial (PPBS) (Plasma - PP/*GOD-PAP)*	103.20	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 secretion, Insulin resistance, Exercise or Stress, Dawn Phenomenon, Somogyi Phenomenon, Anti- diabetic medication during treatment for Diabetes.

Urine Glucose(PP-2 hours) (Urine - PP*)*	Negative		Negative
Blood Urea Nitrogen (BUN) (Serum/*Urease UV / derived)*	9.2	mg/dL	7.0 - 21
Creatinine (Serum/*Modified Jaffe)*	1.08	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 (Serum/*Enzymatic)*	5.89	mg/dL	3.5 - 7.2

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Investigation	Observed Value	Unit	Biological Reference Interval
IMMUNOASSAY			
Prostate specific antigen - Total(PSA) (Serum/*Manometric method)*	1.08	ng/ml	Normal: 0.0 - 4.0 Inflammatory & Non Malignant conditions of Prostate & genitourinary system: 4.01 - 10.0 Suspicious of Malignant disease of Prostate: > 10.0

INTERPRETATION: Analytical sensitivity: 0.008 - 100 ng/mL
PSA is a tumor marker for screening of prostate cancer. Increased levels of PSA are associated with prostate cancer and benign conditions like bacterial infection, inflammation of prostate gland and benign hypertrophy of prostate/ benign prostatic hyperplasia (BPH).
Transient elevation of PSA levels are seen following digital rectal examination, rigorous physical activity like bicycle riding, ejaculation within 24 hours.
PSA levels tend to increase in all men as they age.
Clinical Utility of PSA:
ÅIn the early detection of Prostate cancer.
ÅAs an aid in discriminating between Prostate cancer and Benign Prostatic disease.
ÅTo detect cancer recurrence or disease progression.

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