PO No :APTDTUVS9FK1

Name	: Mr.GAURAV TRIPATHI	Client Name	: TATA 1MG BANGALORE
Age/Gender	: 35/Male	Registration Date	: 10/Mar/2024 09:38AM
Patient ID	: MGB699620	Collection Date	: 10/Mar/2024 08:47AM
Barcode ID/Order ID	: D5129917 / 9140606	Sample Receive Date	: 10/Mar/2024 10:37AM
Referred By	: Dr.	Report Status	: Final Report
Sample Type	: WHOLE BLOOD-EDTA	Report Date	: 10/Mar/2024 12:36PM

HAEMATOLOGY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
Glycosylated Hemoglobin (HbA1c)	5.6	%	4-5.6	HPLC (NGSP certified)
Estimated average glucose (eAG)	114.02	mg/dL		Calculated

Comment:

Interpretation: HbA1c%

≤5.6	Normal
5.7-6.4	At Risk For Diabetes
≥6.5	Diabetes

Adapted from American Diabetes Association.

Comments:

A 3 to 6 monthly monitoring is recommended in diabetics. People with diabetes should get the test done more often if their blood sugar stays too high or if their healthcare provider makes any change in the treatment plan. HbA1c concentration represent the integrated values for blood glucose over the preceding 8-12 weeks and is not affected by daily glucose fluctuation, exercise & recent food intake.
Please note, Glycemic goal should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations.

Factors that interfere with HbA1c Measurement: Hemoglobin variants, elevated fetal hemoglobin (HbF) and chemically modified derivatives of hemoglobin (e.g. carbamylated Hb in patients with renal failure) can affect the accuracy of HbA1c measurements.

Factors that affect interpretation of HbA1c Measurement: Any condition that shortens erythrocyte survival or decrease mean erythrocyte age (e. g., recovery from acute blood loss, hemolytic anemia, HbSS, HbCC, and HbSC) will falsely lower HbA1c test results regardless of the assay method used. Iron deficiency anemia is associated with higher HbA1c.

Note: Presence of Hemoglobin variants and/or conditions that affect red cell turnover must be considered, particularly when the HbA1c result does not correlate with the patient's blood glucose levels.

- HPLC - High performance liquid chromatography

NABL certificate and scope

This test has been performed at
TATA 1MG BANGALORE
Address: No 607, Ground, 1st,2nd, & 3rd Floor, 80 Feet Road, 6th Block, Koramangala, Bengaluru, 560095

Dr. Vinisha Nahata
MBBS, DCP (Pathology)
Consultant Pathologist
Reg No: 108310

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Referred By	: Dr.	Report Status	: Final Report
Sample Type	: Whole Blood-EDTA	Report Date	: 10/Mar/2024 12:39PM

HAEMATOLOGY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
Complete hemogram				
Hemoglobin	15.5	g/dL	13.0-17.0	Cyanide-free SLS-Hemoglobin
RBC	5.18	mili/cu.mm	4.5 - 5.5	DC Impedence Method
HCT	47.7	%	40 - 50	Pulse height average
MCV	92.1	fL	83 - 101	Calculated
MCH	29.8	pg	27 - 32	Calculated
MCHC	32.4	g/dL	31.5 - 34.5	Calculated
RDW-CV	**14.2**	%	11.6-14.0	Calculated
Total Leucocyte Count	6.16	10^3/µL	4 - 10	Impedence / Microscopy
Differential Leucocyte Count				
Neutrophils	55.1	%	40-80	Double hydrodynamic sequential system/Microscopy
Lymphocytes	27.5	%	20-40	Flowcytometry DHSS/ Microscopy
Monocytes	**10.7**	%	2-10	Flowcytometry DHSS/ Microscopy
Eosinophils	**6.2**	%	1-6	Double hydrodynamic sequential system/Microscopy
Basophils	0.5	%	0-2	Double hydrodynamic sequential system/Microscopy
Absolute Leucocyte Count				
Absolute Neutrophil Count	3.39	10^3/µL	2-7	Calculated
Absolute Lymphocyte Count	1.69	10^3/µL	1-3	Calculated
Absolute Monocyte Count	0.66	10^3/µL	0.2-1	Calculated
Absolute Eosinophil Count	0.38	10^3/µL	0.02-0.5	Calculated
Absolute Basophil Count	0.03	10^3/µL	0.02-0.1	Calculated
Platelet Count	226	10^3/µL	150-410	Impedence Variation /Microscopy

