

**Dr. Vinay Chopra**  
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**Dr. Yugam Chopra**  
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<b>NAME</b>	: Dr. SATISH	<b>PATIENT ID</b>	: 1723404
<b>AGE/ GENDER</b>	: 62 YRS/Male	<b>REG. NO./LAB NO.</b>	: 012501140020
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 14/Jan/2025 11:12 AM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 14/Jan/2025 11:17AM
<b>BARCODE NO.</b>	: 01523865	<b>REPORTING DATE</b>	: 14/Jan/2025 11:33AM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC LAB		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
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### HAEMATOLOGY

#### COMPLETE BLOOD COUNT (CBC)

##### RED BLOOD CELLS (RBCS) COUNT AND INDICES

HAEMOGLOBIN (HB) <i>by CALORIMETRIC</i>	14.8	gm/dL	12.0 - 17.0
RED BLOOD CELL (RBC) COUNT <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	5.59 <sup>H</sup>	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	44.5	%	40.0 - 54.0
MEAN CORPUSCULAR VOLUME (MCV) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	79.5 <sup>L</sup>	fL	80.0 - 100.0
MEAN CORPUSCULAR HAEMOGLOBIN (MCH) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	26.5 <sup>L</sup>	pg	27.0 - 34.0
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	33.3	g/dL	32.0 - 36.0
RED CELL DISTRIBUTION WIDTH (RDW-CV) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	16.9 <sup>H</sup>	%	11.00 - 16.00
RED CELL DISTRIBUTION WIDTH (RDW-SD) <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	50.9	fL	35.0 - 56.0
MENTZERS INDEX <i>by CALCULATED</i>	14.22	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
GREEN & KING INDEX <i>by CALCULATED</i>	24.06	RATIO	BETA THALASSEMIA TRAIT:<= 65.0 IRON DEFICIENCY ANEMIA: > 65.0

##### WHITE BLOOD CELLS (WBCS)

TOTAL LEUCOCYTE COUNT (TLC) <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	8740	/cmm	4000 - 11000
NUCLEATED RED BLOOD CELLS (nRBCS) <i>by AUTOMATED 6 PART HEMATOLOGY ANALYZER</i>	NIL		0.00 - 20.00
NUCLEATED RED BLOOD CELLS (nRBCS) % <i>by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER</i>	NIL	%	< 10 %



  
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<b><u>DIFFERENTIAL LEUCOCYTE COUNT (DLC)</u></b>			
NEUTROPHILS <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	68	%	50 - 70
LYMPHOCYTES <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	22	%	20 - 40
EOSINOPHILS <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	4	%	1 - 6
MONOCYTES <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	6	%	2 - 12
BASOPHILS <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	0	%	0 - 1
<b><u>ABSOLUTE LEUKOCYTES (WBC) COUNT</u></b>			
ABSOLUTE NEUTROPHIL COUNT <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	5943	/cmm	2000 - 7500
ABSOLUTE LYMPHOCYTE COUNT <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	1923	/cmm	800 - 4900
ABSOLUTE EOSINOPHIL COUNT <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	350	/cmm	40 - 440
ABSOLUTE MONOCYTE COUNT <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	524	/cmm	80 - 880
ABSOLUTE BASOPHIL COUNT <i>by FLOW CYTOMETRY BY SF CUBE &amp; MICROSCOPY</i>	0	/cmm	0 - 110
<b><u>PLATELETS AND OTHER PLATELET PREDICTIVE MARKERS.</u></b>			
PLATELET COUNT (PLT) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	221000	/cmm	150000 - 450000
PLATELETCRIT (PCT) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	0.29	%	0.10 - 0.36
MEAN PLATELET VOLUME (MPV) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	<b>13<sup>H</sup></b>	fL	6.50 - 12.0
PLATELET LARGE CELL COUNT (P-LCC) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	<b>108000<sup>H</sup></b>	/cmm	30000 - 90000
PLATELET LARGE CELL RATIO (P-LCR) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	<b>48.8<sup>H</sup></b>	%	11.0 - 45.0
PLATELET DISTRIBUTION WIDTH (PDW) <i>by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE</i>	16.3	%	15.0 - 17.0

NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD



  
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<b>BARCODE NO.</b>	: 01523865	<b>REPORTING DATE</b>	: 14/Jan/2025 02:07PM
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### GLYCOSYLATED HAEMOGLOBIN (HbA1c)

GLYCOSYLATED HAEMOGLOBIN (HbA1c): WHOLE BLOOD <i>by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)</i>	<b>7.1<sup>H</sup></b>	%	4.0 - 6.4
ESTIMATED AVERAGE PLASMA GLUCOSE <i>by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)</i>	<b>157.07<sup>H</sup></b>	mg/dL	60.00 - 140.00

#### INTERPRETATION:

AS PER AMERICAN DIABETES ASSOCIATION (ADA):	
REFERENCE GROUP	GLYCOSYLATED HEMOGLOBIN (HbA1c) in %
Non diabetic Adults >= 18 years	<5.7
At Risk (Prediabetes)	5.7 – 6.4
Diagnosing Diabetes	>= 6.5
Therapeutic goals for glycemic control	<b>Age &gt; 19 Years</b>
	Goals of Therapy:
	< 7.0
	Actions Suggested:
	>8.0
	<b>Age &lt; 19 Years</b>
	Goal of therapy:
	<7.5

#### COMMENTS:

- Glycosylated hemoglobin (HbA1c) test is three monthly monitoring done to assess compliance with therapeutic regimen in diabetic patients.
- Since Hb1c reflects long term fluctuations in blood glucose concentration, a diabetic patient who has recently under good control may still have high concentration of HbA1c. Converse is true for a diabetic previously under good control but now poorly controlled.
- Target goals of < 7.0 % may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targeting a goal of < 7.0% may not be appropriate.
- High HbA1c (>9.0 -9.5 %) is strongly associated with risk of development and rapid progression of microvascular and nerve complications
- Any condition that shorten RBC life span like acute blood loss, hemolytic anemia falsely lower HbA1c results.
- HbA1c results from patients with HbSS, HbSC and HbD must be interpreted with caution, given the pathological processes including anemia, increased red cell turnover, and transfusion requirement that adversely impact HbA1c as a marker of long-term glycemic control.
- Specimens from patients with polycythemia or post-splenectomy may exhibit increase in HbA1c values due to a somewhat longer life span of the red cells.





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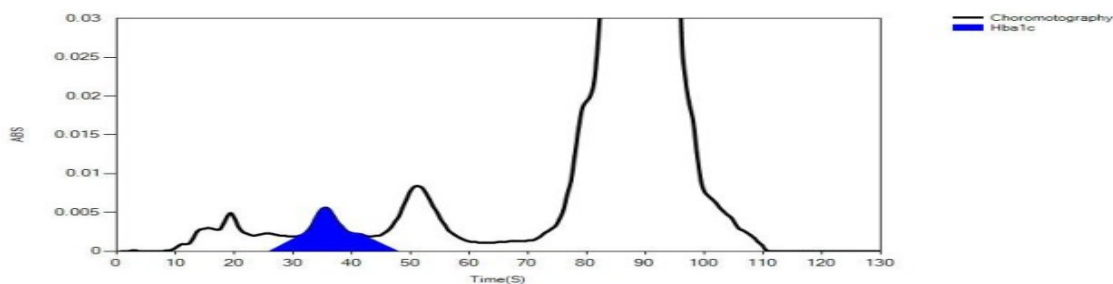
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LIFOTRONIC Graph Report

Name :	Case :	Patient Type :	Test Date : 14/01/2025 16:21:56
Age :	Department :	Sample Type : Whole Blood EDTA	Sample Id : 01523865
Gender :			Total Area : 12706

Peak Name	Retention Time(s)	Absorbance	Area	Result (Area %)
HbA0	68	3317	11340	89.2
HbA1c	37	84	694	7.1
La1c	26	56	318	3.2
HbF	19	23	103	0.3
Hba1b	14	49	143	1.5
Hba1a	11	30	108	1.1



  
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<b>BARCODE NO.</b>	: 01523865	<b>REPORTING DATE</b>	: 14/Jan/2025 11:52AM
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### ERYTHROCYTE SEDIMENTATION RATE (ESR)

