Name	**: Mr. MANOJ KUMAR**		**UHID :** 117657	**S No :**	**PID :** 30302
Age/Gender :	38 Year/Male	**A.S : NP**	**Sample Date :** 11-Jun-2024		10:54 AM
Ref. By Dr. :	MEDIWHEEL		**Report Date :** 11-Jun-2024		05:11 PM
Address	: HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range
HEAMATOLOGY			
CBC (Complete Blood Count)			
Haemoglobin (Hb)	13.7	g/dl	12.0 - 17.4 g/dl
Total RBC Count	**6.23**	m/cumm	4.70 - 6.10
Haematocrit	43.1	%	35.0 - 50.0 %
Mean Cell Volume	**69.2**	fL	80.0 - 100 fL
Mean Cell Haemoglobin	**22.0**	pg	27.0 - 34.0 pg
Mean Cell Haemoglobin Conc	**31.8**	%	32.0 - 36.0
Red Cell Distribution Width (RDW)-CV	14.5	%	11.0 - 16.0 %
Red Cell Distribution Width (RDW)-SD	40.2	fL	35.0 - 56.0 fL
-			
Total Leucocyte Count	5970	cells/cumm	4000 - 11000
Differential Leucocyte Count	.		
Neutrophils	45	%	32 - 72 %
Lymphocytes	50	%	20 - 50 %
Monocytes	3	%	2 - 11 %
Eosinophils	2	%	1 - 3 %
Basophils	0	%	0 - 2 %
Platelet Count	1,99,000	cells/cumm	150,000 - 450,000
Platelet Distribution Width	15.1	fL	15.0 - 18.0 fL
Mean Platelet Volume	11.2	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 O"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

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Ref. By Dr. :	MEDIWHEEL		**Report Date :** 11-Jun-2024		05:07 PM
Address	**:** HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range
HBA1C			
HBA1C	5.0	%	4.27 - 6.00 %
turbidimetric immunoassay			
Average Blood Glucose	96.8	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	6	mmHr	0 - 15 mmHr
Sample Type : Whole Blood			

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Ref. By Dr. : MEDIWHEEL		**Report Date :** 11-Jun-2024	05:04 PM
Address : HISAR		**Sample Type :** Inside	*30302*

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	4.8	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,Fasting

Glucose, Fasting	87.6	mg/dl	70 - 110 mg/dl

Hexokinase / GOD - POD

Glucose, Post Prandial	108.3	mg/dl	70 - 140 mg/dl

Hexokinase / GOD - POD
Sample Type : SERUM

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Ref. By Dr. :	MEDIWHEEL		**Report Date :** 11-Jun-2024		05:05 PM
Address	: HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range

Criteria for the diagnosis of diabetes (American diabetes association, 2019)

• Fasting Plasma Glucose ≥126 mg/dL. Fasting is defined as no caloric intake for at least 8 h.
OR
• 2-h PG ≥200 mg/dL during OGTT. The test should be performed using a glucose load containing the equivalent of 75-g anhydrous glucose dissolved in water.*
OR
• HbA1c ≥6.5%.
OR
• Random plasma glucose ≥200 mg/dL in a patient with classic symptoms of hyperglycemia or hyperglycemic crisis .

Criteria defining prediabetes (American diabetes association, 2019)

• FPG 100 mg/dL to 125 mg/dL (Impaired fasting glucose, IFG)
OR
• 2-h PG during 75-g OGTT 140 mg/dL to 199 mg/dL (Impaired glucose tolerance, IGT)
OR
• HbA1c 5.7-6.4%

Note:
All abnormal results must be confirmed with a repeat test on a different day .

Total Protein

Total Protein	7.1	gm/dl	6.0 - 8.3
BIURET Albumin	4.2	g/dl	2.9 - 4.5
BCG Globulin	2.9	gm/dl	2.0 - 3.5
Albumin-Globulin Ratio	1.3		1.2 - 2.5

Sample Type : SERUM

UREA. SERUM

UREA	24.8	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	1.0	mg/dL	0.5 - 1.4 mg/dL

Jaffe Kinetic
Sample Type : SERUM

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Ref. By Dr. :	MEDIWHEEL		**Report Date :** 11-Jun-2024		05:08 PM
Address	: HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range

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	0.90	mg/dl	0.20 - 1.00 mg/dl
Bilirubin Direct Serum	0.40	mg/dl	0.10 - 0.50 mg/dl
Bilirubin Indirect-Serum	0.50	mg/dl	0.20 - 0.70 mg/dl
SGOT IFCC with Pyridoxal Phosphate	29.4	IU/L	10 - 40 IU/L
SGPT IFCC with Pyridoxal Phosphate	40.7	IU/L	07 - 56 IU/L
Alkaline Phosphatase IFCC PNPP Buffer	87.2	U/L	44 - 147 U/L
Total Protein BIURET	7.1	gm/dl	6.0 - 8.3
Albumin BCG	4.2	g/dl	3.5 - 5.5 g/dl
Globulin	2.9	gm/dl	2.0 - 3.5 gm/dl
AG RATIO	1.79		1.2 - 2.5

Sample Type : SERUM

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	162.02	mg/dl	<200.0 mg/dl
Triglycerides GPO - PAP	**156.1**	mg/dl	< 150 mg/dl
HDL Cholesterol	43.6	mg/dl	Adult males >45 mg/dl

Homogeneous Enzymatic Colorimetric test

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Address	: HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range
Lipid Profile			
LDL Cholesterol	87.2	mg/dl	<100 mg/dl
VLDL Cholesterol	31.22	mg/dl	<30.0 mg/dl
CHO/HDL Ratio	3.72	mg/dl	Low risk 3.3-4.4
Non HDL Cholesterol	118.42	mg/dl	<130 mg/dl
Calculated			
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		
Pale-yellow,Yellowish,Colorless,YELLOW			
Quantity	40	ml	
pH	6.5		
Mucus	ABSENT		
Absent,Present			
Appearance	CLEAR		
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	2-4	/HPF	
Epithelial Cells	0-1	/HPF	
RBC	NIL	/HPF	
Casts	ABSENT		
Crystals	ABSENT		
Bacteria	ABSENT		
Others			

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Ref. By Dr. :	MEDIWHEEL		**Report Date :** 11-Jun-2024		05:06 PM
Address	: HISAR		**Sample Type :** Inside		*30302*

Test Name	Value	Unit	Reference Range
Sample Type : Urine			

ENDOCRINE

Thvroid Hormones (T3 .T4 & TSH)

T3	0.97	ng/ml	0.60 - 1.81 ng/ml
T4	10.11	ng/dl	5.01 - 12.45 ng/dl
TSH Ultrasensitive	2.12	ulU/ml	0.34 - 5.50 ulU/ml

Sample Type : SERUM

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--