NABL certificate and scope

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HAEMATOLOGY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
MPV	11.1	fL	6.5 - 12	Calculated
PDW	**21.2**	fL	9-17	Calculated
Erythrocyte Sedimentation Rate	2	mm/hour	<=10	Modified Westergren at 18C

Comment:

- ESR provides an index of progress of the disease and is widely used as an indicator of inflammation, infection, trauma, or malignant diseases. Changes are more significant than a single abnormal test.
- It is specifically indicated to monitor the course or response to the treatment of diseases like rheumatoid arthritis, tuberculosis bacterial endocarditis ,acute rheumatic fever ,Hodgkins disease,temporal arthritis , and systemic lupus erythematosis; and to diagnose and monitor giant cell arteritis and polymyalgia rheumatica.
- An elevated ESR may also be associated with many other conditions, including autoimmune disease, anemia, infection,malignancy,pregnancy, multiple myeloma, menstruation, and hypothyroidism.
- Although a normal ESR cannot be taken to exclude the presence of organic disease, its rate is dependent on various physiologic and pathologic factors
- The most important component influencing ESR is the composition of plasma. High level of C-Reactive Protein, fibrinogen, haptoglobin, alpha-1antitrypsin, ceruloplasmin and immunoglobulins causes the elevation of Erythrocyte Sedimentation Rate.
- Drugs that may cause increase ESR levels include: dextran, methyldopa, oral contraceptives, penicillamine, procainamide, theophylline, and Vitamin A. Drugs that may cause decrease levels include: aspirin, cortisone, and quinine.
- As per the recommendation of International council for Standardization in Hematology, the differential leucocyte counts are additionally being reported as absolute numbers of each cell in per unit volume of blood.
- Test conducted on EDTA whole blood.

NABL certificate and scope

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Patient ID	: MGB699620	Collection Date	: 10/Mar/2024 08:47AM
Barcode ID/Order ID	: D5129919 / 9140606	Sample Receive Date	: 10/Mar/2024 10:33AM
Referred By	: Dr.	Report Status	: Final Report
Sample Type	: Fluoride Plasma F	Report Date	: 10/Mar/2024 11:55AM

BIOCHEMISTRY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
Glucose - Fasting				
Glucose - Fasting	94	mg/dL	70-99	Hexokinase/G-6-PDH

Fasting Plasma Glucose (mg/dL)	2 hr plasma Glucose (mg/dL)	Diagnosis
99 or below	139 or below	Normal
100 to 125	140 to 199	Pre-Diabetes (IGT)
126 or above	200 or above	Diabetes

Reference : American Diabetes Association

Comment:

Impaired glucose tolerance (IGT) fasting, means a person has an increased risk of developing type 2 diabetes but does not have it yet. A level of 126 mg/dL or above, confirmed by repeating the test on another day, means a person has diabetes. IGT (2 hrs Post meal), means a person has an increased risk of developing type 2 diabetes but does not have it yet. A 2-hour glucose level of 200 mg/dL or above, confirmed by repeating the test on another day, means a person has diabetes

Plasma Glucose Goals	For people with Diabetes
Before meal	70-130 mg/dL
2 Hours after meal	Less than 180 mg/dL
HbA1c	Less than 7%

NABL certificate and scope

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Referred By	: Dr.	Report Status	: Final Report
Sample Type	: Serum	Report Date	: 10/Mar/2024 02:03PM

BIOCHEMISTRY

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Test Name	Result	Unit	Bio. Ref. Interval	Method
Iron Studies, Basic				
Iron Serum	76	µg/dL	65-175	Ferene
Unsaturated Iron Binding Capacity	**244**	µg/dL	69 - 240	Ferrozine
Total Iron Binding Capacity (TIBC)	320	µg/dL	250 - 400	Calculated
Transferrin Saturation	23.65	%	16-50	Calculated

Comment:

Iron is an essential trace mineral element which forms an important component of hemoglobin, metallocompounds and Vitamin A. Deficiency of iron is seen in iron deficiency and anaemia of chronic disorders.
Increased iron concentration are seen in hemolytic anaemias, hemochromatosis and acute liver disease. Serum Iron alone is unreliable due to considerable physiologic diurnal variation in the results with highest values in the morning and lowest values in the evening as well as variation in response to iron therapy .