ERYTHROCYTE SEDIMENTATION RATE (ESR) **26<sup>H</sup>** mm/1st hr 0 - 20  
*by RED CELL AGGREGATION BY CAPILLARY PHOTOMETRY*

#### INTERPRETATION:

1. ESR is a non-specific test because an elevated result often indicates the presence of inflammation associated with infection, cancer and auto-immune disease, but does not tell the health practitioner exactly where the inflammation is in the body or what is causing it.
2. An ESR can be affected by other conditions besides inflammation. For this reason, the ESR is typically used in conjunction with other test such as C-reactive protein
3. This test may also be used to monitor disease activity and response to therapy in both of the above diseases as well as some others, such as systemic lupus erythematosus

#### CONDITION WITH LOW ESR

A low ESR can be seen with conditions that inhibit the normal sedimentation of red blood cells, such as a high red blood cell count (polycythaemia), significantly high white blood cell count (leucocytosis), and some protein abnormalities. Some changes in red cell shape (such as sickle cells in sickle cell anaemia) also lower the ESR.

#### NOTE:

1. ESR and C - reactive protein (C-RP) are both markers of inflammation.
2. Generally, ESR does not change as rapidly as does CRP, either at the start of inflammation or as it resolves.
3. **CRP is not affected by as many other factors as is ESR, making it a better marker of inflammation.**
4. If the ESR is elevated, it is typically a result of two types of proteins, globulins or fibrinogen.
5. Women tend to have a higher ESR, and menstruation and pregnancy can cause temporary elevations.
6. Drugs such as dextran, methyldopa, oral contraceptives, penicillamine procainamide, theophylline, and vitamin A can increase ESR, while aspirin, cortisone, and quinine may decrease it





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**CLINICAL CHEMISTRY/BIOCHEMISTRY**  
**GLUCOSE RANDOM (R)**

GLUCOSE RANDOM (R): PLASMA <i>by GLUCOSE OXIDASE - PEROXIDASE (GOD-POD)</i>	<b>182.93<sup>H</sup></b>	mg/dL	NORMAL: < 140.00 PREDIABETIC: 140.0 - 200.0 DIABETIC: > OR = 200.0
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**INTERPRETATION**

**IN ACCORDANCE WITH AMERICAN DIABETES ASSOCIATION GUIDELINES:**

1. A random plasma glucose level below 140 mg/dl is considered normal.
2. A random glucose level between 140 - 200 mg/dl is considered as glucose intolerant or prediabetic. A fasting and post-prandial blood test (after consumption of 75 gms of glucose) is recommended for all such patients.
3. A random glucose level of above 200 mg/dl is highly suggestive of diabetic state. A repeat post-prandial is strongly recommended for all such patients. A fasting plasma glucose level in excess of 125 mg/dl on both occasions is confirmatory for diabetic state.



  
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Test Name	Value	Unit	Biological Reference interval
<b>LIPID PROFILE : BASIC</b>			
CHOLESTEROL TOTAL: SERUM <i>by CHOLESTEROL OXIDASE PAP</i>	195.6	mg/dL	OPTIMAL: < 200.0 BORDERLINE HIGH: 200.0 - 239.0 HIGH CHOLESTEROL: > OR = 240.0
TRIGLYCERIDES: SERUM <i>by GLYCEROL PHOSPHATE OXIDASE (ENZYMATIC)</i>	107.06	mg/dL	OPTIMAL: < 150.0 BORDERLINE HIGH: 150.0 - 199.0 HIGH: 200.0 - 499.0 VERY HIGH: > OR = 500.0
HDL CHOLESTEROL (DIRECT): SERUM <i>by SELECTIVE INHIBITION</i>	60.5	mg/dL	LOW HDL: < 30.0 BORDERLINE HIGH HDL: 30.0 - 60.0 HIGH HDL: > OR = 60.0
LDL CHOLESTEROL: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	113.69	mg/dL	OPTIMAL: < 100.0 ABOVE OPTIMAL: 100.0 - 129.0 BORDERLINE HIGH: 130.0 - 159.0 HIGH: 160.0 - 189.0 VERY HIGH: > OR = 190.0
NON HDL CHOLESTEROL: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	<b>135.1<sup>H</sup></b>	mg/dL	OPTIMAL: < 130.0 ABOVE OPTIMAL: 130.0 - 159.0 BORDERLINE HIGH: 160.0 - 189.0 HIGH: 190.0 - 219.0 VERY HIGH: > OR = 220.0
VLDL CHOLESTEROL: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	21.41	mg/dL	0.00 - 45.00
TOTAL LIPIDS: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	498.26	mg/dL	350.00 - 700.00
CHOLESTEROL/HDL RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	3.23	RATIO	LOW RISK: 3.30 - 4.40 AVERAGE RISK: 4.50 - 7.0 MODERATE RISK: 7.10 - 11.0 HIGH RISK: > 11.0



