NAME	**: Mr. SATISH KUMAR**		
AGE/ GENDER	: 80 YRS/MALE	**PATIENT ID**	: 1626025
COLLECTED BY	: SURJESH	**REG. NO./LAB NO.**	**: 012409260043**
REFERRED BY	:	**REGISTRATION DATE**	: 26/Sep/2024 01:39 PM
BARCODE NO.	: 01517763	**COLLECTION DATE**	: 27/Sep/2024 10:31AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 28/Sep/2024 04:27PM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval

CLINICAL CHEMISTRY/BIOCHEMISTRY

CYSTATIN C

CYSTATIN C: SERUM	**1.66^{H}**	**mg/L**	**0.50 - 1.50**

INTERPRETATION:

NOTE:

1. Glucocorticoids reduce production of Cystatin C which may result in overestimation of renal function in renal transplant patients who are regularly given glucocorticoids.
2. Thyroid dysfunction may affect Cystatin C concentration

COMMENTS

Cystatin C, an amino acid protein is an inhibitor of cysteine proteinase. It is produced by all nucleated cells and the production is relatively constant from the age of 4 months to 70 years and is proportionate to glomerular filtration rate (GFR). The rate of production is not affected by muscle mass, sex, race & diet. It is freely filtered by the glomerulus at the same concentration as plasma and is reabsorbed by the proximal tubules. Hence appearance of Cystatin C signifies proximal tubular damage. Serum Cystatin C is a better indicator of renal function than creatinine in the early stages of GFR impairment.

CLINICAL USE

1. To diagnose renal impairment in early stages

Note - Kindly correlate with clinical conditions.

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Test Name	Value	Unit	Biological Reference interval

VITAMINS

VITAMIN D/25 HYDROXY VITAMIN D3

VITAMIN D (25-HYDROXY VITAMIN D3): SERUM *by CLIA (CHEMILUMINESCENCE IMMUNOASSAY)*	50.1	ng/mL	DEFICIENCY: < 20.0 INSUFFICIENCY: 20.0 - 30.0 SUFFICIENCY: 30.0 - 100.0 TOXICITY: > 100.0

INTERPRETATION:

DEFICIENT:	< 20	ng/mL
INSUFFICIENT:	21 - 29	ng/mL
PREFFERED RANGE:	30 - 100	ng/mL
INTOXICATION:	> 100	ng/mL

1.Vitamin D compounds are derived from dietary ergocalciferol (from plants, Vitamin D2), or cholecalciferol (from animals, Vitamin D3), or by conversion of 7- dihydrocholecalciferol to Vitamin D3 in the skin upon Ultraviolet exposure.
2.25-OH--Vitamin D represents the main body resevoir and transport form of Vitamin D and transport form of Vitamin D, being stored in adipose tissue and tightly bound by a transport protein while in circulation.
3.Vitamin D plays a primary role in the maintenance of calcium homeostatis. It promotes calcium absorption, renal calcium absorption and phosphate reabsorption, skeletal calcium deposition, calcium mobilization, mainly regulated by parathyroid harmone (PTH).
4.Severe deficiency may lead to failure to mineralize newly formed osteoid in bone, resulting in rickets in children and osteomalacia in adults.

DECREASED:
1.Lack of sunshine exposure.
2.Inadequate intake, malabsorption (celiac disease)
3.Depressed Hepatic Vitamin D 25- hydroxylase activity
4.Secondary to advanced Liver disease
5.Osteoporosis and Secondary Hyperparathroidism (Mild to Moderate deficiency)
6.Enzyme Inducing drugs: anti-epileptic drugs like phenytoin, phenobarbital and carbamazepine, that increases Vitamin D metabolism.

INCREASED:
1. Hypervitaminosis D is Rare, and is seen only after prolonged exposure to extremely high doses of Vitamin D. When it occurs, it can result in severe hypercalcemia and hyperphophatemia.