Total Iron Binding capacity (TIBC) is a direct measure of the protein Transferrin which transports iron from the gut to storage sites in the bone marrow. Increased levels of TIBC suggest that total iron body stores are low, increased concentration may be the sign of Iron deficiency anaemia, polycythemia vera ,and may occur during the third trimester of pregnancy. Decreased levels may be seen in hemolytic anaemia, hemochromatosis, chronic liver disease, hypoproteinemia ,malnutrition.

Unsaturated Iron Binding Capacity (UIBC) is increased in low iron state and decreased in high iron concentration such as hemochromatosis. In case of anaemia of chronic disease the patient may be anaemic but has adequate iron reserve and a low uIBC.

Transferrin Saturation occurs in Idiopathic hemochromatosis and Transfusional hemosiderosis where no unsaturated iron binding capacity is available for iron mobilization. Similar condition is seen in congenital deficiency of Transferrin.

Test Name	Result	Unit	Bio. Ref. Interval	Method
Lipid Profile				
Cholesterol - Total	**205**	mg/dL	Desirable <200, Borderline High 200 - 239, High >=240	Enzymatic
Triglycerides	127	mg/dL	Normal: < 150, Borderline: 150 - 199, High:200 - 499, Very High >=500	Glycerol Phosphate Oxidase
Cholesterol - HDL	44	mg/dL	40-60	Accelerator Selective Detergent

NABL certificate and scope

This test has been performed at
TATA 1MG BANGALORE
Address: No 607, Ground, 1st,2nd, & 3rd Floor, 80 Feet Road, 6th Block, Koramangala, Bengaluru, 560095

Dr Ashwin Kumar A.S
MBBS M.D (Biochemistry)
Consultant Biochemist
Reg No:68123

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BIOCHEMISTRY

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Test Name	Result	Unit	Bio. Ref. Interval	Method
Cholesterol - LDL	**136**	mg/dL	Desirable: <100 Above desirable: 100 - 129 Borderline high : 130 - 159 High : 160 - 189 Very high : >=190	Calculated
Cholesterol- VLDL	25	mg/dL	10 - 30	Calculated
Cholesterol : HDL Cholesterol	4.7	Ratio	Desirable : 3.5-4.5 High Risk : >5	Calculated
LDL : HDL Cholesterol	3.08	Ratio	Desirable : 2.5-3.0 High risk : >3.5	calculated
Non HDL Cholesterol	**161**	mg/dl	Desirable:< 130, Above Desirable:130 - 159, Borderline High:160 - 189, High:190 - 219, Very High: >= 220	Calculated

Comment:

●Lipid profile measurements in the same patient can show physiological & analytical variations. It is recommended that 3 serial samples 1 week apart may be tested.
●Indians are at a high risk of developing atherosclerotic cardiovascular disease (ASCVD); at a much earlier age and more severe with high mortality. Dyslipidemia (abnormal lipid profile) is the major risk factor and found in almost 80% Indians.
●**Total cholesterol** is the total amount of cholesterol in blood comprising of HDL, LDL-C, and VLDL.
●**LDL Cholesterol (LDL-C)** or "bad"cholesterol contributes most significantly to atherosclerosis leading to heart disease or stroke and is the primary target for reducing risk for cardiovascular disease.
●**High-density lipoprotein (HDL)** or "good" cholesterol can lower risk of heart disease and stroke.
●**Triglyceride (TG)** level also plays a major role in CVD. Indians are more prone to Atherogenic dyslipidemia, a condition associated with high TG, low HDL-C and high LDL-C; this is associated with diabetes, metabolic syndrome and insulin resistance. Hence high triglyceride levels also need to be treated.
●**Non-HDL-Cholesterol (Non-HDLC)** measures all plaque forming lipoproteins (e.g. remnants, LDL-C, VLDL, Lp(a), Apo-B). Monitoring of Non-HDLC is important in patients with high TG (e.g. diabetics, obese persons) and those already on statin therapy.
●**Lipid Association of India (LAI-2020) recommends:-**

