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TEST PERFORMED AT KOS DIAGNOSTIC LAB, AMBALA CANTT.

NAME	**: Mr. MANISH KUMAR**		
AGE/ GENDER	: 36 YRS/MALE	**PATIENT ID**	: 1642352
COLLECTED BY	:	**REG. NO./LAB NO.**	**: 012410130068**
REFERRED BY	:	**REGISTRATION DATE**	: 13/Oct/2024 07:01 PM
BARCODE NO.	: 01518843	**COLLECTION DATE**	: 13/Oct/2024 07:16PM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 13/Oct/2024 07:49PM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

CLINICAL CHEMISTRY/BIOCHEMISTRY

LIVER FUNCTION TEST (COMPLETE)

Test Name	Value	Unit	Biological Reference interval
BILIRUBIN TOTAL: SERUM *by DIAZOTIZATION, SPECTROPHOTOMETRY*	0.31	mg/dL	INFANT: 0.20 - 8.00 ADULT: 0.00 - 1.20
BILIRUBIN DIRECT (CONJUGATED): SERUM *by DIAZO MODIFIED, SPECTROPHOTOMETRY*	0.12	mg/dL	0.00 - 0.40
BILIRUBIN INDIRECT (UNCONJUGATED): SERUM *by CALCULATED, SPECTROPHOTOMETRY*	0.19	mg/dL	0.10 - 1.00
SGOT/AST: SERUM *by IFCC, WITHOUT PYRIDOXAL PHOSPHATE*	27.8	U/L	7.00 - 45.00
SGPT/ALT: SERUM *by IFCC, WITHOUT PYRIDOXAL PHOSPHATE*	15	U/L	0.00 - 49.00
AST/ALT RATIO: SERUM *by CALCULATED, SPECTROPHOTOMETRY*	1.85	RATIO	0.00 - 46.00
ALKALINE PHOSPHATASE: SERUM *by PARA NITROPHENYL PHOSPHATASE BY AMINO METHYL PROPANOL*	88.79	U/L	40.0 - 130.0
GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM *by SZASZ, SPECTROPHTOMETRY*	45.78	U/L	0.00 - 55.0
TOTAL PROTEINS: SERUM *by BIURET, SPECTROPHOTOMETRY*	7.27	gm/dL	6.20 - 8.00
ALBUMIN: SERUM *by BROMOCRESOL GREEN*	4.58	gm/dL	3.50 - 5.50
GLOBULIN: SERUM *by CALCULATED, SPECTROPHOTOMETRY*	2.69	gm/dL	2.30 - 3.50
A : G RATIO: SERUM *by CALCULATED, SPECTROPHOTOMETRY*	1.7	RATIO	1.00 - 2.00

INTERPRETATION

NOTE:- **To be correlated in individuals having SGOT and SGPT values higher than Normal Referance Range.**

USE:- Differential diagnosis of diseases of hepatobiliary system and pancreas.

INCREASED:

DRUG HEPATOTOXICITY	> 2
ALCOHOLIC HEPATITIS	> 2 (Highly Suggestive)
CIRRHOSIS	1.4 - 2.0

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Test Name	Value	Unit	Biological Reference interval
INTRAHEPATIC CHOLESTATIS	> 1.5		
HEPATOCELLULAR CARCINOMA & CHRONIC HEPATITIS	> 1.3 (Slightly Increased)		

DECREASED:

1. Acute Hepatitis due to virus, drugs, toxins (with AST increased 3 to 10 times upper limit of normal)
2. Extra Hepatic cholestatis: 0.8 (normal or slightly decreased).

PROGNOSTIC SIGNIFICANCE:

NORMAL	< 0.65
GOOD PROGNOSTIC SIGN	0.3 - 0.6
POOR PROGNOSTIC SIGN	1.2 - 1.6

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Test Name	Value	Unit	Biological Reference interval
UREA			
UREA: SERUM *by UREASE - GLUTAMATE DEHYDROGENASE (GLDH)*	10.39	mg/dL	10.00 - 50.00

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Test Name	Value	Unit	Biological Reference interval
CREATININE			
CREATININE: SERUM *by ENZYMATIC, SPECTROPHOTOMETRY*	0.97	mg/dL	0.40 - 1.40

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Test Name	Value	Unit	Biological Reference interval

CALCIUM IONIZED

CALCIUM IONIZED (iCa): SERUM	1.16	mmol/L	1.10 - 1.35

by ISE (ION SELECTIVE ELECTRODE)

Ionized calcium, which accounts for 50% to 55% of total calcium, is the physiologically active form of calcium.

Low ionized calcium values are often seen in renal disease, critically ill patients, or patients receiving rapid transfusion of citrated whole blood or blood products.

Increased serum ionized calcium concentrations may be seen with primary hyperparathyroidism, ectopic parathyroid hormone-producing tumors, excess intake of vitamin D, or various malignancies.

The test is used for assessing calcium states during liver transplantation surgery, cardiopulmonary bypass, or any procedure requiring rapid transfusion of whole blood in neonates and in critically ill patients and as a second-order test in the evaluation of patients with abnormal calcium values

Serum ionized calcium concentrations 50% below normal result in severely reduced cardiac stroke work. With moderate to severe hypocalcemia, left ventricular function may be profoundly depressed.

