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Central Reference Laboratory,
Door No. 1-100/1/CCH Nallagandla
Serilingampally
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MC-2751

AMPATH
ACCURATE DIAGNOSTICS, AMERICAN STANDARDS.
In collaboration with
UPMC LIFE CHANGING MEDICINE

LABORATORY REPORT

PATIENT INFORMATION		REFERRED BY		SPECIMEN INFORMATION	
MR. SURA KARTHIKEYA		SELF		SAMPLE TYPE	: Serum
AGE	: 22Y 0M 0D	AMPATH		LAB ORDER NO	: VAMP24058942
GENDER	: Male	LAB MR#	: AAMP00611151	COLLECTED ON	: 11/Feb/2024 17:39
PRIORITY	: Routine			RECEIVED ON	: 11/Feb/2024 17:53
OP / IP / DG #	:			REPORT STATUS	: Final Report
				APPROVED ON	: 11/Feb/2024 19:28

Test Name (Methodology)	Result	Flag	Units	Biological Reference Interval
Am-Fit Shubh Health				
HAEMATOLOGY				
Complete Blood Counts				
(Automated Hematology Analyzer & Microscopy)				
Hemoglobin (photometric method)	14.0		g/dL	13.0 - 17.0
RBC Count (coulter principle)	4.8		10^6/µL	4.5 - 5.5
Hematocrit	42.7		%	40 - 50
MCV(Mean Corpuscular Volume) (Derived from RBC Histogram)	88.6		fL	83 - 101
MCH(Mean Corpuscular Hemoglobin) (Calculated)	29.0		pg	27 - 32
MCHC(Mean Corpuscular Hemoglobin Concentration) (Calculated)	32.8		g/dL	31.5 - 34.5
RDW (Derived from RBC Histogram)	13.7		%	11.6 - 14
Total Leukocyte Count (coulter principle)	4.7		10^3/µl	4.0 - 10.0
Differential count % (VCSn Technology & light microscopy)				
Neutrophils	50.0		%	40-80
Lymphocytes	38.0		%	20-40
Monocytes	6.0		%	2-10
Eosinophils	6.0		%	1-6
Basophils	0.0		%	0-1
Differential Counts, Absolute(calculated)				
Absolute Neutrophil Count (VCSn/Calculated)	2.35		10^3/µl	2.0-7.0
Absolute Lymphocyte Count (VCSn/Calculated)	1.79		10^3/µl	1.0-3.0
Absolute Monocyte Count	0.28		10^3/µl	0.2 - 1.0
Absolute Eosinophil Count (AEC) (VCSn/Calculated)	0.28		10^3/µl	0.02-0.5
Absolute Basophil Count	0.00		10^3/µl	0.02 - 0.1
Platelet Count (coulter principle)	283		10^3/µl	150 - 410
MPV	**7.3**	L	fL	7.5 - 11.5

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Am-Fit Shubh Health				
BIOCHEMISTRY				
Glucose - Fasting				
Glucose - Fasting (Hexokinase)	84.0		mg/dL	Normal : 74-100 Pre-diabetic : 100-125 Diabetic: >=126
HbA1c - Glycated Hemoglobin				
Glycated Hemoglobin, HbA1c (TINIA)	5.40		%	Non diabetic range: 4.8-5.6% Prediabetic range: 5.7-6.4% Diabetes range: >=6.5%
Estimated Average Glucose	108.3		mg/dL	

Interpretation:
Note: HbA1c results may vary in situations of abnormal red cell turnover, such as pregnancy, recent blood loss or transfusion, or some anemias. In such cases only blood glucose criteria should be used to diagnose diabetes (ADA, 2014). Please correlate clinically.

LFT(Bilirubin Total, Bilirubin Conjugated,

Bilirubin Total (Diazo method)	0.31		mg/dL	<1.1
Bilirubin Conjugated (Diazo method)	0.13		mg/dL	<=0.2
Bilirubin Unconjugated, Indirect (Calculation)	0.18		mg/dL	<1.0
Aspartate Aminotransferase (AST/SGOT) (IFCC kinetic)	18		U/L	<37
Alanine aminotransferase - (ALT / SGPT) (Kinetic IFCC)	8		U/L	<41
Alkaline Phosphatase - ALP (IFCC kinetic)	97.0		U/L	<129

Interpretation:

1. In an asymptomatic patient, Non alcoholic fatty liver disease (NAFLD) is the most common cause of increased AST, ALT levels. NAFLD is considered as hepatic manifestation of metabolic syndrome.
2. In most type of liver disease, ALT activity is higher than that of AST; exception may be seen in Alcoholic Hepatitis, Hepatic Cirrhosis, and Liver neoplasia. In a patient with Chronic liver disease, AST:ALT ratio>1 is highly suggestive of advanced liver fibrosis.
3. In known cases of Chronic Liver disease due to Viral Hepatitis B & C, Alcoholic liver disease or NAFLD, Enhanced liver fibrosis (ELF) test may be used to evaluate liver fibrosis.