- Screening of all Indians above the age of 20 years for CVD risk factors, esp. lipid profile.
- Identification of Risk factors: Age (male ≥45 years, female ≥55 years); Family h/o heart disease at younger age (<55 yrs

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BIOCHEMISTRY

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Test Name	Result	Unit	Bio. Ref. Interval	Method

in males, <65 yrs in female), Smoking/tobacco use, High blood pressure, Low HDL (males <40 mg/dl and females <50mg/dl).

- Fasting lipid profile is not mandatory for screening. Both fasting and non-fasting lipid profiles are equally important for managing Indian patients.
- Non-HDLC should be calculated in every subject. LAI recommends LDL-C as the primary target and Non-HDLC as the co-primary target for initiating drug therapy.
- Lifestyle modifications are of first and foremost importance for management and prevention of dyslipidemia. Among low risk groups, treatment is started only after 3 months of lifestyle changes.
- Testing for Apolipoprotein B, hsCRP, Lp(a) should be considered for patients in moderate risk group.
- Newer treatment goals based on Risk Groups and values of LDL-C and Non-HDLC

New treatment goals by Lipid Association of India (2020)

	CONSIDER THERAPY (cut-off level)		TREATMENT GOALS	
Risk groups	**LDL-C (mg/dL)**	**Non-HDLC (mg/dL)**	**LDL-C (mg/dL)**	**Non-HDLC (mg/dL)**
Extreme Risk Gp Cat. A	≥50	≥80	<50 (Optional ≤30)	<80 (Optional ≤60)
Extreme Risk Gp Cat. B	>30	>60	≤30	≤60
Very High Risk	≥50	≥80	<50	<80
High Risk	≥70	≥100	<70	<100
Moderate Risk	≥100	≥130	<100	<130
Low risk	≥130*	≥160*	<100	<130
*After an adequate non-pharmacological intervention for at least 3 months				

●**As per NCEP Expert Panel (2011) guidelines**, universal screening for dyslipidemia is recommended for children between 9 - 11 yrs (repeat at 17-21 yrs). Screening is not recommended before the age of 2yrs. Above the age of 2 yrs, selective screening is done in children with family history of premature CVD or risk factors like obesity, diabetes, and hypertension.

Note: Reference Interval as per National Cholesterol Education Program (NCEP) Report.

Liver Function Test

Bilirubin-Total	0.80	mg/dL	0.3-1.2	Diazonium Salt
Bilirubin-Direct	0.25	mg/dL	0-0.5	Diazo
Bilirubin-Indirect	0.55	mg/dL	0 - 1.8	Calculated
Protein, Total	7.10	g/dL	6.4-8.3	Biuret
Albumin	4.30	g/dL	3.5-5.0	Bromocresol Green
Globulin	2.8	g/dl	1.8 - 3.6	Calculated
A/G Ratio	1.54	Ratio	0.8 - 2.1	Calculated

NABL certificate and scope

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BIOCHEMISTRY

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Test Name	Result	Unit	Bio. Ref. Interval	Method
Aspartate Transaminase (SGOT)	**38**	U/L	5-34	NADH w/o P-5'-P
Alanine Transaminase (SGPT)	**60**	U/L	0-45	NADH w/o P-5'-P
SGOT/SGPT	0.63	Ratio	<1	Calculated
Alkaline Phosphatase	61	U/L	40-150	Para-Nitrophenyl Phosphate
Gamma Glutamyltransferase (GGT)	38	U/L	12-55	L-gamma-glutamyl-3-Carboxy-4-Nitroanilide

Comment:

- LFTS are based upon measurements of substances released from damaged hepatic cells into the blood that gives idea of the Existence, Extent and Type of Liver damage. - Acute Hepatocellular damage: ALT & AST levels are sensitive index of hepatocellular damage - Obstruction to the biliary tract,Cholestasis and blockage of bile flow:1) Serum Total Bilirubin concentration 2) Serum Alkaline Phosphatase (ALP) activity 3) Gamma Glutamyl Transpeptidase (GGTP) 4) 5`-Nucleotidase - Chronic liver disease: Serum Albumin concentration
- Bilirubin results from the enzymatic breakdown of heme. Jaundice is a yellowish discoloration of the skin and mucous membranes caused by hyperbilirubinemia.
- Pre-hepatic or hemolytic jaundice - Abnormal red cells, antibodies,drugs and toxins,Hemoglobinopathies, Gilbert's syndrome, Crigler-Najjar syndrome
- Hepatic or Hepatocellular jaundice-Viral hepatitis,toxic hepatitis, intrahepatic cholestasis
- Post-hepatic jaundice -Extrahepatic cholestasis, gallstones, tumors of the bile duct, carcinoma of pancreas
- In viral hepatitis and other forms of liver disease associated with acute hepatic necrosis, serum AST and ALT concentrations are elevated even before the clinical signs and symptoms of disease appear.
- ALT is the more liver-specific enzyme and elevations of ALT activity persist longer than AST activity.
- Peak values of aminotransferase activity occur between the seventh and twelfth days. Activities then gradually decrease, reaching normal activities by the third to fifth week. Peak activities bear no relationship to prognosis and may fall with worsening of the patient's condition.
- Aminotransferase activities observed in cirrhosis vary with the status of the cirrhotic process and range from the upper reference limit to four to five times higher, with an AST/ALT ratio greater than 1. The ratio's elevation can reflect the grade of fibrosis in these patients. Slight or moderate elevations of both AST and ALT activities have been observed after administration of various medications and chronic hepatic injury such as (1) hemochromatosis, (2) Wilson disease, (3) autoimmune hepatitis, (4) primary biliary cirrhosis, (5) sclerosing cholangitis, and (6) a1-antitrypsin deficiency.
- AST activity also is increased in acute myocardial infarction, progressive muscular dystrophy and dermatomyositis, reaching concentrations up to eight times the upper reference limit.Slight to moderate AST elevations are noted in hemolytic

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BIOCHEMISTRY

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disease.

- GGT is a sensitive indicator of the presence of hepatobiliary disease, being elevated in most subjects with liver disease regardless of cause. Increased concentrations of the enzyme are also found in serum of subjects receiving anticonvulsant drugs, such as phenytoin and phenobarbital.

Kidney Function Test.

Test Name	Result	Unit	Bio. Ref. Interval	Method
Blood Urea Nitrogen	11	mg/dL	8.9-20.6	Urease
Urea	23.54	mg/dL	19.0 - 44.0	Calculated
Creatinine	1.10	mg/dL	0.6-1.2	Kinetic Alkaline Picrate
Uric Acid	7.2	mg/dL	3.7-7.7	Uricase
Sodium	141	mmol/L	136-145	INDIRECT ISE
Potassium	4.40	mmol/L	3.5-5.1	INDIRECT ISE
Chloride	**108.0**	mmol/L	98-107	INDIRECT ISE
BUN/Creatinine Ratio	10.0	Ratio	12:1 - 20:1	Calculated

Comment:

BUN is directly related to protein intake and nitrogen metabolism and inversely related to the rate of excretion of urea.Blood urea nitrogen (BUN) levels reflect the balance between the production and excretion of urea. Increased levels are seen in renal failure (acute or chronic), urinary tract obstruction, dehydration, shock, burns, CHF, GI bleeding, nephrotoxic drugs. Decreased levels are seen in hepatic failure, nephrotic syndrome, cachexia (low-protein and high-carbohydrate diets).
Urea is a non-proteinous nitrogen compound formed in the liver from ammonia as an end product of protein metabolism. Urea diffuses freely into extracellular and intracellular fluid and is ultimately excreted by the kidneys. Increased levels are found in acute renal failure, chronic glomerulonephritis, congestive heart failure, decreased renal perfusion, diabetes, excessive protein ingestion, gastrointestinal (GI) bleeding, hyperalimentation, hypovolemia, ketoacidosis, muscle wasting from starvation, neoplasms, pyelonephritis, shock, urinary tract obstruction, nephrotoxic drugs. Decreased levels are seen in inadequate dietary protein, low-protein/high-carbohydrate diet, malabsorption syndromes, pregnancy, severe liver disease, certain drugs.
Creatinine is catabolic product of creatinine phosphate, which is excreted by filtration through the glomerulus and by tubular secretion. Creatinine clearance is an acceptable clinical measure of glomerular filtration rate (GFR). Increased levels are seen in acute/chronic renal failure, urinary tract obstruction, hypothyroidism, nephrotoxic drugs, shock, dehydration, congestive heart failure, diabetes. Decreased levels are found in muscular dystrophy.
BUN/Creatinine ratio (normally 12:1–20:1) is decreased in acute tubular necrosis, advanced liver disease, low protein intake, and following hemodialysis. BUN/Creatinine ratio is increased in dehydration, GI bleeding, and increased catabolism.
Uric acid levels show diurnal variation. The level is usually higher in the morning and lower in the evening. Increased levels are seen in starvation, strenuous exercise, malnutrition, or lead poisoning, gout, renal disorders, increased breakdown of body cells in some cancers (including leukemia, lymphoma, and multiple myeloma) or cancer treatments, hemolytic anemia, sickle cell anemia, or heart failure, pre-eclampsia, liver disease (cirrhosis), obesity, psoriasis, hypothyroidism, low blood levels of parathyroid hormone (PTH), certain drugs, foods that are very high in purines - such as organ meats, red meats, some seafood and beer. Decreased levels are seen in liver disease, Wilson's disease, Syndrome of inappropriate antidiuretic hormone (SIADH), certain drugs.

NABL certificate and scope

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BIOCHEMISTRY

EK SA

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Barcode ID/Order ID	: D5129915 / 9140606	Sample Receive Date	: 10/Mar/2024 10:43AM
Referred By	: Dr.	Report Status	: Final Report
Sample Type	: Serum	Report Date	: 10/Mar/2024 02:20PM

Immunology

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
Thyroid Profile				
T3, Total	0.82	ng/mL	0.35-1.93	CMIA
T4, Total	9.0	µg/dL	4.87-11.72	CMIA
Thyroid Stimulating Hormone - Ultra Sensitive	0.403	µIU/mL	0.35-4.94	CMIA

Comment:

- Below mentioned are the guidelines for pregnancy related reference ranges for TSH, total T3 & Total T4.

Pregnancy			
	TSH (µIU/mL) (as per American Thyroid Association)	Total T3 (ng/mL)	Total T4(µg/dL)
1st trimester	0.1-2.5	0.81-1.90	7.33-14.8
2nd trimester	0.2-3.0	1.00-2.60	7.93-16.1
3rd trimester	0.3-3.0	1.00-2.60	6.95-15.7

- TSH levels are subject to circadian variation, reaching peak levels between 2 - 4.a.m. and at a minimum between 6-10 pm .
- The variation is of the order of 50%, hence time of the day has influence on the measured serum TSH concentrations.
- TSH is secreted in a dual fashion: Intermittent pulses constitute 60-70% of total amount, background continuous secretion is 30-40%.These pulses occur regularly every 1-3 hrs.
- Total T3 & T4 concentrations are altered by physiological or pathological changes in thyroxine binding globulin (TBG) capacity .
- The determination of free T3 & free T4 has the advantage of being independent of changes in the concentrations and binding properties of the binding proteins.
- Changes in thyroid status are typically associated with concordant changes in T3, T4 and TSH levels.
- Unexpectedly abnormal or discordant thyroid test values may be seen with some rare, but clinically significant conditions such as central hypothyroidism, TSH-secreting pituitary tumors, thyroid hormone resistance, or the presence of heterophilic antibodies (HAMA) or thyroid hormone autoantibodies.
- For diagnostic purposes, results should be used in conjunction with other data.

