SAMIT KARIA 18 Suyojana Society Lane No 18 Koregaon Park Pune Tel No: 919822034050 PID: 194444 Age:40.30 Years Sex:MALE	**Reference:Dr.--**	**SID: 121090964** **121090964** Collection Date: 02-06-2021 09:30 AM Sample Date: 02-06-2021 11:31 am Report Date: 02-06-2021 03:54 PM

REPORT

Complete Blood Count	**Result**	**Biological Reference Interval**
(EDTA Whole Blood)		
Hemoglobin (Hb), EDTA whole blood	**14.70**	14.0 - 17.50 g/dL
Method: Photometry		
Total Leucocytes (WBC) count	**8,300**	4000-10000/µL
Method : Coulter Principle / Microscopy		
Platelet count	**266,000**	150000 - 450000 /µL
Method : Coulter Principle / Microscopy		
Red blood cell (RBC) count	**5.21**	4.52 - 5.90 x 10^6 /µL
Method: Coulter Principle		
PCV (Packed Cell Volume)	**42.90**	41.5 - 50.4 %
Method: Calculated		
MCV (Mean Corpuscular Volume)	**82.30**	80.0 - 96.0 fL
Method: Derived from RBC histogram		
MCH (Mean Corpuscular Hb)	**28.20**	27.5 - 33.2 pgms
Method: Calculated		
MCHC (Mean Corpuscular Hb Conc.)	**34.20**	33.4 - 35.5 g/dL
Method: Calculated		
RDW (RBC distribution width)	**13.60**	11.6 - 14.6 %
Method: Derived from RBC Histogram		
WBC Differential Count		
Method: VCSn / Microscopy / Calculated		
Neutrophils	**52**	40 - 80 %
Absolute Neutrophils	**4,316**	2000 - 7000 /µL
Eosinophils	**5**	1 - 6 %
Absolute Eosinophils	**415**	20 - 500 /µL
Basophils	**0**	0 - 2 %
Absolute Basophils	**0**	0 - 100 /µL
Lymphocytes	**37**	20 - 40 %
Absolute Lymphocytes	**3,071**	1000 - 3000 /µL
Monocytes	**6**	2 - 10 %
Absolute Monocytes	**498**	200 - 1000 /µL
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Complete Blood Count Findings

R.B.C. : **Normocytic, Normochromic**

W.B.C. : **No abnormality detected**

Platelets : **Adequate**

Remark : ON FOLLOW UP.

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REPORT

Test Desciption	Observed Value	Biological Reference Interval
Lipid Profile Maxi :		
Serum Appearance	**Clear**	
Cholesterol (Total), serum by Enzymatic method	**181**	Desirable : < 200 mg/dL Borderline high : 200 - 239 mg/dL High : >/= 240 mg/dL
Triglycerides, serum by Enzymatic method	**142**	Normal : < 150 mg/dL Borderline high : 150-199 mg/dL High : 200-499 mg/dL Very high : >/= 500 mg/dL
HDL Cholesterol, serum by Enzymatic method	**39**	Men : > 40 mg/dL Women : > 50 mg/dL
VLDL Cholestrol, serum by calculation	**28**	< 30 mg/dL
LDL Cholesterol, serum by calculation	**114**	Optimal : <100 mg/dL Near optimal/above optimal : 100-129 mg/dL Borderline high : 130-159 mg/dL High : 160-189 mg/dL Very high : >/= 190 mg/dL
Cholesterol(Total)/HDL Cholesterol Ratio	**4.64**	Males : Acceptable ratio </= 5.00 Females : Acceptable ratio </= 4.50
LDL Cholesterol/HDL Cholesterol Ratio	**2.91**	Males : Acceptable ratio </= 3.60 Females : Acceptable ratio </= 3.20
Apolipoprotein A1, serum by Nephelometry	**139**	Male : 110 to 205 mg/dL
Apolipoprotein B, serum by Nephelometry	**99**	55 to 140 mg/dL

Reference : ATP III, NCEP Guidelines and National Lipid Association (NLA) 2014 Recommendations

As per most international and national guidelines including Lipid Association of India 2016 :

1. Lipoprotein and lipid levels should be considered in conjunction with other atherosclerotic cardiovascular disease (ASCVD) risk determinants to assess treatment goals and strategies.
2. Non-fasting lipid levels can be used in screening and in general risk estimation.

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REPORT

Test Description	Observed	Biological Reference Interval
Liver Function Test :		
Bilirubin-Total, serum by Diazo method	**0.84**	0.10 - 1.20 mg/dL Neonates : Upto 15.0 mg/dL
Bilirubin-Conjugated, serum by Diazo method	**0.30**	Upto 0.5 mg/dL
Bilirubin-Unconjugated, serum by calculation	**0.54**	0.1 to 1.0 mg/dL
SGOT (AST), serum by Enzymatic method	**26**	>or= 14 years : 8 - 48 U/Lt
SGPT (ALT), serum by Enzymatic Method	**30**	7 to 55 U/Lt
Alkaline Phosphatase,serum by pNPP-kinetic	**79**	Adult Male : (Unit : U/Lt.) 15 - < 17 years : 82 - 331 17 - < 19 years : 55 - 149 > or = 19 years : 40 - 129
Protein (total), serum by Biuret method	**7.25**	6.4 to 8.2 g/dL
Albumin, serum by Bromocresol purple method	**4.40**	3.4 to 5.0 g/dL
Globulin, serum by calculation	**2.85**	2.3 - 3.5 g/dL

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Test Description	Observed Value	Biological Reference Interval
TEST NAME		
Glycated Hemoglobin (HbA1C), by HPLC	**5.60**	4.0 to 5.6 %

Interpretation :
HbA1C level reflects the mean glucose concentration over previous 8-12 weeks and provides better indication of long term glycemic control.

