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NAME	**: Mrs. USHA GARG**		
AGE/ GENDER	: 74 YRS/FEMALE	**PATIENT ID**	: 1667348
COLLECTED BY	: SURJESH	**REG. NO./LAB NO.**	**: 012411100024**
REFERRED BY	:	**REGISTRATION DATE**	: 10/Nov/2024 09:44 AM
BARCODE NO.	: 01520474	**COLLECTION DATE**	: 10/Nov/2024 10:39AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 10/Nov/2024 10:57AM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

HAEMATOLOGY

COMPLETE BLOOD COUNT (CBC)

Test Name	Value	Unit	Biological Reference interval
RED BLOOD CELLS (RBCS) COUNT AND INDICES			
HAEMOGLOBIN (HB) *by CALORIMETRIC*	**11.4**^{L}	gm/dL	12.0 - 16.0
RED BLOOD CELL (RBC) COUNT *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	4.69	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	37.2	%	37.0 - 50.0
MEAN CORPUSCULAR VOLUME (MCV) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	**79.4**^{L}	fL	80.0 - 100.0
MEAN CORPUSCULAR HAEMOGLOBIN (MCH) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	**24.4**^{L}	pg	27.0 - 34.0
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	**30.7**^{L}	g/dL	32.0 - 36.0
RED CELL DISTRIBUTION WIDTH (RDW-CV) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	15.1	%	11.00 - 16.00
RED CELL DISTRIBUTION WIDTH (RDW-SD) *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	44.8	fL	35.0 - 56.0
MENTZERS INDEX *by CALCULATED*	16.93	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
GREEN & KING INDEX *by CALCULATED*	25.66	RATIO	BETA THALASSEMIA TRAIT:<= 65.0 IRON DEFICIENCY ANEMIA: > 65.0
WHITE BLOOD CELLS (WBCS)			
TOTAL LEUCOCYTE COUNT (TLC) *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	5370	/cmm	4000 - 11000
NUCLEATED RED BLOOD CELLS (nRBCS) *by AUTOMATED 6 PART HEMATOLOGY ANALYZER*	NIL		0.00 - 20.00
NUCLEATED RED BLOOD CELLS (nRBCS) % *by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER*	NIL	%	< 10 %

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Test Name	Value	Unit	Biological Reference interval
DIFFERENTIAL LEUCOCYTE COUNT (DLC)			
NEUTROPHILS *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	57	%	50 - 70
LYMPHOCYTES *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	31	%	20 - 40
EOSINOPHILS *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	5	%	1 - 6
MONOCYTES *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	7	%	2 - 12
BASOPHILS *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	0	%	0 - 1
ABSOLUTE LEUKOCYTES (WBC) COUNT			
ABSOLUTE NEUTROPHIL COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	3061	/cmm	2000 - 7500
ABSOLUTE LYMPHOCYTE COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	1665	/cmm	800 - 4900
ABSOLUTE EOSINOPHIL COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	268	/cmm	40 - 440
ABSOLUTE MONOCYTE COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	376	/cmm	80 - 880
ABSOLUTE BASOPHIL COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	0	/cmm	0 - 110
ABSOLUTE IMMATURE GRANULOCYTE COUNT *by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY*	0	/cmm	0.0 - 999.0
PLATELETS AND OTHER PLATELET PREDICTIVE MARKERS.			
PLATELET COUNT (PLT) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	287000	/cmm	150000 - 450000
PLATELETCRIT (PCT) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	**0.37^{H}**	%	0.10 - 0.36
MEAN PLATELET VOLUME (MPV) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	**13^{H}**	fL	6.50 - 12.0
PLATELET LARGE CELL COUNT (P-LCC) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	**127000^{H}**	/cmm	30000 - 90000
PLATELET LARGE CELL RATIO (P-LCR) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	44.3	%	11.0 - 45.0
PLATELET DISTRIBUTION WIDTH (PDW) *by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE*	15.9	%	15.0 - 17.0

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Test Name	Value	Unit	Biological Reference interval

NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD

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Test Name	Value	Unit	Biological Reference interval

CLINICAL CHEMISTRY/BIOCHEMISTRY

CREATININE

CREATININE: SERUM *by ENZYMATIC, SPECTROPHOTOMETRY*	0.87	mg/dL	0.40 - 1.20

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Test Name	Value	Unit	Biological Reference interval

FERRITIN

FERRITIN: SERUM	117.23	ng/mL	13.0 - 147.0

by CLIA (CHEMILUMINESCENCE IMMUNOASSAY)

INTERPRETATION:

Serum ferritin appears to be in equilibrium with tissue ferritin and is a good indicator of storage iron in normal subjects and in most disorders. In patients with some hepatocellular diseases, malignancies and inflammatory diseases, serum ferritin is a disproportionately high estimate of storage iron because serum ferritin is an acute phase reactant. In such disorders iron deficiency anemia may exist with a normal serum ferritin concentration. In the presence of inflammation, persons with low serum ferritin are likely to respond to iron therapy.