TSH	T3	T4	Interpretation

NABL certificate and scope

This test has been performed at
TATA 1MG BANGALORE
Address: No 607, Ground, 1st,2nd, & 3rd Floor, 80 Feet Road, 6th Block, Koramangala, Bengaluru, 560095

Dr Ashwin Kumar A.S
MBBS M.D (Biochemistry)
Consultant Biochemist
Reg No:68123

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PO No :APTDTUVS9FK1

Name	: Mr.GAURAV TRIPATHI	Client Name	: TATA 1MG BANGALORE
Age/Gender	: 35/Male	Registration Date	: 10/Mar/2024 09:38AM
Patient ID	: MGB699620	Collection Date	: 10/Mar/2024 08:47AM
Barcode ID/Order ID	: D5129915 / 9140606	Sample Receive Date	: 10/Mar/2024 10:43AM
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Immunology

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method

High	Normal	Normal	Subclinical Hypothyroidism
Low	Normal	Normal	Subclinical Hyperthyroidism
High	High	High	Secondary Hyperthyroidism
Low	High/Normal	High/Normal	Hyperthyroidism
Low	Low	Low	Non thyroidal illness / Secondary Hypothyroidism

Vitamin D (25-OH)

Vitamin D (25-OH)	45.7	ng/mL	Deficiency:< 20, Insufficiency:20-29, Sufficiency:30-100, Hypervitaminosis:> 100	CMIA

Comment:

- Vitamin D is a fat-soluble steroid prohormone involved in the intestinal absorption of calcium and the regulation of calcium homeostasis.
- Two forms of vitamin D are biologically relevant - vitamin D3 (Cholecalciferol) and vitamin D2 (Ergocalciferol).
- Both vitamins D3 and D2 can be absorbed from food but only an estimated 10-20perc. of vitamin D is supplied through nutritional intake.
- Vitamin D is converted to the active hormone 1,25-(OH)2-vitamin D (Calcitriol) through two hydroxylation reactions. The first hydroxylation converts vitamin D into 25-OH vitamin D and occurs in the liver. The second hydroxylation converts 25-OH vitamin D into the biologically active 1,25-(OH)2-vitamin D and occurs in the kidneys as well as in many other cells of the body.
- Most cells express the vitamin D receptor and about 3perc. of the human genome is directly or indirectly regulated by the vitamin D endocrine system.
- The major storage form of vitamin D is 25-OH vitamin D and is present in the blood at up to 1,000 fold higher concentration compared to the active 1,25-(OH)2-vitamin D. 25-OH vitamin D has a half-life of 2-3 weeks vs. 4 hours for 1,25-(OH)2-vitamin D. Therefore, 25-OH vitamin D is the analyte of choice for determination of the vitamin D status.
- Risk factors for vitamin D deficiency include low sun exposure, inadequate intake, decreased absorption, abnormal metabolism, vitamin D resistance and and liver or kidney diseases.
- Vitamin D deficiency is a cause of secondary hyperparathyroidism and diseases resulting in impaired bone metabolism (like rickets, osteomalacia).

NABL certificate and scope

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- Recently, many chronic diseases such as cancer, high blood pressure, osteoporosis and several autoimmune diseases have been linked to vitamin D deficiency.
- The assay measures both D2 (Ergocalciferol) and D3 (Cholecalciferol) metabolites of vitamin D

Utility Quantitative determination of 25-hydroxyvitamin D (25-OH vitamin D).

Vitamin B12

Vitamin B12	271.0	pg/mL	187-833	CMIA

Comment:

- **Vitamin B12** along with **folate** is essential for DNA synthesis and myelin formation.
- **Decreased levels** are seen in anaemia, term pregnancy, vegetarian diet, intrinsic factor deficiency, partial gastrectomy/ileal damage, celiac disease, oral contraceptive use, parasitic infestation, pancreatic deficiency, treated epilepsy, smoking, hemodialysis and advanced age.
- **Increased levels** are seen in renal failure, hepatocelluar disorders, myeloproliferative disorders and at times with excess supplementation of vitamins pills.