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Am-Fit Shubh Health				

4. In a patient with Chronic Liver disease, AFP and Des-gamma carboxyprothrombin (DCP)/PIVKA II can be used to assess risk for development of Hepatocellular Carcinoma.

Blood Urea Nitrogen, BUN - Serum				
Blood Urea Nitrogen (BUN) (Calculation)	8.83		mg/dL	8.8-20.5
Creatinine (Modified Jaffe Kinetic)	1.06		mg/dL	< 1.20
Electrolytes (Na, K, Cl) - Serum				
Sodium - Serum (ISE Indirect)	141.0		mmol/L	136 - 145
Potassium (ISE Indirect)	3.90		mmol/L	3.5-5.1
Chloride - Serum (ISE Indirect)	102.0		mmol/L	98-107

CLINICAL PATHOLOGY

Urine Examination - Routine & Microscopy (CUE)				
PHYSICAL EXAMINATION:				
Volume	10.00		mL	
Colour	Pale yellow			Pale
Appearance	Clear			Clear
CHEMICAL EXAMINATION:				
pH (Dip stick)	6.00			4.8 - 7.4
Specific Gravity (Dip Stick(Bromothymol blue))	1.015			1.010 - 1.022
Protein (Dip Stick/ Sulfosalicylic acid)	Absent			Negative
Glucose (Dip Stick /Benedicts test)	Negative			Negative
Ketones (Dip stick/Sodium nitroprusside reaction)	Absent			Negative
Urobilinogen (Dip Stick / Ehrlich reaction)	Normal			Normal
Leucocyte Esterase (Dip Stick)	Negative			Negative

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Am-Fit Shubh Health				
Nitrite (Dip Stick / (Griess test))	Negative			Negative
Bilirubin (Dipstick/diazo)	Negative			Negative
Blood (Dip Stick (Peroxidase))	Not Detected			Negative
Microscopic Examination				
Pus Cells	6 - 8	H	/HPF	0 - 5
Epithelial Cells	1 - 2		/HPF	< 5
RBCs	Absent		/HPF	0 - 5
Casts	Absent		/LPF	Absent
Crystals	Absent		/HPF	Absent
BIOCHEMISTRY				
Calcium - Serum				
Calcium - Serum (NM-BAPTA)	9.50		mg/dL	8.6 - 10.0
Urea (Kinetic, Urease)	**18.9**	L	mg/dL	19 - 49
Uric acid				
Uric acid (Uricase)	5.9		mg/dL	3.4-7
Protein Total, Serum				
Protein Total, Serum (Biuret Method)	7.1		g/dL	6.4-8.3
Lipid profile(Cholesterol, Triglycerides)				
Cholesterol Total - Serum (Enzymatic colorimetric)	151.0		mg/dL	No risk: <200 Moderate risk: 200-239 High risk: >240
Triglycerides (Enzymatic colorimetry)	77.6		mg/dL	Normal: <150 Borderline-high: 150–199 High risk 200–499 Very high risk >500
Cholesterol - HDL (Direct) (Enzymatic colorimetric)	51.0		mg/dL	High Risk: <40 No Risk: >60

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Am-Fit Shubh Health				
LDL Chol, Calculated	84.48		mg/dL	<100
VLDL (Very Low Density Lipoprotein) (Calculation)	15.5		mg/dL	<30
Cho/HDL Ratio (Enzymatic colorimetric & Calculation)	2.96			Normal:<4.0 Low risk:4.0-6.0 High risk:>6.0
LDL/HDL Ratio	1.66			Desirable/Low Risk: 0.5 - 3.0 Borderline/Moderate: 3.1 - 6.0 High Risk: >6.0
Phosphorous Inorganic				
Phosphorous Inorganic (UV-Phosphomolybdate)	**5.19**	H	mg/dL	2.5-4.5
T3 - Total (Tri Iodothyronine) (ECLIA)	130.6		ng/dL	80.00 - 200.00
T4 - Total (Thyroxine - Total) (ECLIA)	9.43		µg/dL	5.1-14.1

Interpretation:

Note :
1. Total T3 & T4 levels measure the hormone which is in the bound form and is not available to most tissues.
2. Severe systemic illness affects the thyroid binding proteins and can falsely alter Total T 4 levels in the absence of a primary thyroid disease. Hence Free T3 & T4 levels are recommended for accurate assessment of thyroid dysfunction.

TSH, Thyroid Stimulating Hormone (ECLIA)	1.400		µIU/mL	0.27 - 4.21

Interpretation:
The following potential sources of variation should be considered while interpreting thyroid hormone results:
1. Circadian variation in TSH secretion: peak levels are seen between 2-4 am. Minimum levels seen between 6-10 am. This variation may be as much as 50% thus, influence of sampling time needs to be considered for clinical interpretation.
2. Total T3 and T4 levels are seen to have physiological rise during pregnancy and in patients on steroid treatment
3. Circulating forms of T3 and T4 are mostly reversibly bound with Thyroxine binding globulins (TBG), and to a lesser extent with albumin and Thyroid binding Pre-Albumin. Thus the conditions in which TBG and protein levels alter such as chronic liver disorders, pregnancy, excess of estrogens, androgens, anabolic steroids and glucocorticoids may cause misleading total T3, total T4 and TSH interpretations.
4. T4 may be normal in the presence of hyperthyroidism under the following conditions : T3 thyrotoxicosis, Hypoproteinemia related reduced binding, in presence of drugs (eg Phenytoin, Salicylates etc)
5. Neonates and infants have higher levels of T4 due to increased concentration of TBG
6. TSH levels may be normal in central hypothyroidism, recent rapid correction of hypothyroidism or hyperthyroidism, pregnancy, phenytoin therapy etc.