  
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LDL/HDL RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.88	RATIO	LOW RISK: 0.50 - 3.0 MODERATE RISK: 3.10 - 6.0 HIGH RISK: > 6.0
TRIGLYCERIDES/HDL RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.77 <sup>L</sup>	RATIO	3.00 - 5.00

**INTERPRETATION:**

- Measurements in the same patient can show physiological & analytical variations. Three serial samples 1 week apart are recommended for Total Cholesterol, Triglycerides, HDL & LDL Cholesterol.
- As per NLA-2014 guidelines, all adults above the age of 20 years should be screened for lipid status. Selective screening of children above the age of 2 years with a family history of premature cardiovascular disease or those with at least one parent with high total cholesterol is recommended.
- Low HDL levels are associated with increased risk for Atherosclerotic Cardiovascular disease (ASCVD) due to insufficient HDL being available to participate in reverse cholesterol transport, the process by which cholesterol is eliminated from peripheral tissues.
- NLA-2014 identifies Non HDL Cholesterol (an indicator of all atherogenic lipoproteins such as LDL, VLDL, IDL, Lp(a), 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.
- Additional testing for Apolipoprotein B, hsCRP, Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement



  
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<b>BARCODE NO.</b>	: 01523865	<b>REPORTING DATE</b>	: 14/Jan/2025 04:41PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC LAB		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
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### LIVER FUNCTION TEST (COMPLETE)

BILIRUBIN TOTAL: SERUM <i>by DIAZOTIZATION, SPECTROPHOTOMETRY</i>	1.19	mg/dL	INFANT: 0.20 - 8.00 ADULT: 0.00 - 1.20
BILIRUBIN DIRECT (CONJUGATED): SERUM <i>by DIAZO MODIFIED, SPECTROPHOTOMETRY</i>	0.67 <sup>H</sup>	mg/dL	0.00 - 0.40
BILIRUBIN INDIRECT (UNCONJUGATED): SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	0.52	mg/dL	0.10 - 1.00
SGOT/AST: SERUM <i>by IFCC, WITHOUT PYRIDOXAL PHOSPHATE</i>	75.8 <sup>H</sup>	U/L	7.00 - 45.00
SGPT/ALT: SERUM <i>by IFCC, WITHOUT PYRIDOXAL PHOSPHATE</i>	67.8 <sup>H</sup>	U/L	0.00 - 49.00
AST/ALT RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.12	RATIO	0.00 - 46.00
ALKALINE PHOSPHATASE: SERUM <i>by PARA NITROPHENYL PHOSPHATASE BY AMINO METHYL PROPANOL</i>	230.18 <sup>H</sup>	U/L	40.0 - 130.0
GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM <i>by SZASZ, SPECTROPHOTOMETRY</i>	429.74 <sup>H</sup>	U/L	0.00 - 55.0
TOTAL PROTEINS: SERUM <i>by BIURET, SPECTROPHOTOMETRY</i>	7.18	gm/dL	6.20 - 8.00
ALBUMIN: SERUM <i>by BROMOCRESOL GREEN</i>	4.13	gm/dL	3.50 - 5.50
GLOBULIN: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	3.05	gm/dL	2.30 - 3.50
A : G RATIO: SERUM <i>by CALCULATED, SPECTROPHOTOMETRY</i>	1.35	RATIO	1.00 - 2.00

#### NOTE 2

#### ADVICE

#### INTERPRETATION

**NOTE:-** To be correlated in individuals having SGOT and SGPT values higher than Normal Reference 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 cholestasis: 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
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**UREA**