NABL certificate and scope

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Age/Gender	: 35/Male	Registration Date	: 10/Mar/2024 09:38AM
Patient ID	: MGB699620	Collection Date	: 10/Mar/2024 08:47AM
Barcode ID/Order ID	: D5129921 / 9140606	Sample Receive Date	: 10/Mar/2024 10:31AM
Referred By	: Dr.	Report Status	: Final Report
Sample Type	: Urine	Report Date	: 10/Mar/2024 12:00PM

CLINICAL PATHOLOGY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method
Urine Routine & Microscopy				
Colour	PALE YELLOW		Pale Yellow	
Appearance	CLEAR		Clear	Visual
Specific gravity	1.025		1.003 - 1.035	pKa change
pH	5.5		4.6 - 8.0	Double Indicator
Glucose	NEGATIVE		Negative	GOD-POD
Protein	NEGATIVE		Negative	Protein Error Principle
Ketones	NEGATIVE		Negative	Nitroprusside
Blood	NEGATIVE		Negative	Peroxidase
Bilirubin	NEGATIVE		Negative	Diazonium
Urobilinogen	NORMAL		Normal	Ehrlich
Leucocyte Esterase	NEGATIVE		Negative	Pyrrole
Nitrite	NEGATIVE		Negative	Diazonium Compound
Pus cells	2-3	/hpf	0-5	Microscopy
Red Blood Cells	NIL	/hpf	0-2	Microscopy
Epithelial cells	1-2	/hpf	Few	Microscopy
Casts	NIL	/lpf	Nil	Microscopy
Crystals	NIL		Nil	Microscopy
Yeast	NIL		Nil	Microscopy
Bacteria	NIL		Nil	Microscopy

Comment:

•Note: Pre-test condition to be observed while submitting the sample-first void, mid stream urine, collected in a clean, dry, sterile container is recommended for routine urine analysis, avoid contamination with any discharge from vaginal, urethra, perineum, Avoid prolonged transit time & undue exposure to sunlight.

•During interpretation, points to be considered are Negative nitrite test does not exclude the urinary tract infections. Trace proteinuria can be seen with many physiological conditions like prolonged recumbency, exercise, high protein diet. False positive reactions for bile pigments, proteins, glucose and nitrites can be caused by peroxidase like activity by disinfectants, therapeutic dyes, ascorbic acid and certain drugs.• Urine microscopy is done in centrifuged urine specimens

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

Conditions of Laboratory Testing & Reporting:

NABL certificate and scope

This test has been performed at
TATA 1MG BANGALORE
Address: No 607, Ground, 1st,2nd, & 3rd Floor, 80 Feet Road, 6th Block, Koramangala, Bengaluru, 560095

Dr. Vinisha Nahata
MBBS, DCP (Pathology)
Consultant Pathologist
Reg No: 108310

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Sample Type	: Urine	Report Date	: 10/Mar/2024 12:00PM

CLINICAL PATHOLOGY

EK SA

Test Name	Result	Unit	Bio. Ref. Interval	Method

Test results released pertain to the sample, as received. Laboratory investigations are only a tool to facilitate in arriving at a diagnosis and should be clinically correlated by the interpreting clinician. Result delays may happen because of unforeseen or uncontrollable circumstances. Test report may vary depending on the assay method used. Test results may show inter-laboratory variations. Test results are not valid for medico-legal purposes. Please mail your queries related to test results to Customer Care mall ID cs.labs@1mg.com

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NABL certificate and scope

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Dr. Vinisha Nahata
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Consultant Pathologist
Reg No: 108310

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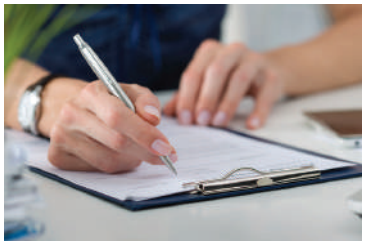

Each report undergoes rigorous medical scrutiny & is signed off by a doctor

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care@1mg.com **1800-212-2323**

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