DECREASED:

1. Iron depletion appears to be the only condition associated with reduced serum ferritin concentrations.
2. Hypothyroidism.
3. Vitamin-C deficiency.

INCREASED FERRITIN DUE TO IRON OVERLOAD (PRIMARY):

1. Hemochromatosis or hemosiderosis.
2. Wilson Disease.

INCREASED FERRITIN DUE TO IRON OVERLOAD (SECONDARY):

1. Transfusion overload
2. Excess dietary Iron
3. Porphyria Cutanea tada
4. Ineffective erythropoiesis.

INCREASED FERRITIN WITHOUT IRON OVERLOAD:

1. Liver disorders (NASH) or viral hepatitis (B/C).
2. Inflammatory conditions (Ferritin is a acute phase reactant) both acute and chronic.
3. Leukaemia, hodgkin's disease.
4. Alcohol excess.
5. Other malignancies in which increases probably reflect the escape of ferritin from damaged liver cells, impaired clearance from the plasma, synthesis of ferritin by tumour cells.
6. Ferritin levels below 10 ng/ml have been reported as indicative of iron deficiency anemia.

NOTE:

1. As Ferritin is an acute phase reactant, it is often raised in both acute and chronic inflammatory condition of the body such as infections leading to false positive results. It can thererfore mask a diagnostically low result. In such Cases serum ferritin levels should always be correlated with C-Reactive proteins to rule out any inflammatory conditions.

2. Patients with iron deficiency anaemia may occasionally have elevated or normal ferritin levels. This is usually seen in patients already receiving iron therapy or in patients with concomitant hepatocellular injury.

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Test Name	Value	Unit	Biological Reference interval

LACTATE DEHYDROGENASE (LDH): SERUM

LACTATE DEHYDROGENASE (LDH): SERUM	442.1	U/L	225.0 - 450.0

by BASED ON SCE, SPECTROPHOTOMETRY

INTERPRETATION:-

1.Lactate dehydrogenase (LDH) activity is present in all cells of the body with highest concentrations in heart, liver, muscle, kidney, lung, and erythrocytes.
2.The test can be used for monitoring changes in tumor burden after chemotherapy, although, lactate dehydrogenase elevations in patients with cancer are too erratic to be of use in the diagnosis of cancer

INCREASED (MARKED) :-

1.Megaloblastic anemia.
2.Untreated pernicious anemia.
3.Hodgkins disease.
4.Abdominal and lung cancers.
5.Severe shock.
6.Hypoxia.

INCREASED (MODERATE):-

1.Myocardial infarction (MI).
2.Pulmonary infarction and pulmonary embolism.
3.Leukemia.
4.Hemolytic anemia.
5.Infectious mononucleosis.
6.Progressive muscular dystrophy (especially in the early and middle stages of the disease)
7.Liver disease and renal disease.

NOTE:-

1.In liver disease, elevations of LDH are not as great as the increases in aspartate amino transferase (AST) and alanine aminotransferase (ALT).
2.Serum LDH may be falsely elevated in otherwise healthy individuals which can be due to mechanical destrunction of RBCs. Therefore, Possiblity of mechanical errors (Transportation or vigorous shaking) should always be ruled out.

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BARCODE NO.	: 01520474	**COLLECTION DATE**	: 10/Nov/2024 02:37PM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 13/Nov/2024 06:32PM
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Test Name	Value	Unit	Biological Reference interval

IMMUNOPATHOLOGY/SEROLOGY

BRUCELLA ANTIBODY AGGLUTINATION TEST

BRUCELLA ABORTUS ANTIBODY *by TUBE AGGLUTINATION*	No Agglutination
BRUCELLA MELITENSIS ANTIBODY *by TUBE AGGLUTINATION*	No Agglutination
REMARKS	Negative

INTERPRETATION:

RESULT	REMARK
REACTIVE	Indicates presence of antibodies against Brucella abortus/melitensis.
NON-REACTIVE	Indicates absence of antibodies against Brucella abortus/melitensis.

