Apollo Medical Centre

(Promoters : Kurnool Hospital Enterprises Ltd.)

43-67/A,N.R. Peta, Kurnool - 518 004, Phone : (08518) 225888, 225889

Name	: DUKO SARAN KUMAR K.	**Bill Date** :	15-Jan-2026 6:47 am
Age	: 42 Years	**Sample No** :	3
Gender	: Male	**Smpl.Time** :	15-Jan-2026 07:07 AM
Bill No	: CR2190	**Report Date** :	15-Jan-2026 10:02 am
Ref.Dr.	: Dr.BHASKAR REDDY K	CR2190	

DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
UREA				
UREA (BLOOD)	14	mg/dL	14 - 45	UV-GLDH

Urea is the major nitrogen containing metabolic product of protein catabolism. Increased in dehydration, severe vomiting, fever, severe infections, burns, high protein diet, acute GN etc
Decreased in low protein intake, starvation, anorexia nervosa, late pregnancy etc.

CREATININE				
CREATININE (SERUM)	0.6	mg/dL	0.6 - 1.3 Adult	Enzymatic
		mg/dL	0.3 - 1.0 Children	

Creatinine is produced at a fairly constant rate within an individual as a result of breakdown of Creatine within muscle tissue.
Creatinine is freely filtered at the glomerulus and predominantly excreted by the kidneys.
Increased - Old age, glomerulonephritis , pyelonephritis , renal failure , urinary obstruction, CCF , Dehydration , Shock, medicines
like amphotericin B, captopril , cephalosporins etc
Decreased - low muscle mass, females , Malnutrition , Drugs like - Tlianoide , Vancomycin etc.,

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DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
HBA1C				
HBA1C , GLYCATED HEMOGLOBIN	4.7 %	%	-	Turbilatex

Note: Dietary preparation or fasting is not required.

1. A1C test should be performed at least two times a year in patients who are meeting treatment goals (and who have stable glycemic control).
2. Lowering A1C to below or around 7% has been shown to reduce microvascular and neuropathic complications of type 1 and type 2 diabetes. When mean annual HbA1c is <1.1 times ULN (upper limit of normal), renal and retinal complications are rare, but complications occur in >70% of cases when HbA1c is >1.7 times ULN.
3. Falsely low HbA1c (below 4%) may be observed in patients with clinical conditions that shorten erythrocyte life span or decrease mean erythrocyte age. HbA1c may not accurately reflect glycemic control when clinical conditions that affect erythrocyte survival are present. Fructosamine may be used as an alternate measurement of glycemic control.

Reference:	
Non Diabetic Level	< 5.7 %
Pre diabetic range	5.7 % to 6.4 %
Diabetic Range	> 6.5 %
Diabetic Level	
Excellent control	6 %- 7 %
Fair to good control	7 % -8 %
Poor control	8 % -10 %
Unsatisfactory control	> 10 %

LIVER FUNCTION TEST				
TOTAL BILIRUBIN	0.4	mg/dL	0 - 1.0	DCA
DIRECT BILIRUBIN	0.1	mg/dL	0 - 0.3	DCA
S G P T (ALT)	20	U/L	0 - 42	Modified IFCC
S G O T (AST)	18	U/L	0 - 37	Modified IFCC
ALKALINE PHOSPHATASE	58	U/L	53 - 128	PNPP-AMP Buffer
TOTAL PROTIEN	6.9	gm/dL	6.6 - 8.8	Biuret
SERUM ALBUMIN	4.0	gm/dL	3.5 - 5.2	BCG
SERUM GLOBULIN	2.9	gm/dL	2.0 - 3.5	Calculated
A : G RATIO	1.3:1		-	

LFT are useful in detecting & diagnosing liver disease & dysfunction , as well as in evaluating severity , monitoring therapy & assessing prognosis. Predominantly elevation of AST and ALT suggests parenchymal liver or hepatitis. Predominant elevation of ALP and GGT suggests bile duct injury , cholestasis or cholangitis.

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DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
LIPID PROFILE				
SERUM CHOLESTEROL	182	mg/dL	< - 200	CHOD-PAP
SERUM TRIGLYCERIDES	166	mg/dL	< - 150	GPO-PAP
DIRECT HDL	39	mg/dL	> - 40	Direct
LDL	109.8	mg/dL	Upto - 100	Calculated
VLDL	33.2	mg/dL	Upto - 30	Calculated

.

Comment:

Reference Interval as per National Cholesterol Education Program (NCEP)
Adult Treatment Panal III Report.

	Desirable	Borderline High	High	Very High
TOTAL CHOLESTEROL	< 200	200 - 239	≥ 240	
TRIGLYCERIDES	< 150	150 - 199	200 - 499	≥ 500
LDL	Optimal < 100 Near Optimal 100-129	130 - 159	160 - 189	≥ 190
HDL	≥ 60			
NON-HDL CHOLESTEROL	Optimal < 130; Above Optimal 130-159	160 - 189	190 - 219	> 220

Measurements in the same patient can show physiological and analytical variations.
NCEP ATP III identifies non-HDL cholesterol as a secondary target of therapy in persons with high triglycerides.

