Name	**: Mr. SUMIT S/o**	**UHID :** 113240	**PID :** 25456
Age/Gender :	36 Year/Male	**Sample Date :** 29-Mar-2024	06:29 PM
Ref. By Dr. :	MEDIWHEEL	**Report Date :** 29-Mar-2024	
Address	: HISAR	**Sample Type :** Inside	*25456*

HEAMATOLOGY

CBC (Complete Blood Count)

Test Name	Value	Unit	Reference Range
Haemoglobin (Hb)	14.9	g/dl	12.0 - 17.4 g/dl
Total RBC Count	5.03	m/cumm	4.70 - 6.10
Haematocrit	47.4	%	35.0 - 50.0 %
Mean Cell Volume	94.2	fL	80.0 - 100 fL
Mean Cell Haemoglobin	31.0	pg	27.0 - 34.0 pg
Mean Cell Haemoglobin Conc	33.0	%	32.0 - 36.0
Red Cell Distribution Width (RDW) - SD	51.5	fL	35.0 - 56.0 fL
Red Cell Distribution Width (RDW) - CV	13.4	%	11.0 - 16.0 %
Total Leucocyte Count	9190	cells/cumm	4000 - 11000
Differential Leucocyte Count	.		
Neutrophils	55	%	32 - 72 %
Lymphocytes	40	%	20 - 50 %
Monocytes	03	%	2 - 11 %
Eosinophils	02	%	1 - 3 %
Basophils	0	%	0 - 2 %
Platelet Count	**1,29,000**	cells/cunmm	150,000 - 450,000
Platelet Distribution Width	**20.4**	fL	15.0 - 18.0 fL
Mean Platelet Volume	**15.1**	fL	7.0 - 13.0 fL

Sample Type : Whole Blood

1.Spurious elevation of platelet count may be seen in patients with extensive burns, extreme microcytosis ,microangiopathic hemolytic anemia, red cell fragmentation ,micro-organisms like bacteria, fungi or yeast, hyperlipidemia, fragments of white blood cell (WBC) cytoplasm in patients with acute leukemia, hairy cell leukemia, lymphomas and in presence of cryoglobulins.
2.Spuriously low platelet counts may be seen in cases of platelet clumping (EDTA induced , platelet cold agglutinins , multiple myeloma) , platelet satellitism and in giant platelet syndromes.
3.Delay in processing due to sample transport may cause a mild time dependent fall in platelet count. It is advisable to repeat the test using a citrate / heparin collection tube to avoid this pitfall.
4. Automated platelet counting is subject to 10-15% variation in the result on the same as well as different analysers due to various preanalytic variables like the sampling site ,skill in sample collection, anticoagulant used ,sample mixing and sample transport etc.

ABO Blood Grouping

Blood Group	A"POSITIVE		

Haemagglutination reaction
A Rh Positive,B Rh Positive,AB Rh Positive,O Rh Positive,A Rh Negative,B Rh Negative,AB Rh Negative,O Rh Negative

Sample Type : Whole Blood

HBA1C

HBA1C	5.2	%	4.27 - 6.00 %

turbidimetric immunoassay

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Test Name	Value	Unit	Reference Range
HBA1C			
Average Blood Glucose	102.54	mg/dl	90.00 - 120.00 mg/dl
turbidimetric immunoassay			
Sample Type : Whole Blood			

Remarks :
GLYCOSYLATED HEMOGLOBIN (HbA1c)
Reference Range : Please correlate with clinical conditions.
Bellow 6.0 % Normal value
6.0 %-7.0 % Good control
7.0 %-8.0 % Fair control
8.0 %-10 % Unsatisfactory control
Above10 % Poor control
Technology : Immunoassay and chemistry technology to measure A1C and total HB (A1C now Bayer)
AVERAGE BLOOD GLUCOSE (ABG) CALCULATED

Reference Range: Please correlate with clinical conditions.
90-120 mg/dl Excellent control
121-150 mg/d Good control
151-180 mg/dl Average control
181-210 mg/dl Action suggested
> 211 mg/dl Panic values
NOTE: Average blood glucose value is calculated from HbA1C value and it indicates average blood sugar level over past three months.
Technology: Derived from Hb A1C Values
Sample Type: Sodium heparin:

ESR			
ESR	**24**	mmHr	0 - 15 mmHr
Sample Type : Whole Blood			

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Test Name	Value	Unit	Reference Range