NOTE:
1. Positive results are seen in brucellosis caused by Brucella abortus/melitensis leading to conditions like undulant fever, chills, sweats and anorexia.
2. Negative results are seen in absence of Brucella abortus/melitensis infection. However, it does not rule out the disease.
3. False positive results may be due to cross reactivity with other Brucella spp and infection with Yersinia enterocolitica, Pasteurella tularensis, Francisella tularensis and in patients vaccinated for Vibrio cholerae.
4. False negative reaction may be due to processing of sample collected early in the course of disease or low threshold of antibody and due to prozone effect.
5. Test conducted in serum.

USES:
To diagnose infection due to Brucella abortus/melitensis (Brucellosis)

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Test Name	Value	Unit	Biological Reference interval

BRUCELLA ANTIBODY PROFILE: IgG & IgM

BRUCELLA ANTIBODY IgG: SERUM *by EIA (ENZYME IMMUNOASSAY)*	3.89	U/mL	NEGATIVE: < 8.0 EQUIVOCAL: 8.0 - 12.0 POSITIVE: > 12.0
BRUCELLA ANTIBODY IgG RESULT: SERUM *by EIA (ENZYME IMMUNOASSAY)*	NEGATIVE (-ve)		NEGATIVE (-ve)
BRUCELLA ANTIBODY IgM: SERUM *by EIA (ENZYME IMMUNOASSAY)*	1.36	U/mL	NEGATIVE: < 8.0 EQUIVOCAL: 8.0 - 12.0 POSITIVE: > 12.0
BRUCELLA ANTIBODY IgM RESULT: SERUM *by EIA (ENZYME IMMUNOASSAY)*	NEGATIVE (-ve)		NEGATIVE (-ve)

INTERPRETATION:

RESULT IN U/mL	REMARKS
< 8.0	Negative
8.0 – 12.0	Equivocal
>12.0	Positive

NOTE:
1. Rising levels of specific antibodies in paired sera can be regarded as serological evidence of recent infection.
2. Negative results with clinical suspicion of recent infection should be retested after 7-14 days
3. Results should be used in conjunction with symptoms, patient history and clinical findings

COMMENTS:
Worldwide Brucellosis is a major disease in humans and domesticated animals with a limited geographic distribution. Three species of Brucella commonly infect humans namely B.mellitensis, B.abortus and B.suis. Acute disease presents with fever , chills and malaise. The chronic form of the disease causes abscesses in bone, brain, spleen, liver and kidney. In the acute stage of the disease, there is an initial production of IgM antibodies followed by IgG antibodies. IgG levels decline after treatment. However high levels of circulating IgG may be found without any active disease. Chronic Brucellosis shows a predominance of IgG antibodies with little or no detectable IgM.

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Test Name	Value	Unit	Biological Reference interval

VITAMINS

VITAMIN B12/COBALAMIN

VITAMIN B12/COBALAMIN: SERUM	497	pg/mL	190.0 - 890.0

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

INTERPRETATION:-

INCREASED VITAMIN B12	DECREASED VITAMIN B12
1.Ingestion of Vitamin C	1.Pregnancy
2.Ingestion of Estrogen	2.DRUGS:Aspirin, Anti-convulsants, Colchicine
3.Ingestion of Vitamin A	3.Ethanol Igestion
4.Hepatocellular injury	4. Contraceptive Harmones
5.Myeloproliferative disorder	5.Haemodialysis
6.Uremia	6. Multiple Myeloma

1.Vitamin B12 (cobalamin) is necessary for hematopoiesis and normal neuronal function.
2.In humans, it is obtained only from animal proteins and requires intrinsic factor (IF) for absorption.
3.The body uses its vitamin B12 stores very economically, reabsorbing vitamin B12 from the ileum and returning it to the liver; very little is excreted.
4.Vitamin B12 deficiency may be due to lack of IF secretion by gastric mucosa (eg, gastrectomy, gastric atrophy) or intestinal malabsorption (eg, ileal resection, small intestinal diseases).
5.Vitamin B12 deficiency frequently causes macrocytic anemia, glossitis, peripheral neuropathy, weakness, hyperreflexia, ataxia, loss of proprioception, poor coordination, and affective behavioral changes. These manifestations may occur in any combination; many patients have the neurologic defects without macrocytic anemia.
6.Serum methylmalonic acid and homocysteine levels are also elevated in vitamin B12 deficiency states.
7.Follow-up testing for antibodies to intrinsic factor (IF) is recommended to identify this potential cause of vitamin B12 malabsorption.
NOTE:A normal serum concentration of vitamin B12 does not rule out tissue deficiency of vitamin B12. The most sensitive test for vitamin B12 deficiency at the cellular level is the assay for MMA. If clinical symptoms suggest deficiency, measurement of MMA and homocysteine should be considered, even if serum vitamin B12 concentrations are normal.

