MC-6146

Patient Name	: Mr.ANNADANA GOUDA	Collected	: 27/Sep/2024 06:55PM
Age/Gender	: 57 Y 5 M 28 D /M	Received	: 28/Sep/2024 10:53AM
UHID/MR No	: DSDU.0000003507	Reported	: 28/Sep/2024 11:27AM
Visit ID	: DSDUOPV5574	Status	: Final Report
Ref Doctor	: ANJANADRI DIAGNOSTICS KARATAGI	Client Name	: PCC SINDHANUR
IP/OP NO	:	Center location	: Sindhanur,Sindhanur

DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Interval	Method
HBA1C (GLYCATED HEMOGLOBIN) , *WHOLE BLOOD EDTA*				
HBA1C, GLYCATED HEMOGLOBIN	5.7	%		HPLC
ESTIMATED AVERAGE GLUCOSE (eAG)	117	mg/dL		Calculated

Comment:

Reference Range as per American Diabetes Association (ADA) 2023 Guidelines:

REFERENCE GROUP	HBA1C %
NON DIABETIC	<5.7
PREDIABETES	5.7 – 6.4
DIABETES	≥ 6.5
DIABETICS	
EXCELLENT CONTROL	6 – 7
FAIR TO GOOD CONTROL	7 – 8
UNSATISFACTORY CONTROL	8 – 10
POOR CONTROL	>10

Note: Dietary preparation or fasting is not required.

1. HbA1C is recommended by American Diabetes Association for Diagnosing Diabetes and monitoring Glycemic Control by American Diabetes Association guidelines 2023.
2. Trends in HbA1C values is a better indicator of Glycemic control than a single test.
3. Low HbA1C in Non-Diabetic patients are associated with Anemia (Iron Deficiency/Hemolytic), Liver Disorders, Chronic Kidney Disease. Clinical Correlation is advised in interpretation of low Values.
4. 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.
5. In cases of Interference of Hemoglobin variants in HbA1C, alternative methods (Fructosamine) estimation is recommended for Glycemic Control
   A: HbF >25%
   B: Homozygous Hemoglobinopathy.
   (Hb Electrophoresis is recommended method for detection of Hemoglobinopathy)

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SIN No:BI21964189

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DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Interval	Method
LIPID PROFILE , *SERUM*				
TOTAL CHOLESTEROL	**234**	mg/dL	<200	CHO-POD
TRIGLYCERIDES	**152**	mg/dL	<150	GPO-POD
HDL CHOLESTEROL	49	mg/dL	40-60	Enzymatic Immunoinhibition
NON-HDL CHOLESTEROL	**185**	mg/dL	<130	Calculated
LDL CHOLESTEROL	**154.7**	mg/dL	<100	Calculated
VLDL CHOLESTEROL	**30.4**	mg/dL	<30	Calculated
CHOL / HDL RATIO	4.78		0-4.97	Calculated
ATHEROGENIC INDEX (AIP)	**0.13**		<0.11	Calculated

Comment:

Reference Interval as per National Cholesterol Education Program (NCEP) Adult Treatment Panel 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.

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DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Interval	Method
LIVER FUNCTION TEST (LFT) , *SERUM*				
BILIRUBIN, TOTAL	0.86	mg/dL	0.3–1.2	DPD
BILIRUBIN CONJUGATED (DIRECT)	0.19	mg/dL	<0.2	DPD
BILIRUBIN (INDIRECT)	0.67	mg/dL	0.0-1.1	Dual Wavelength
ALANINE AMINOTRANSFERASE (ALT/SGPT)	16	U/L	<50	IFCC
ASPARTATE AMINOTRANSFERASE (AST/SGOT)	23.0	U/L	<50	IFCC
AST (SGOT) / ALT (SGPT) RATIO (DE RITIS)	**1.4**		<1.15	Calculated
ALKALINE PHOSPHATASE	63.00	U/L	30-120	IFCC
PROTEIN, TOTAL	**8.34**	g/dL	6.6-8.3	Biuret
ALBUMIN	5.00	g/dL	3.5-5.2	BROMO CRESOL GREEN
GLOBULIN	3.34	g/dL	2.0-3.5	Calculated
A/G RATIO	1.5		0.9-2.0	Calculated

Comment:

LFT results reflect different aspects of the health of the liver, i.e., hepatocyte integrity (AST & ALT), synthesis and secretion of bile (Bilirubin, ALP), cholestasis (ALP, GGT), protein synthesis (Albumin) Common patterns seen:

1. Hepatocellular Injury:

*AST – Elevated levels can be seen. However, it is not specific to liver and can be raised in cardiac and skeletal injuries. *ALT – Elevated levels indicate hepatocellular damage. It is considered to be most specific lab test for hepatocellular injury. Values also correlate well with increasing BMI. Disproportionate increase in AST, ALT compared with ALP. AST: ALT (ratio) – In case of hepatocellular injury AST: ALT > 1In Alcoholic Liver Disease AST: ALT usually >2. This ratio is also seen to be increased in NAFLD, Wilsons's diseases, Cirrhosis, but the increase is usually not >2.

