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MEDICAL LABORATORY

Laboratory Investigation Report

BML280000

Name	:	Mr. IMTIAZ	**Ref No.**	:	25416
DOB	:	22/07/1961	**Sample No.**	:	2310283515
Age / Gender	:	62 Y / Male	**Collected**	:	07/10/2023 11:00
Referred by	:	DR HUSSAIN KARIM	**Registered**	:	07/10/2023 15:15
Centre	:	Peshawar Medical Center LLC	**Reported**	:	07/10/2023 18:31

BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
URIC ACID (SERUM)	**3.2**	**L**	mg/dL	3.5 - 7.2	Uricase, UV
CREATININE (SERUM)	**0.66**	**L**	mg/dL	0.74 - 1.35	Alkaline picrate (IFCC standardised)

Interpretation Notes :

Please note update in referrence range with effect from 31/10/2020 (Source: Mayo Clinical Laboratories).

BLOOD UREA NITROGEN (SERUM)

BUN	**20**	**H**	mg/dL	7 - 18	Calculation
UREA	**42**	**H**	mg/dL	14.98 - 38.52	Kinetic test with urease and glutamate

Interpretation Notes :

High BUN level maybe seen is cases of chronic glomerulonephritis, pyelonephritis, chronic renal disease, acute renal failure, decreased renal perfusion (prerenal azotemia) as in shock, severe congestive heart failure, catabolism, hyperalimentation, ketoacidosis and dehydration (as in diabetes mellitus). Bleeding from the gastrointestinal tract is an important cause of high urea nitrogen, commonly accompanied by elevation of BUN:creatinine ratio.
Low BUN level maybe seen in normal pregnancy, decreased protein intake, with intravenous fluids and intake of some antibiotics.

Sample Type : Serum

End of Report

Dr. Adley Mark Fernandes
M.D (Pathology)
Pathologist

Dr. Vyoma V Shah
M.D (Pathology)
Clinical Pathologist

SAGAR MURUKESAN PILLAI MOLY
Laboratory Technologist

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BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
GLUCOSE (FASTING)	137	H	mg/dL	< 100	Hexokinase

Sample Type : *Fluoride Plasma*

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Test	Result	Flag	Unit	Reference Range	Methodology
UREA (SERUM)	42	H	mg/dL	14.98 - 38.52	Kinetic test with urease and glutamate
MAGNESIUM	2.2		mg/dL	1.8 - 2.4	Methylthymol blue

Interpretation Notes :

Increased magnesium levels relate mostly to patients in renal failure. Increased serum magnesium is also found with Addison disease and in pregnant patients with severe preëclampsia or eclampsia who are receiving magnesiumsulfate as an anticonvulsant. Hypermagnesemia may occur in patients using magnesium-containing cathartics. High magnesium levels are manifested by decreased reflexes, somnolence and heart block.
Decreased level or Hypomagnesia is seen in neuromuscular disorders. Hypomagnesemia is associated with hypocalcemia, hypokalemia, long-term hyperalimentation, intravenous therapy, diabetes mellitus, especially during treatment of ketoacidosis; alcoholism and other types of malnutrition; malabsorption; hyperparathyroidism; dialysis; pregnancy and hyperaldosteronism. Renal loss of magnesium occurs with cis-platinum therapy. Drugs like amphotericin toxicity will causes hypomagnesemia.

Sample Type : Serum

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BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
GLYCATED HEMOGLOBIN (HbA1C) ^					
HBA1C	7.4	H	%	Non- diabetic: 4.0 - 5.6 Prediabetes (Increased risk): 5.7 - 6.4 Diabetes: = or > 6.5	Capillary electrophoresis
eAG (estimated Average Glucose)	166		mg/dL	-	Calculation

Interpretation Notes :

HbA1c Therapeutic goals for glycemic control (ADA)

Adults:
- Goal of therapy: < 7.0 %
- Action suggested: > 8.0 %

Pediatric patients:
- Toddlers and preschoolers: < 8.5 % (but > 7.5 %)
- School age (6-12 years): < 8.0 %
- Adolescents and young adults (13-19 years): < 7.5 %

Sample Type : *EDTA Whole Blood*

End of Report

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BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
LIPID PROFILE TEST					
CHOLESTEROL (TOTAL)	195		mg/dl	Desirable: < 200 Borderline High: 200 - 240 High: > 240	Enzymatic colorimteric assay
HDL CHOLESTEROL	39	L	mg/dl	40 - 60	Homogeneous enzymatic colorimetric assay
LDL CHOLESTEROL DIRECT	122		mg/dl	Optimal: < 100 Near/Above Optimal: 100 - 129 Borderline High: 130 - 159 High: 160 - 189 Very High: > 190	Homogeneous enzymatic colorimetric assay
VLDL CHOLESTEROL	29		mg/dL	< 30	Calculation
NON-HDL CHOLESTEROL	151	H	mg/dL	< 140	Calculation
TRIGLYCERIDES	147		mg/dl	Normal: < 150 Borderline High: 150 - 199 High: 200 - 499 Very High: > 500	Enzymatic colorimetric assay
TOTAL CHOLESTEROL / HDL RATIO	5.0	H	--	< 4.5	Calculation
LDL / HDL RATIO	3.1		--	< 3.5	Calculation