UREA: SERUM	21.93	mg/dL	10.00 - 50.00
by UREASE - GLUTAMATE DEHYDROGENASE (GLDH)			



  
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Test Name	Value	Unit	Biological Reference interval
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**CREATININE**

CREATININE: SERUM by ENZYMATIC, SPECTROPHOTOMETRY	1.08	mg/dL	0.40 - 1.40
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### URIC ACID

URIC ACID: SERUM	4.69	mg/dL	3.60 - 7.70
by URICASE - OXIDASE PEROXIDASE			

#### INTERPRETATION:-

1. GOUT occurs when high levels of Uric Acid in the blood cause crystals to form & accumulate around a joint.  
 2. Uric Acid is the end product of purine metabolism. Uric acid is excreted to a large degree by the kidneys and to a smaller degree in the intestinal tract by microbial degradation.

#### INCREASED:-

##### (A).DUE TO INCREASED PRODUCTION:-

1. Idiopathic primary gout.
2. Excessive dietary purines (organ meats, legumes, anchovies, etc).
3. Cytolytic treatment of malignancies especially leukemias & lymphomas.
4. Polycythemia vera & myeloid metaplasia.
5. Psoriasis.
6. Sickle cell anaemia etc.

##### (B).DUE TO DECREASED EXCRETION (BY KIDNEYS)

1. Alcohol ingestion.
2. Thiazide diuretics.
3. Lactic acidosis.
4. Aspirin ingestion (less than 2 grams per day).
5. Diabetic ketoacidosis or starvation.
6. Renal failure due to any cause etc.

#### DECREASED:-

##### (A).DUE TO DIETARY DEFICIENCY

1. Dietary deficiency of Zinc, Iron and molybdenum.
2. Fanconi syndrome & Wilson's disease.
3. Multiple sclerosis.
4. Syndrome of inappropriate antidiuretic hormone (SIADH) secretion & low purine diet etc.

##### (B).DUE TO INCREASED EXCRETION

1. Drugs:- Probenecid, sulphinpyrazone, aspirin doses (more than 4 grams per day), corticosteroids and ACTH, anti-coagulants and estrogens etc.



  
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Test Name	Value	Unit	Biological Reference interval
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### AMYLASE

AMYLASE - SERUM	79.74	IU/L	0 - 90
<i>by CNPG 3, SPECTROPHOTOMETRY</i>			

#### INTERPRETATION

#### COMMENTS

1. Amylase is produced in the Pancreas and most of the elevation in serum is due to increased rate of Amylase entry into the blood stream / decreased rate of clearance or both.
2. Serum Amylase rises within 6 to 48 hours of onset of Acute pancreatitis in 80% of patients, but is not proportional to the severity of the disease.
3. Activity usually returns to normal in 3-5 days in patients with milder edematous form of the disease.
4. Values persisting longer than this period suggest continuing necrosis of pancreas or Pseudocyst formation.
5. Approximately 20% of patients with Pancreatitis have normal or near normal activity.
6. Hyperlipemic patients with Pancreatitis also show spuriously normal Amylase levels due to suppression of Amylase activity by triglyceride.
7. Low Amylase levels are seen in Chronic Pancreatitis, Congestive Heart failure, 2nd & 3rd trimesters of pregnancy, Gastrointestinal cancer & bone fractures.





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Test Name	Value	Unit	Biological Reference interval
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### LIPASE

LIPASE - SERUM 44.33 U/L 0 - 60

by METHYL RESORUFIN, SPECTROPHOTOMETRY

#### INTERPRETATION

1. Pancreas is the major and primary source of serum lipase though lipases are also present in liver, stomach, intestine, WBC, fat cells and milk.
2. In acute pancreatitis, serum lipase becomes elevated at the same time as amylase and remains high for 7-10 days.
3. Increased lipase activity rarely lasts longer than 14 days.
4. Prolonged increase suggests poor prognosis or presence of a cyst.
5. The combined use of serum lipase and serum amylase is effective in ruling out acute pancreatitis.