2. Cholestatic Pattern:

*ALP – Disproportionate increase in ALP compared with AST, ALT. ALP elevation also seen in pregnancy, impacted by age and sex. *Bilirubin elevated- predominantly direct , To establish the hepatic origin correlation with elevated GGT helps.

3. Synthetic function impairment:

*Albumin- Liver disease reduces albumin levels, Correlation with PT (Prothrombin Time) helps.

4. Associated tests for assessment of liver fibrosis - Fibrosis-4 and APRI Index.

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DEPARTMENT OF BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Interval	Method
RENAL PROFILE/KIDNEY FUNCTION TEST (RFT/KFT) , *SERUM*				
CREATININE	0.92	mg/dL	0.84 - 1.25	Modified Jaffe, Kinetic
UREA	18.70	mg/dL	17-43	GLDH, Kinetic Assay
BLOOD UREA NITROGEN	8.7	mg/dL	8.0 - 23.0	Calculated
URIC ACID	**7.79**	mg/dL	3.5–7.2	Uricase PAP
CALCIUM	9.90	mg/dL	8.8-10.6	Arsenazo III
PHOSPHORUS, INORGANIC	3.67	mg/dL	2.5-4.5	Phosphomolybdate Complex
SODIUM	**135**	mmol/L	136–146	ISE (Indirect)
POTASSIUM	4.8	mmol/L	3.5–5.1	ISE (Indirect)
CHLORIDE	**98**	mmol/L	101–109	ISE (Indirect)
PROTEIN, TOTAL	**8.34**	g/dL	6.6-8.3	Biuret
ALBUMIN	5.00	g/dL	3.5-5.2	BROMO CRESOL GREEN
GLOBULIN	3.34	g/dL	2.0-3.5	Calculated
A/G RATIO	1.5		0.9-2.0	Calculated

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DEPARTMENT OF IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval	Method
THYROID PROFILE TOTAL (T3, T4, TSH) , *SERUM*				
TRI-IODOTHYRONINE (T3, TOTAL)	0.93	ng/mL	0.7-2.04	CLIA
THYROXINE (T4, TOTAL)	10.29	µg/dL	5.48-14.28	CLIA
THYROID STIMULATING HORMONE (TSH)	5.551	µIU/mL	0.34-5.60	CLIA

Comment:

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

1. TSH is a glycoprotein hormone secreted by the anterior pituitary. TSH activates production of T3 (Triiodothyronine) and its prohormone T4 (Thyroxine). Increased blood level of T3 and T4 inhibit production of TSH.

2. TSH is elevated in primary hypothyroidism and will be low in primary hyperthyroidism. Elevated or low TSH in the context of normal free thyroxine is often referred to as sub-clinical hypo- or hyperthyroidism respectively.

3. Both T4 & T3 provides limited clinical information as both are highly bound to proteins in circulation and reflects mostly inactive hormone. Only a very small fraction of circulating hormone is free and biologically active.

4. Significant variations in TSH can occur with circadian rhythm, hormonal status, stress, sleep deprivation, medication & circulating antibodies.

TSH	**T3**	**T4**	**FT4**	**Conditions**
High	Low	Low	Low	Primary Hypothyroidism, Post Thyroidectomy, Chronic Autoimmune Thyroiditis
High	N	N	N	Subclinical Hypothyroidism, Autoimmune Thyroiditis, Insufficient Hormone Replacement Therapy.
N/Low	Low	Low	Low	Secondary and Tertiary Hypothyroidism
Low	High	High	High	Primary Hyperthyroidism, Goitre, Thyroiditis, Drug effects, Early Pregnancy
Low	N	N	N	Subclinical Hyperthyroidism
Low	Low	Low	Low	Central Hypothyroidism, Treatment with Hyperthyroidism
Low	N	High	High	Thyroiditis, Interfering Antibodies
N/Low	High	N	N	T3 Thyrotoxicosis, Non thyroidal causes
High	High	High	High	Pituitary Adenoma; TSHoma/Thyrotropinoma

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DEPARTMENT OF IMMUNOLOGY

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

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TERMS AND CONDITIONS GOVERNING THIS REPORT

The reported results are for information and interpretation of the referring doctor or such other medical professionals, who understand reporting units, reference ranges and limitations of technologies.
Laboratories not be responsible for any interpretation whatsoever.
It is presumed that the tests performed are, on the specimen / sample being to the patient named or identified and the verifications of the particulars have been cleared out by the patient or his / her representative at the point of generation of said specimen.
The reported results are restricted to the given specimen only. Results may vary from lab to lab and from time to time for the same parameter for the same patient.
Assays are performed in accordance with standard procedures, The reported results are dependent on individual assay methods / equipment used and quality of specimen received.
This report is not valid for medico legal purposes.

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