*** END OF REPORT ***

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CR2190

Dr.SREELATHA. D
M.B.B.S, M.D
Consultant Biochemist

APOLLO MEDICAL CENTRE KURNOOL

KINDLY CORRELATE RESULTS WITH CLINICAL FINDINGS & DISCUSS IF NECESSARY.

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DEPARTMENT OF SEROLOGY

Test Name	Result	Unit	Bio. Ref. Range	Method
C-REACTIVE PROTEIN CRP (QUANTITATIVE) , SERUM	2.1	mg/L	upto - 6	Nephelometry
			-	

Comment:

C-reactive protein (CRP) is one of the most sensitive acute-phase reactants for inflammation. Measuring changes in the concentration of CRP provides useful diagnostic information about the level of acuity and severity of a disease. Unlike ESR, CRP
levels are not influenced by hematologic conditions such as anemia, polycythemia etc.
Increased levels are consistent with an acute inflammatory process. After onset of an acute phase response, the serum CRP
concentration rises rapidly (within 6-12 hours and peaks at 24-48 hours) and extensively.Concentrations above 100 mg/L are
associated with severe stimuli such as major trauma and severe infection (sepsis).

*** END OF REPORT ***

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PATHOLOGIST

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DEPARTMENT OF HYDERABAD

Test Name	Result	Unit	Bio. Ref. Range	Method
VITAMIN B12				
VITAMIN B12, SERUM	**150**	pg/mL	183 - 822	CLIA

Comment:

Population based data reflecting exact scenario of vitamin B12 levels in Indian population is still evolving, however, different studies reporting a deficiency in adults, pregnant women and children ranging from 16% to 77% with average of about 47%. This high incidence is attributed to vegetarian food habits of large majority of Indian population. Vitamin B12 deficiency frequently causes macrocytic anemia, glossitis, peripheral neuropathy, weakness, hyperreflexia, ataxia, loss of proprioception, poor coordination, and affective behavioral changes. A significant increase in RBC MCV may be an important indicator of vitamin B12 deficiency. B12 levels in the range of 150 to 190 pg/ml may not be associated with any clinical manifestations, while B12 levels below 100 pg/ml are often associated with clinical symptoms. However, for an individual based on other co-morbid conditions or other nutritional deficiency (especially folate) the manifestations can vary accordingly. If clinical symptoms suggest deficiency, measurement of active vitamin B12, MMA and homocysteine
should be considered as further workup.

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DEPARTMENT OF BIOCHEMISTRY.

Test Name	Result	Unit	Bio. Ref. Range	Method
TSH (Thyroid stimulating hormone)	2.84	uIU/ml	0.3 - 4.5	ELFA

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Comment:

TSH is a glycoprotein hormone secreted by the anterior pituitary. TSH is a labile hormone & is secrete throughout the day and is subject to several non-thyroidal pituitary influences.Significant variations i circadian rhythm, hormonal status, stress, sleep deprivation, caloric intake, medication & circulating antibodi It is important to confirm any TSH abnormality in a fresh specimen drawn after ~ 3 weeks before assigning a the cause of an isolated TSH abnormality.

For pregnant females	Bio Ref Range for TSH in uIU/ml (As per America Association)
First trimester	0.1 - 2.5
Second trimester	0.2 – 3.0
Third trimester	0.3 – 3.0

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DEPARTMENT OF BIOCHEMISTRY.

Test Name	Result	Unit	Bio. Ref. Range	Method
VITAMIN D (SERUM)				
VITAMIN D (25-OH VITAMIN D)	**11.2**	ng/mL	30 - 100	CLIA

The biological function of Vitamin D is to maintain normal levels of calcium and phosphorus absorption. 25-Hydroxy vitamin D is the storage form of vitamin D. Vitamin D assists in maintaining bone health by facilitating calcium absorption. Vitamin D deficiency can also cause osteomalacia, which frequently affects elderly patients.

Vitamin D Total levels are composed of two components namely 25-Hydroxy Vitamin D2 and 25-Hydroxy Vitamin D3 both of which are converted into active forms. Vitamin D2 level corresponds with the exogenous dietary intake of Vitamin D rich foods as well as supplements. Vitamin D3 level corresponds with endogenous production as well as exogenous diet and supplements.

Vitamin D from sunshine on the skin or from dietary intake is converted predominantly by the liver into 25-hydroxy vitamin D, which has a long half-life and is stored in the adipose tissue. The metabolically active form of vitamin D, 1,25-di-hydroxy vitamin D, which has a short life, is then synthesized in the kidney as needed from circulating 25-hydroxy vitamin D. The reference interval of greater than 30 ng/mL is a target value established by the Endocrine Society.

Decreased Levels:- Inadequate exposure to sunlight, Dietary deficiency, Vitamin D malabsorption, Severe Hepatocellular disease., Drugs like Anticonvulsants, Nephrotic syndrome.

Increased levels:- Vitamin D intoxication.

Comment:

BIOLOGICAL REFERENCE RANGES

VITAMIN D STATUS	VITAMIN D 25 HYDROXY (ng/mL)
DEFICIENCY	<10
INSUFFICIENCY	10 – 30
SUFFICIENCY	30 – 100
TOXICITY	>100

* * * **END OF REPORT** * * *

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