CLINICAL COMMENTS:
Erythrocyte sedimentation rate (ESR or sed rate) is a relatively simple, inexpensive, non-specifictest that indirectly measures the degree of
inflammation present in the body. Inflammation is part of the body's immune response. It can be acute, developing rapidly after trauma,
injury or infection, for example, or can occur over an extended time (chronic) with conditions such as autoimmune diseases or cancer.
Moderately elevated ESR occurs with inflammation but also with anemia, infection, pregnancy, and with aging. A very high ESR usually has
an obvious cause, such as a severe infection, marked by an increase in globulins, systemic vasculitis, polymyalgia rheumatica or temporal
arteritis. People with multiple myeloma or Waldenstrom's macroglobulinemia (tumors that make large amounts of immunoglobulins) typically
have very high ESRs even if they don't have inflammation.
Factors increasing ESR:
Advanced age
Anemia
Pregnancy
High fibrinogen
Macrocytosis
Kidney problems
Thyroid disease
Some cancers, such as multiple myeloma
Infection
Factors decreasing ESR
Microcytosis
Low fibrinogen
Polycythemia
Marked leukocytosis

CLINICAL-CHEMISTRY

URIC ACID

Uric acid	4.65	mg/dL	3.5 - 7.2
Uricase - POD			
Sample Type : SERUM			

URIC ACID: Increases in case of renal failure, disseminated neoplasms, pregnancy toxaemia, psoriasis, liver disease, sarcoidosis etc. Decrease is reported in Wilson's disease, Fanconi's syndrome, xanthinuria.

Glucose, Post Prandial	121.4	mg/dl	70 - 140 mg/dl
Hexokinase / GOD - POD			
Glucose, Fasting	79.8	mg/dl	70 - 100 mg/dl
Hexokinase / GOD - POD			
Sample Type : SERUM			

Total Protein

Total Protein	6.8	gm/dl	6.0 - 8.3

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Test Name	Value	Unit	Reference Range
Total Protein			
BIURET Albumin	3.98	g/dl	2.9 - 4.5
BCG Globulin	2.82	gm/dl	2.0 - 3.5
Albumin-Globulin Ratio	**1.16**		1.2 - 2.5
Sample Type : SERUM			
UREA. SERUM			
UREA	31.19	mg/dL	14 - 51
KINETIC METHOD WITH UREASE AND GLDH **Sample Type :** SERUM			
UREA: High urea levels suggest poor kidney function, congestive heart failure, shock, stress, recent heart attack or severe burns; bleeding from the gastrointestinal tract; conditions that cause obstruction of urine flow; or dehydration. Low urea levels can be seen in severe liver disease or malnutrition but are not used to diagnose or monitor these conditions. Low urea levels are also seen in normal pregnancy.			
CREATININE SERUM			
CREATININE SERUM	1.2	mg/dL	0.5 - 1.4 mg/dL
Jaffe Kinetic **Sample Type :** SERUM			
CREATININE: Increases in any renal functional impairment (intrinsic renal lesions, decreased perfusion of the kidney, or obstruction of the lower urinary tract), acromegaly and hyperthyroidism. Decreases in pregnancy, muscle wasting.			
LIVER FUNCTION TEST (LFT) (S)			
Total Bilirubin-Serum	**2.26**	mg/dl	0.20 - 1.00 mg/dl
Bilirubin Direct Serum	**1.12**	mg/dl	0.10 - 0.50 mg/dl
Bilirubin Indirect-Serum	**1.14**	mg/dl	0.20 - 0.70 mg/dl
SGOT	**53.14**	IU/L	10 - 40 IU/L
IFCC with Pyridoxal Phosphate **SGPT**	**98.99**	IU/L	07 - 56 IU/L
IFCC with Pyridoxal Phosphate Alkaline Phosphatase	142.1	U/L	44 - 147 U/L
IFCC PNPP Buffer Total Protein	6.8	gm/dl	6.0 - 8.3
BIURET Albumin	3.98	g/dl	3.5 - 5.5 g/dl
BCG Globulin	2.82	gm/dl	2.0 - 3.5 gm/dl
AG RATIO	**1.16**		1.2 - 2.5
Sample Type : SERUM			

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Test Name	Value	Unit	Reference Range