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CLINICAL PATHOLOGY

URINE ROUTINE & MICROSCOPIC EXAMINATION

Test Name	Value	Unit	Biological Reference interval
PHYSICAL EXAMINATION			
QUANTITY RECIEVED *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	10	ml	
COLOUR *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	AMBER YELLOW		PALE YELLOW
TRANSPARANCY *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	HAZY		CLEAR
SPECIFIC GRAVITY *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	1.02		1.002 - 1.030
CHEMICAL EXAMINATION			
REACTION *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	ACIDIC		
PROTEIN *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	Negative		NEGATIVE (-ve)
SUGAR *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	Negative		NEGATIVE (-ve)
pH *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	5.5		5.0 - 7.5
BILIRUBIN *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	Negative		NEGATIVE (-ve)
NITRITE *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY.*	Negative		NEGATIVE (-ve)
UROBILINOGEN *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	Normal	EU/dL	0.2 - 1.0
KETONE BODIES *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	Negative		NEGATIVE (-ve)
BLOOD ***by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY***	**1+**		**NEGATIVE (-ve)**
ASCORBIC ACID *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	NEGATIVE (-ve)		NEGATIVE (-ve)
MICROSCOPIC EXAMINATION			
RED BLOOD CELLS (RBCs) *by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT*	5-7	/HPF	0 - 3

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

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NAME	**: Mrs. USHA GARG**		
AGE/ GENDER	: 74 YRS/FEMALE	**PATIENT ID**	: 1667348
COLLECTED BY	: SURJESH	**REG. NO./LAB NO.**	**: 012411100024**
REFERRED BY	:	**REGISTRATION DATE**	: 10/Nov/2024 09:44 AM
BARCODE NO.	: 01520474	**COLLECTION DATE**	: 10/Nov/2024 10:39AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 11/Nov/2024 12:28PM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

SPECIAL INVESTIGATIONS

PROTEIN ELECTROPHORESIS: SERUM

Test Name	Value	Unit	Biological Reference interval
TOTAL PROTEINS: SERUM *by MIGRATION GEL ELECTROPHORESIS*	7.18	gm/dL	6.20 - 8.00
ALBUMIN: SERUM *by MIGRATION GEL ELECTROPHORESIS*	3.77	gm/dL	3.50 - 5.50
A : G RATIO: SERUM *by MIGRATION GEL ELECTROPHORESIS*	1.11	RATIO	1.00 - 2.00
ALPHA 1 GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	0.2	gm/dL	0.11 - 0.40
ALPHA 2 GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	0.89	gm/dL	0.43 - 1.03
BETA GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	0.88	mg/dL	0.53 - 1.40
GAMMA GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	1.43	gm/dL	0.75 - 1.80
MYELOMA (M) BAND/SPIKE *by MIGRATION GEL ELECTROPHORESIS*	NOT SEEN	gm/dL	
INTERPRETATION	Protein electrophoresis shows normal pattern. No M band seen.		
ADVICE	**KINDLY CORRELATE CLINICALLY**		

INTERPRETATION:

1.Serum protein electrophoresis is commonly used to identify patients with multiple myeloma and disorders of serum proteins.
2.Electrophoresis is a method of separating proteins based on their physical properties. the pattern of serum protein electrophoresis results depends on the frations of 2 types of protein : albumin and globulin (alpha 1 alpha2, beta and gamma.)
3.A homogeneous spike-like peak in a focal region of the gamma-globulin zone indicates a monoclonal gammopathy.
4.Monoclonal gammopathies are associated with a clonal process that is malignant or potentially malignant, including multiple myeloma, Waldenstrom macroglobulinemia, solitary plasmacytoma, smoldering multiple myeloma, monoclonal gammopathy of undetermined significance, plasma cell leukemia, heavy chain disease, and amyloidosis.
5.M-protein (in the gamma region) level greater than 3 g/dL should be interpreted along with other radiologic and haematological findings to arrive at a diagnosis of Multiple myeloma and must not be considered in isolation.
6.Occasionally M protein may appear as a narrow spike in the beta or alpha2 regions also.
7.Up to one fifth of patients with Myeloma may have an M-protein spike of less than 1 g /dL.
8.Hypogammaglobulinemia on serum protein electrophoresis occurs in about 10% of patients with multiple myeloma who do not have a serum M-protein spike.
9.Most of these patients have a large amount of Bence Jones protein (monoclonal free kappa or lambda chain) in their urine, wherein urine protein electrophoresis should be performed. Monoclonal gammopathy is present in up to 8 percent of healthy geriatric patients.