CAUTION: Replacement therapy in deficient individuals must be monitored by periodic assessment of Vitamin D levels in order to prevent hypervitaminosis D

NOTE:-*Dark coloured individuals as compare to whites, is at higher risk of developing Vitamin D deficiency due to excess of melanin pigment which interefere with Vitamin D absorption.*

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Test Name	Value	Unit	Biological Reference interval

TUMOUR MARKER

PROSTATE SPECIFIC ANTIGEN (PSA) - TOTAL

PROSTATE SPECIFIC ANTIGEN (PSA) - TOTAL: SERUM	**8.33^{H}**	**ng/mL**	**0.0 - 4.0**

by CLIA (CHEMILUMINESCENCE IMMUNOASSAY)

INTERPRETATION:

NOTE:

1. This is a recommended test for detection of prostate cancer along with Digital Rectal Examination (DRE) in males above 50 years of age.
2. False negative / positive results are observed in patients receiving mouse monoclonal antibodies for diagnosis or therapy
3. PSA levels may appear consistently elevated / depressed due to the interference by heterophilic antibodies & nonspecific protein binding
4. Immediate PSA testing following digital rectal examination, ejaculation, prostatic massage, indwelling catheterization, ultrasonography and needle biopsy of prostate is not recommended as they falsely elevate levels
5. PSA values regardless of levels should not be interpreted as absolute evidence of the presence or absence of disease. All values should be correlated with clinical findings and results of other investigations
6. Sites of Non-prostatic PSA production are breast epithelium, salivary glands, peri-urethral & anal glands, cells of male urethra & breast milk
7. Physiological decrease in PSA level by 18% has been observed in hospitalized / sedentary patients either due to supine position or suspended sexual activity
8. The concentration of PSA in a given specimen, determined with assays from different manufacturers, may not be comparable due to differences in assay methods, calibration, and reagent specificity.

RECOMMENDED TESTING INTERVALS

1. Preoperatively (Baseline)
2. 2-4 Days Post operatively
3. Prior to discharge from hospital
4. Monthly Follow Up if levels are high and showing a rising trend

POST SURGERY	FREQUENCY OF TESTING
1st Year	Every 3 Months
2nd Year	Every 4 Months
3rd Year Onwards	Every 6 Months

CLINICAL USE:

1. An aid in the early detection of Prostate cancer when used in conjunction with Digital rectal examination in males more than 50 years of age and in those with two or more affected first degree relatives.
2. Followup and management of Prostate cancer patients.
3. Detect metastatic or persistent disease in patients following surgical or medical treatment of Prostate cancer

INCREASED LEVEL:

1. Prostate cancer
2. Benign Prostatic Hyperplasia
3. Prostatitis
4. Genitourinary infections

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Test Name	Value	Unit	Biological Reference interval

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BARCODE NO.	: 01517763	**COLLECTION DATE**	: 27/Sep/2024 10:31AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 27/Sep/2024 11:59AM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval

CLINICAL PATHOLOGY

URINE ROUTINE & MICROSCOPIC EXAMINATION

PHYSICAL EXAMINATION

QUANTITY RECIEVED *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	10	ml	
COLOUR *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	PALE YELLOW		PALE YELLOW
TRANSPARANCY *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	CLEAR		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*	6		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*	Negative		NEGATIVE (-ve)
ASCORBIC ACID *by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY*	NEGATIVE (-ve)		NEGATIVE (-ve)