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Test Name	Value	Unit	Biological Reference interval

MAGNESIUM

MAGNESIUM: SERUM *by XYLIDYL BLUE, SPECTROPHOTMETRY*	1.82	mg/dL	1.6 - 2.6

INTERPRETATION:-

1.Magnesium along with potassium is a major intracellular cation.
2.Magnesium is a cofactor of many enzyme systems. All adenosine triphosphate (ATP)-dependent enzymatic reactions require magnesium as a cofactor. 3.Approximately 70% of magnesium ions are stored in bone. The remainder is involved in intermediary metabolic processes; about 70% is present in free form while the other 30% is bound to proteins (especially albumin), citrates, phosphate, and other complex formers. The serum magnesium level is kept constant within very narrow limits. Regulation takes place mainly via the kidneys, primarily via the ascending loop of Henle.

INCREASD (HYPERMAGNESIA):-Conditions that interfere with glomerular filtration result in retention of magnesium and hence elevation of serum concentrations.
1.Acute and chronic renal failure.
2.magnesium overload.
3.Magnesium release from the intracellular space.
4.Mild-to-moderate hypermagnesemia may prolong atrioventricular conduction time. Magnesium toxicity may result in central nervous system (CNS) depression, cardiac arrest, and respiratory arrest.

DECREASED (HYPOMAGNESIA):-
1.Chronic alcoholism.
2.Childhood malnutrition.
3.Malabsorption.
4.Acute pancreatitis.
5.Hypothyroidism.
6.Chronic glomerulonephritis.
7.Aldosteronism.
8.Prolonged intravenous feeding.

NOTE:-
Numerous studies have shown a correlation between magnesium deficiency and changes in calcium-, potassium-, and phosphate-homeostasis which are associated with cardiac disorders such as ventricular arrhythmias that cannot be treated by conventional therapy, increased sensitivity to digoxin, coronary artery spasms, and sudden death. Additional concurrent symptoms include neuromuscular and neuropsychiatric disorders.

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Test Name	Value	Unit	Biological Reference interval

AMMONIA (NH3)

AMMONIA (NH3): BLOOD *by ENZYMATIC - GLDH, SPECTROPHOTOMETRY*	**182.1^{H}**	**µg/dL**	**27 - 90**

INTERPRETATION:

Ammonia is elevated in the following condition:
1.Liver disease
2.urinary tract infection with distentionand stasis
3.Reye syndrome
4.inborn errors of metabolism including deficiency of enzymes in the urea cycle
5.HHH syndrome (hyperammonemia - homocitrullinuria, hyperornithinemia)
6.Some normal neonates (usually returning to normal in 48 hours)
7.Total parenteral nutrition
8. Ureterosigmoidostomy
9.Sodium valproate therapy.
10.Ammonia determination is indicated in neonates with neurological deterioration, subjects with lethargy and/or emesis not explained, and in patients with possible encephalopathy.
11.Ammonia measurements are mainly of use in the diagnosis of urea cycle deficiencies (any neonate with unexplained nausea, vomiting, or neurological deterioration appearing after first feeding

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Test Name	Value	Unit	Biological Reference interval
ELECTROLYTES PROFILE: SODIUM AND POTASSIUM			
SODIUM: SERUM *by ISE (ION SELECTIVE ELECTRODE)*	**127.7^{L}**	**mmol/L**	**135.0 - 150.0**
POTASSIUM: SERUM *by ISE (ION SELECTIVE ELECTRODE)*	4.46	mmol/L	3.50 - 5.00

INTERPRETATION:-

SODIUM:-

Sodium is the major cation of extra-cellular fluid. Its primary function in the body is to chemically maintain osmotic pressure & acid base balance & to transmit nerve impulse.

HYPONATREMIA (LOW SODIUM LEVEL) CAUSES:-

1. Low sodium intake.
2. Sodium loss due to diarrhea & vomiting with adequate water and iadequate salt replacement.
3. Diuretics abuses.
4. Salt loosing nephropathy.
5. Metabolic acidosis.
6. Adrenocortical issuficiency .
7.Hepatic failure.

HYPERNATREMIA (INCREASED SODIUM LEVEL) CAUSES:-

1.Hyperapnea (Prolonged)
2.Diabetes insipidus
3.Diabetic acidosis
4.Cushings syndrome
5.Dehydration

POTASSIUM:-

Potassium is the major cation in the intracellular fluid. 90% of potassium is concentrated within the cells. When cells are damaged, potassium is released in the blood.

HYPOKALEMIA (LOW POTASSIUM LEVELS):-

1.Diarrhoea, vomiting & malabsorption.
2. Severe Burns.
3.Increased Secretions of Aldosterone

HYPERKALEMIA (INCREASED POTASSIUM LEVELS):-

1.Oliguria
2.Renal failure or Shock
3.Respiratory acidosis
4.Hemolysis of blood

*** End Of Report ***

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