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BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
LIVER FUNCTION TEST					
ALT / SGPT	49		U/L	16 - 63	UV with P5P 37°C (IFCC)
AST / SGOT	17		U/L	15 - 37	Tris buffer UV with P5P 37°C
ALP (ALKALINE PHOSPHATASE)	72		U/L	46 - 116	AMP optimised to IFCC 37°C
GGT (GAMMA GLUTAMYL TRANSFERASE)	33		U/L	15 - 85	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
BILIRUBIN (TOTAL)	0.9		mg/dL	0.2 - 1.0	Jendrassik Grof
BILIRUBIN (DIRECT)	0.2		mg/dL	0 - 0.2	Diazotization
INDIRECT BILIRUBIN	0.70		mg/dL	< or = 0.90	Calculated
TOTAL PROTEIN	7.6		g/dL	6.4 - 8.2	Biuret reaction
ALBUMIN (SERUM)	4.1		g/dL	3.4 - 5.0	Bromocresol purple
GLOBULIN	3.5		g/dL	2.0 - 3.5	Calculation
A/G RATIO	1.2		NULL	0.8 - 2.0	Calculation

Sample Type : Serum

End of Report

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CLINICAL PATHOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
URINE ANALYSIS (ROUTINE)					
MACROSCOPIC EXAMINATION					
COLOR	YELLOW			Pale to Dark Yellow	Visual
APPEARANCE	CLEAR			-	Visual
CHEMISTRY EXAMINATION					
SPECIFIC GRAVITY	1.025			1.002 - 1.035	Bromothymol blue
PH	5.5			4.5 - 8.0	Litmus paper
GLUCOSE	+++			Negative	GOD / POD
BLOOD	NEGATIVE			Negative	Peroxidase
PROTEIN	NEGATIVE			Negative	Protein error of pH indicator
LEUKOCYTE ESTERASE	NEGATIVE			Negative	Esterase
UROBILINOGEN	0.2		E.U./dL	0.2 - 1.0	Diazo
BILIRUBIN	NEGATIVE			Negative	Diazo
KETONE	TRACE			Negative	Legal`s test
NITRITE	NEGATIVE			Negative	Griess test
MICROSCOPIC EXAMINATION					
LEUCOCYTES	1 - 2		/HPF	1 - 4	Microscopy
ERYTHROCYTES	0 - 1		/HPF	0 - 2	Microscopy
EPITHELIAL CELLS	0 - 1		/HPF	Variable	Microscopy
BACTERIA	ABSENT		/HPF	Absent	Microscopy
CASTS	ABSENT		/HPF	Absent	Microscopy
CRYSTALS	ABSENT		/HPF	Absent	Microscopy
MUCUS THREADS	+		/HPF	-	Microscopy
OVA	ABSENT		/HPF	Absent	Microscopy and Micrometry

Comments : Please correlate clinically.
Interpretation Notes :
Instrumentation used for Chemistry test: Siemens Clinitek Advantus.
Sample Type : *URINE*

End of Report

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YAZEEDAH ABDUL MUNEER
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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
COMPLETE BLOOD COUNT (CBC)					
HEMOGLOBIN	15.4		g/dL	13.5 - 17.5	Spectrophotometry (Oxyhemoglobin)
RBC COUNT	5.7		10^6/µL	4.3 - 5.7	Electrical Impedance
HEMATOCRIT	46.1		%	38 - 50	Calculation
MCV	**81.5**	**L**	fL	82 - 98	Calculation
MCH	27.2		pg	27 - 32	Calculation
MCHC	33.4		g/dL	32 - 37	Calculation
RDW	13.4		%	11.8 - 15.6	Calculation
RDW-SD	38.5		fL		Calculation
MPV	8		fL	7.6 - 10.8	Calculation
PLATELET COUNT	282		10^3/µL	150 - 450	Electrical Impedance
PCT	0.2		%	0.01 - 9.99	Calculation
PDW	16.8		Not Applicable	0.1 - 99.9	Calculation
NUCLEATED RBC (NRBC)^	0.1		/100 WBC		Flow Cytometry
ABSOLUTE NRBC COUNT^	0.01		10^3/uL		Calculation
EARLY GRANULOCYTE COUNT (EGC)^	0.5		%		Flow Cytometry
ABSOLUTE EGC^	0		10^3/uL		Calculation
WBC COUNT	8		10^3/µL	4 - 11	Electrical Impedance
DIFFERENTIAL COUNT (DC)					
NEUTROPHILS	56		%	40 - 75	Flow Cytometry
LYMPHOCYTES	32		%	20 - 45	Flow Cytometry
EOSINOPHILS	5		%	0 - 6	Flow Cytometry
MONOCYTES	6		%	1 - 6	Flow Cytometry
BASOPHILS	1		%	0 - 1	Flow Cytometry
ABSOLUTE COUNT					
ABSOLUTE NEUTROPHIL COUNT	4.4		10^3/uL	1.6 - 8.25	Calculation
ABSOLUTE LYMPHOCYTE COUNT	2.6		10^3/uL	0.8 - 4.95	Calculation
ABSOLUTE MONOCYTE COUNT	0.5		10^3/uL	0.04 - 0.66	Calculation
ABSOLUTE EOSINOPHIL COUNT	0.4		10^3/uL	0 - 0.66	Calculation
ABSOLUTE BASOPHIL COUNT	0.1		10^3/uL	0 - 0.11	Calculation

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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology

COMPLETE BLOOD COUNT (CBC)

Interpretation Notes : Please note update on CBC report format and changes in reference ranges.
Sample Type : *EDTA Whole Blood*

End of Report

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ENDOCRINOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
THYROID STIMULATING HORMONE (TSH)	0.72		uIU/mL	0.27 - 4.2	CLIA
THYROXINE, FREE (FT4)	18.1		pmol/L	11.5 - 22.7	CLIA

Sample Type : Serum

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