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Test Name	Value	Unit	Biological Reference interval

NOTE:
The following conditions require serum immunofixation to confirm monoclonality or to differentiate monoclonal and polyclonal disoders.
1.A well defined "M" band.
2.Faint band .
3.Chronic inflammatory pattern (decreased albumin, increased alpha, increased gamma fractions)
4.Isolated increase in any region with an otherwise normal pattern.
5.Shouldering of albumin peak along anodal or cathodal side may be seen with lipoproteins, drugs, bilirubin or radiological contrast.

*** End Of Report ***

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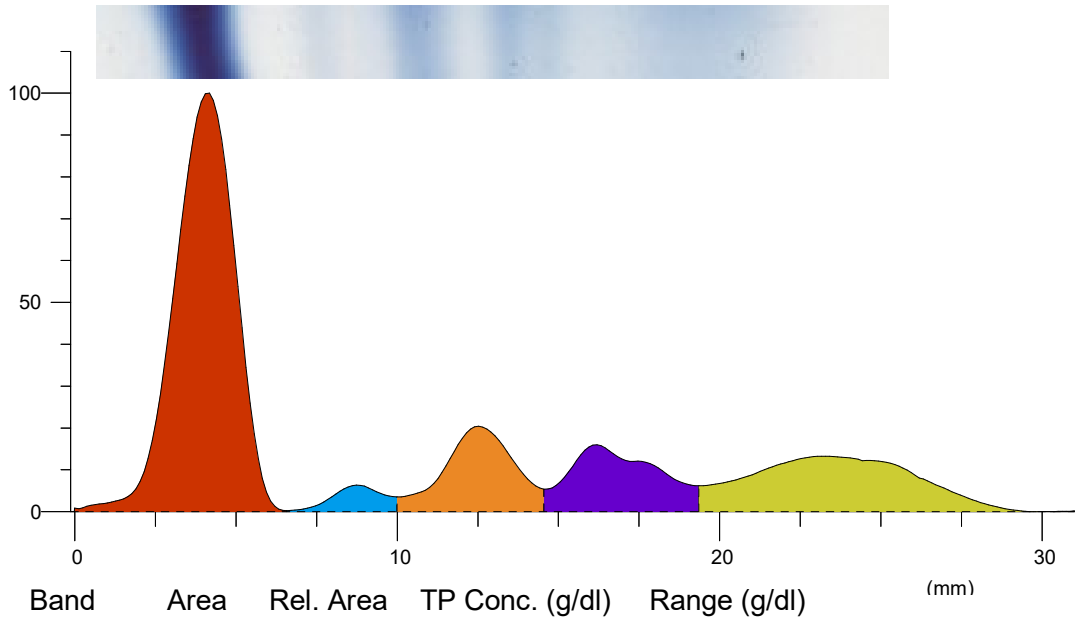
KOS Diagnostic Lab

(A Unit of KOS Healthcare)

PROTEIN ELECTROPHORESIS

NAME	**USHA GARG**	**BARCODE ID**	**01520474**
AGE/SEX	**74/f**	**DATE**	**11/11/2024**

Chemistry Results **TP 7.18(g/dl)**



Index	Band	Area	Rel. Area	TP Conc. (g/dl)	Range (g/dl)
1	Albumin	1.204	52.54%	3.77	3.50 ... 5.00
2	Alpha 1	0.065	2.85%	0.20	0.11 ... 0.40
3	Alpha 2	0.284	12.37%	0.89	0.43 ... 1.03
4	Beta	0.281	12.26%	0.88	0.53 ... 1.40
5	Gamma	0.458	19.98%	1.43	0.75 ... 1.80
Total		2.293		7.18	

Ratio A/G 1.11

Comment:-

Protein electrophoresis shows normal pattern. No M band seen. Kindly correlate clinically.

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