#### INCREASED LEVEL:

1. Acute & Chronic pancreatitis
2. Obstruction of pancreatic duct
3. Non pancreatic conditions like renal diseases, acute cholecystitis, intestinal obstruction, duodenal ulcer, alcoholism, diabetic ketoacidosis and following endoscopic retrograde cholangiopancreatography

#### NOTE:

1. Elevations 2 to 50 times the upper reference have been reported. The increase in serum lipase is not necessarily proportional to the severity of the attack. Normalization is not necessarily a sign of resolution.

#### ADVICE:

Concomitant testing of serum amylase and lipase is highly recommended to establish a diagnosis of pancreatic injury



  
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Test Name	Value	Unit	Biological Reference interval
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### CREATININE PHOSPHOKINASE-MB (CPK-MB)

CPK-MB - SERUM	2.69	ng/mL	0.0 - 5.0
by EFIA (ENZYM FLUORESCENT IMMUNOASSAY)			

#### Interpretation:-

- Alternative name of Creatine Kinase (CK) is Creatine phospho-kinase(CPK).
- Creatine Kinase (CK) is a dimeric enzyme composed of two types of monomer sub-units (i.e. M-Muscular & B-Brain), which combine to form three distinct CK isoenzymes.
  - CK-BB(CK-I), is produced primarily by brain, lungs and smooth muscles, and enters the blood only on injury to these organs like cerebrovascular accidents or pulmonary infarctions.
  - CK-MB (CK-II), is produced primarily by heart muscle;
  - CK-MM (CK-III), is produced primarily by skeletal muscle.
- Normally very little CK is found circulating in the blood. Elevated levels indicate damage to either muscle or brain possibly from a myocardial infarction, muscle disease, or stroke.
- CK levels are reduced in first half of pregnancy, and increased in second half of pregnancy.

#### Increased:-

##### Physiological:-

- Strenuous physical activity.
- New Born.

##### Pathological :-

- Myocardial & pulmonary infarction
- Accident and recent surgery.
- Drugs:- Statins.
- Convulsions & brain tumour.
- Myopathies
- Malignant hyperthermia
- Hypothyroidism & Hyperthyroidism

5).CK-MB (CK-II) levels increase significantly 4-6 hours following a myocardial infarction and peak at around 12-24 hours after the infarct. The levels return to normal, in case of no further myocardial damage, after 24 to 48 hours. Hence the increased levels of CK-MB along with elevated levels of total CK is a good indicator of myocardial infarction.

6).For diagnosis of MI with high sensitivity and specificity, serial sampling over a period of 8 to 12 hours is required. For accurate diagnosis of myocardial infarction, CK-MB activity along with total CK should be measured. If the total CK activity is raised and CK-MB contributes more than 6% of the total activity, then myocardial infarction is considered highly probable.



  
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Test Name	Value	Unit	Biological Reference interval
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### IMMUNOPATHOLOGY/SEROLOGY C-REACTIVE PROTEIN (CRP)

C-REACTIVE PROTEIN (CRP) QUANTITATIVE:	4.21	mg/L	0.0 - 6.0
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SERUM

by NEPHLOMETRY


**INTERPRETATION:**


1. C-reactive protein (CRP) is one of the most sensitive acute-phase reactants for inflammation.
2. CRP levels can increase dramatically (100-fold or more) after severe trauma, bacterial infection, inflammation, surgery, or neoplastic proliferation.
3. CRP levels (Quantitative) has been used to assess activity of inflammatory disease, to detect infections after surgery, to detect transplant rejection, and to monitor these inflammatory processes.
4. As compared to ESR, CRP shows an earlier rise in inflammatory disorders which begins in 4-6 hrs, the intensity of the rise being higher than ESR and the recovery being earlier than ESR. Unlike ESR, CRP levels are not influenced by hematologic conditions like Anemia, Polycythemia etc.,
5. Elevated values are consistent with an acute inflammatory process.

**NOTE:**

1. Elevated C-reactive protein (CRP) values are nonspecific and should not be interpreted without a complete clinical history.
2. Oral contraceptives may increase CRP levels.