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7. TSH values of <0.03 uIU/mL must be clinically correlated to evaluate the presence of a rare TSH variant in certain individuals which is undetected by conventional methods.
8. Presence of Autoimmune disorders may lead to spurious results of thyroid hormones
9. Various drugs can lead to interference in test results
It is recommended to evaluate unbound fractions, that is free T3 (fT3) and free T4 (fT4) for clinic-pathologic correlation, as these are the metabolically active forms.

Vitamin B12

Vitamin B12 (ECLIA)	**178.4**	L	pg/mL	191-771

Interpretation:

Vitamin B12 also referred to as cobalamin is a water soluble vitamin. The uptake in the gastro intestinal track depends on intrinsic factor, which is synthesised by gastric parietal cells

Deficiency state:
>Lack of intrinsic factor due to autoimmune atrophic gastritis
>Mal-absorption due to gastrostomy
>Inflammatory bowel disease
>Dietary deficiency (strict vegans)
>Vit B12 deficiency results in megaloblastic anaemia, peripheral neuropathy, dementia and depression

Increased levels:
>VIT B12 supplement intake
>Polycythaemia Vera.

Vitamin D, 25-Hydroxy

Vitamin D, 25-Hydroxy (ECLIA)	**5.6**	L	ng/ml	Deficient: <=20 Insufficiency: 20-29 Desirable: >=30-100 Toxicity: >100

Interpretation:

Vitamin D is a fat soluble vitamin produced in the skin by exposure to sun light. Deficiency in children causes rickets and in adults leads to osteomalacia

Decreased levels:
>Impaired cutaneous production (lack of sunlight exposure)
>Dietary absence
>Malabsorption
>Increased metabolism due to drugs like barbiturates, phenytoin.
>Liver disease
>Renal failure
>VIT D receptor mutation

Increased levels:
>Vitamin D intoxication due to increased vit D supplements intake

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Am-Fit Shubh Health				
Ferritin				
Ferritin (ECLIA)	44.50		ng/mL	30-400

Interpretation:

Ferritin is iron storage protein. Determination of ferritin is necessary in iron deficiency anemia , monitoring iron therapy and in differential diagnosis of anemia

Elevation levels seen in

Hemochromatosis
Porphyria
Rheumatoid arthrosis
Leukaemia
Hodgkin's lymphoma
Liver disease
Multiple blood transfusion
Acute phase reactant
Increased in all inflammatory condition

Decreased level

Iron deficiency anemia

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Am-Fit Shubh Health				
Iron Binding Capacity - Total (TIBC)				
Iron (FerroZine Colorimetric Assay)	**53.5**	L	µg/dL	59-158
Unsaturated Iron Binding Capacity (UIBC) (Direct determination with FerroZine)	248.1		µg/dL	125 - 345
Iron Binding Capacity - Total (TIBC) (Calculation)	301.6		µg/dL	228-428
Transferrin Saturation Index (TSI) (Calculation)	18.0			16-45

----- End Of Report -----

Dr.Sanjeeta
Consultant- Biochemist

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Consultant Pathologist
MBBS DNB(Pathology)

Disclaimer:
1. All results released pertain to the specimen as received by the lab for testing and under the assumption that the patient indicated or identified on the bill/test requisition form is the owner of the specimen.
2. Clinical details and consent forms, especially in Genetic testing, histopathology, as well as wherever applicable, are mandatory to be accompanied with the test requisition form. The non-availability of such information may lead to delay in reporting as well as misinterpretation of test results. The lab will not be responsible for any such delays or misinterpretations thereof.
3. Test results are dependent on the quality of the sample received by the lab. In case the samples are preprocessed elsewhere (e.g., paraffin blocks), results may be compromised.
4. Tests are performed as per the schedule given in the test listing and in any unforeseen circumstances, report delivery may be affected.
5. Test results may show inter-laboratory as well as intra-laboratory variations as per the acceptable norms.
6. Genetic reports as well as reports of other tests should be correlated with clinical details and other available test reports by a qualified medical practitioner. Genetic counselling is advised in genetic test reports by a qualified genetic counsellor, medical practitioner or both.
7. Samples will be discarded post processing after a specified period as per the laboratory's retention policy. Kindly get in touch with the lab for more information.
8. If accidental damage, loss, or destruction of the specimen is not attributable to any direct or negligent act or omission on the part of Ampath Labs or its employees, Ampath shall in no event be liable. Ampath lab's liability for a lack of services, or

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other mistakes and omissions, shall be restricted to the amount of the patient's payment for the pertinent laboratory services.