MICROSCOPIC EXAMINATION

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Test Name	Value	Unit	Biological Reference interval
RED BLOOD CELLS (RBCs) *by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT*	NEGATIVE (-ve)	/HPF	0 - 3
PUS CELLS *by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT*	3-4	/HPF	0 - 5
EPITHELIAL CELLS *by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT*	0-2	/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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BARCODE NO.	: 01517763	**COLLECTION DATE**	: 27/Sep/2024 10:31AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 28/Sep/2024 05:03PM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
SPECIAL INVESTIGATIONS			
PROTEIN ELECTROPHORESIS: SERUM			
TOTAL PROTEINS: SERUM *by MIGRATION GEL ELECTROPHORESIS*	**8.72^{H}**	**gm/dL**	**6.20 - 8.00**
ALBUMIN: SERUM *by MIGRATION GEL ELECTROPHORESIS*	3.87	gm/dL	3.50 - 5.50
A : G RATIO: SERUM *by MIGRATION GEL ELECTROPHORESIS*	**0.8^{L}**	**RATIO**	**1.00 - 2.00**
ALPHA 1 GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	0.37	gm/dL	0.11 - 0.40
ALPHA 2 GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	**1.27^{H}**	**gm/dL**	**0.43 - 1.03**
BETA GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	1.17	mg/dL	0.53 - 1.40
GAMMA GLOBULIN *by MIGRATION GEL ELECTROPHORESIS*	**2.04^{H}**	**gm/dL**	**0.75 - 1.80**
INTERPRETATION	Serum protein electrophoresis shows increased Alpha 2 and hyper gamma globulin region.		
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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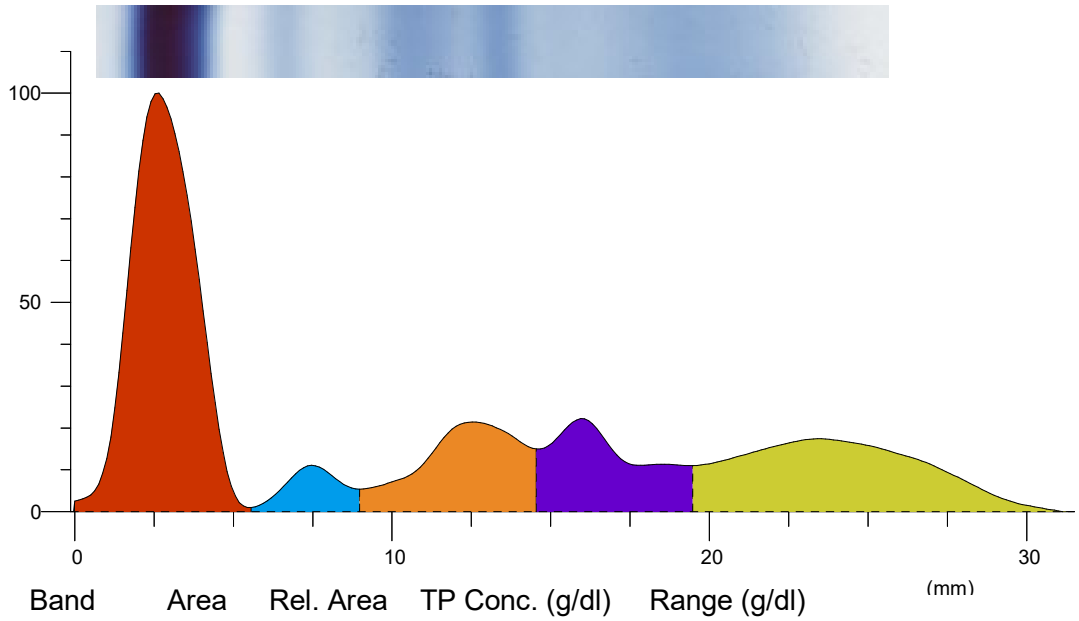
KOS Diagnostic Lab

(A Unit of KOS Healthcare)

PROTEIN ELECTROPHORESIS

NAME	**SATISH KUMAR**	**BARCODE ID**	**01517763**
AGE/SEX	**80 YRS/M**	**DATE**	**28-09-2024**

Chemistry Results **TP 8.72(g/dl)**



Index	Band	Area	Rel. Area	TP Conc. (g/dl)	Range (g/dl)
1	Albumin	1.801	44.41%	3.87	3.50 ... 5.00
2	Alpha 1	0.171	4.23%	0.37	0.11 ... 0.40
3	Alpha 2	0.590	14.55%	1.27 H	0.43 ... 1.03
4	Beta	0.546	13.45%	1.17	0.53 ... 1.40
5	Gamma	0.947	23.36%	2.04 H	0.75 ... 1.80
Total		4.055		8.72	

Ratio A/G 0.80

Comment:-

Serum protein electrophoresis shows increased Alpha 2 and hyper gamma globulin region. Kindly correlate clinically

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