  
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Test Name	Value	Unit	Biological Reference interval
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### TROPONIN I ULTRASENSITIVE (QUANTITATIVE)

TROPONIN I ULTRASENSITIVE (QUANTITATIVE)	0.01	ng/mL	< 0.50
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by ELFA (ENZYME LINKED FLUORESCENT IMMUNOASSAY), NEXT GENERATION, ULTRASENSITIVE

#### INTERPRETATION:

**NOTE:**  
 1.False negative / positive results are observed in patients receiving mouse monoclonal antibodies for diagnosis or therapy.

#### COMMENTS

- 1.Troponin is a regulatory complex of 3 proteins that resides at regular intervals in the thin filament of striated muscle.
- 2.Cardiac Troponin is a cardiospecific, highly sensitive marker of myocardial damage and has never shown to be expressed in normal, regenerating or diseased skeletal muscle.
- 3.In cases of acute myocardial damage, Troponin I levels rise in serum about 3-4 hours after appearance of cardiac symptoms and remain elevated upto 10 days.
- 4.It is an independent prognostic marker which can predict near, mid and long term outcome in patients with Acute Coronary Syndrome (ACS).


#### INCREASED LEVELS


- 1.Congestive Heart Failure
- 2.Cardiomyopathy
- 3.Myocarditis
- 4.Heart contusion
- 5.Interventional therapy like cardiac surgery and drug induced cardiotoxicity

#### USES

- 1.To differentiate patients with Non ST elevation Myocardial Infarction ( NSTMI) from Unstable angina-patients with ACS with elevated Troponin I and / or CK-MB are considered to have NSTMI whereas the diagnosis of Unstable angina is established if Troponin I and CK-MB are within the normal range.
- 2.Ideally Troponin I should be measured at presentation ( 0 hour) and repeated after 6-9 hours & 12-24 hours if earlier specimens are normal and the clinical suspicion is high.
3. Risk stratification of patients presenting with ACS and for cardiac risk in patients with Chronic Renal Failure. As it offers powerful risk assessment, in ACS, Troponin I monitoring should be included in practice guidelines.
4. For selection of more intensive therapy and intervention in patients with elevated Troponin I.



  
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Test Name	Value	Unit	Biological Reference interval
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## CLINICAL PATHOLOGY

### URINE ROUTINE & MICROSCOPIC EXAMINATION

#### PHYSICAL EXAMINATION

QUANTITY RECEIVED	10	ml	
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
COLOUR	PALE YELLOW		PALE YELLOW
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
TRANSPARANCY	CLEAR		CLEAR
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
SPECIFIC GRAVITY	1.02		1.002 - 1.030
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			


#### CHEMICAL EXAMINATION


REACTION	ACIDIC		
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
PROTEIN	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
SUGAR	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
pH	6		5.0 - 7.5
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
BILIRUBIN	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
NITRITE	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
UROBILINOGEN	Normal	EU/dL	0.2 - 1.0
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
KETONE BODIES	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
BLOOD	Negative		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			
ASCORBIC ACID	NEGATIVE (-ve)		NEGATIVE (-ve)
by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY			

#### MICROSCOPIC EXAMINATION

RED BLOOD CELLS (RBCs)	NEGATIVE (-ve)	/HPF	0 - 3
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**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist


**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist


<b>NAME</b>	: Dr. SATISH	<b>PATIENT ID</b>	: 1723404
<b>AGE/ GENDER</b>	: 62 YRS/Male	<b>REG. NO./LAB NO.</b>	: 012501140020
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 14/Jan/2025 11:12 AM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 14/Jan/2025 11:17AM
<b>BARCODE NO.</b>	: 01523865	<b>REPORTING DATE</b>	: 14/Jan/2025 12:40PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC LAB		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
PUS CELLS	2-4	/HPF	0 - 5
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
EPITHELIAL CELLS	1-3	/HPF	ABSENT
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
CRYSTALS	NEGATIVE (-ve)		NEGATIVE (-ve)
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
CASTS	NEGATIVE (-ve)		NEGATIVE (-ve)
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
BACTERIA	NEGATIVE (-ve)		NEGATIVE (-ve)
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
OTHERS	NEGATIVE (-ve)		NEGATIVE (-ve)
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			
TRICHOMONAS VAGINALIS (PROTOZOA)	ABSENT		ABSENT
by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT			

\*\*\* End Of Report \*\*\*



  
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