CLINICAL COMMENT:
Liver function tests can be suggested in case of hepatitis, liver cirrhosis and monitor possible side effects of medications. A variety of diseases and infections can cause acute or chronic damage to the liver, causing inflammation (hepatitis), scarring (cirrhosis), bile duct obstructions, liver tumors, and liver dysfunction. Alcohol, drugs, some herbal supplements, and toxins can also inure the liver. A significant amount of liver damage may occur before symptoms such as jaundice, dark urine, light-colored stools, itching (pruritus), nausea, fatigue, diarrhea, and unexplained weight loss or gain appear. Early detection of liver injury is essential in order to minimize damage and preserve liver function.
Alanine aminotransferase (ALT) A very high level of ALT is frequently seen with acute hepatitis. Moderate increases may be seen with chronic hepatitis. People with blocked bile ducts, cirrhosis, and liver cancer may have ALT concentrations that are only moderately elevated or close to normal. Aspartate aminotransferase (AST) A very high level of AST is frequently seen with acute hepatitis. AST may be normal to moderately increased with chronic hepatitis. In people with blocked bile ducts, cirrhosis, and liver cancer, AST concentrations may be moderately increased or close to normal. When liver damage is due to alcohol, AST often increases much more than ALT (this is a pattern seen with few other liver diseases). AST is also increased after heart attacks and with muscle injury.
AST is a less sensitive and less specific marker of liver injury than ALT. AST is more elevated than ALT in alcohol-induced liver injury. AST could elevated more than ALT like: (i)

Lipid Profile

Cholesterol CHOD - PAP	189.7	mg/dl	<200.0 mg/dl
Triglycerides GPO - PAP	**190.4**	mg/dl	< 150 mg/dl
HDL Cholesterol Homogeneous Enzymatic Colorimetric test	44.63	mg/dl	Adult males >45 mg/dl
LDL Cholesterol	106.99	mg/dl	<100 mg/dl
VLDL Cholesterol	38.08	mg/dl	<30.0 mg/dl
CHO/HDL Ratio	4.25	mg/dl	Low risk 3.3-4.4
Non HDL Cholesterol Calculated	145.07	mg/dl	<130 mg/dl

Sample Type : SERUM

Interpretation
Note
1.Measurements in the same patient can show physiological& analytical variations. 3 serial samples 1 wk apart are recommended for Total Cholesterol, Triglycerides, HDL& LDL Cholesterol.
2. NLA-2014 identifies Non HDL Cholesterol (an indicator of all atherogenic lipoproteins such as LDL , VLDL, IDL, Lpa, Chylomicron remnants) along with LDL-cholesterol as co- primary target for cholesterol lowering therapy. Note that major risk factors can modify treatment goals for LDL &Non HDL.
3. Apolipoprotein B is an optional, secondary lipid target for treatment once LDL & Non HDL goals have been achieved.
4. Additional testing for Apolipoprotein B, hsCRP, Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement.

CLINICAL PATHOLOGY

PHYSICAL EXAMINATION

Colour Pale-yellow,Yellowish,Colorless,YELLOW	YELLOW	
Quantity	50	ml

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Test Name	Value	Unit	Reference Range
pH	6.0		
Mucus	ABSENT		
Absent,Present			
Appearance	TURBID		
Slightly turbid,Turbid,Clear			
Chemical Examination (Strip)	.		
Specific Gravity	1.025		
Albumin	NEGATIVE		
Absent,Present(+),Present(2+),Present(3+)			
Sugar	NEGATIVE		
Absent,Present(+),Present(2+),Present(3+)			
Bilirubin	NEGATIVE		
Absent,Present			
Microscopic Examination (Microscopy)	.		
Pus Cells	10-15	/HPF	
Epithelial Cells	6-8	/HPF	
RBC	NIL	/HPF	
Casts	ABSENT		
Crystals	ABSENT		
Bacteria	ABSENT		
Others			
Sample Type : Urine			

ENDOCRINE

Thyroid Hormones (T3 ,T4 & TSH)

T3	1.21	ng/ml	0.60 - 1.81 ng/ml
T4	10.24	ng/dl	5.01 - 12.45 ng/dl
TSH Ultrasensitive	1.58	ulU/ml	0.34 - 5.50 ulU/ml
Sample Type : SERUM			

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Test Name	Value	Unit	Reference Range

Remarks :
Note1.TSH levels are subject to circadian variation, reaching peak levels between 2-4.a.m and at a minium between 6-10 pm. The variation is of the 50 %, hence time of the day has influence on the measured serum TSH concentrations.
2. Recommended test for T3 and T4 unbound or free level as it is metabollically active.
3. Physiological rise in Total T3 and T4 level is seen in pregnancy and in patients on steroid therapy.
Clinical Use-
* Primary Hypothyroidism
* Hperthyroidism
* Hypothalamic- Pituitary hypothyroidism
* Inappropriate-TSH secretion
* Nonthyroidal illness
* Autoimmune thyroid disease
* Pregnency associated thyroid disorders
* Thyroid dysfunction in infancy and early childhood

--End of Report--