For diagnosis of Diabetes Mellitus (>/= 18 yrs of age) :
5.7 % - 6.4 % : Increased risk for developing diabetes.
>/= 6.5 % : Diabetes

Therapeutic goals for glycemic control :
Adults : < 7%
Toddlers and Preschoolers : < 8.5% (but > 7.5 %)
School age (6-12 yrs) : < 8%
Adolescents and young adults (13 - 19 yrs) : < 7.5 %

Levels of HbA1C may be low as result of shortened RBC life span in case of hemolytic anemia.
Increased HbA1C values may be found in patients with polycythemia or post splenectomy patients.
Patients with Homozygous forms of rare variant Hb(CC,SS,EE,SC) HbA1c can not be quantitated as there is no HbA. In such circumstances glycemic control can be monitored using plasma glucose levels or serum Fructosamine.

The A1c target should be individualized based on numerous factors, such as age, life expectancy, comorbid conditions, duration of diabetes, risk of hypoglycemia or adverse consequences from hypoglycemia, patient motivation and adherence.

Ref : ADA (Standards of Medical Care in Diabetes - 2017)

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Test Description	Observed Value	Biological Reference Interval
Gamma Glutamyl Transferase (GGT)		
Gamma GT(GGT),Serum by Carboxy substrate-kinetic	**23.00**	Male : (Unit : U/Lt.) 13 - 17 years : < 43 >or= 18 years : 8 - 61

Interpretation

* GGT is used to diagnose and monitor hepatobiliary diseases.
* Increased GGT and Alkaline Phosphatase indicate hepatobiliary diseases.
* Normal GGT activity and increased Alkaline Phosphatase is consistent with skeletal disease.
* May be used a screening test for occult alcoholism.
* Elevated GGT is seen in :
  1) Intra or post hepatic biliary obstruction (5 to 30 times normal)
  2) Infectious hepatitis (2 to 5 times normal)
  3) Alcoholism
  4) Sclerosing cholangitis
  5) Primary or secondary neoplasm
  6) Medications such as phenytoin and phenobarbitone

Reference : Mayo Medical Laboratories, 2018 Interpretive Handbook.

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Test Description	Observed Value	Biological Reference Interval
Plasma Glucose :		
Plasma glucose fasting, by Hexokinase method	**87**	< 100 mg/dL 100 to 125 mg/dL : Impaired fasting glucose tolerance / Prediabetes >/= 126 mg/dL : Suggestive of diabetes mellitus (On more than one occasion) American Diabetes Association Guidelines 2020

Clinical Chemistry

Urea, serum by GLDH-urease	**20**	17 to 49 mg/dL
BUN-Blood Urea Nitrogen,serum by calculation	**9.35**	8 to 23 mg/dL
Creatinine, serum by Jaffe w/o deproteinization	**0.79**	0.6 to 1.2 mg/dL
Uric Acid, serum by Uricase method	**6.70**	Male : 3.50 to 7.20 mg/dL

** Uric acid is useful for 1. Diagnosis and follow up of renal failure. 2. Monitoring patients receiving cytotoxic drugs and a variety of other disorders, including gout, leukemia, psoriasis, starvation and other wasting conditions . * Increased uric acid is seen in following conditions : 1. Increased purine synthesis 2. Inherited metabolic disorders 3. Excess dietary purine intake 4. Increased nucleic acid turnover 5. Malignancy, cytotoxic drugs 6. Decreased urinary excretion (due to CRF) 7. Increased renal reabsorption . * Uric acid is decreased in : 1. Hepatocellular disease with reduced purine synthesis 2. Defective renal reabsorption 3. Overtreatment of uricemia (allopurinol or cancer therpies like 6-mercaptopurine, etc).*

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Test Description	Observed Value	Biological Reference Interval
Clinical Chemistry :		
Calcium, serum by OCPC method	**9.00**	Adult : 8.4 to 10.2 mg/dL

Method : Colorimetric (o-cresolpthalein substrate) .
1. Calcium is useful for diagnosis and monitoring of a wide range of disorders including diseases of bone, kidney, parathyroid gland, or gastrointestinal tract .
2. Calcium ions play an important role in blood clotting, bone mineralization, musculature contractility and CNS functioning. .
3. Hypocalcemia is due to the absence or impaired function of the parathyroid glands or impaired vitamin-D synthesis. Chronic renal failure is also frequently associated with hypocalcemia due to decreased vitamin-D synthesis as well as hyperphosphatemia and skeletal resistance to the action of parathyroid hormone (PTH).
4. Hypercalcemia is mainly due to primary hyperparathyroidism (pHPT), and bone metastasis of carcinoma of the breast, thyroid gland, or lung. Severe hypercalcemia may result in cardiac arrhythmia.

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Test Description	Observed Value	Biological Reference Interval
Clinical Chemistry :		
Hormones		
Free T3, serum by CMIA	**2.65**	1.71 to 3.71 pg/mL
Free T4, serum by CMIA	**0.82**	0.71 to 1.85 ng/dL
TSH(Ultrasensitive), serum by CMIA	**1.25**	0.40 - 4.00 µIU/mL

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REPORT

Test Description	Observed Value	Biological Reference Interval
TEST NAME		
Vitamin B12, serum by CMIA	**271.0**	187 - 883 pg/mL

Interpretation :

1. Vitamin B12 (cobalamin) is necessary for hematopoiesis and normal neuronal function.

2. Vitamin B12 is decreased in

Decreased Serum B12
Pregnancy
Contraceptive hormones
Malabsorption
Ethanol ingestion
Smoking
Strict vegan diet
Pernicious anemia

3. Serum methylmalonic acid and homocysteine levels are also elevated in vitamin B12 deficiency states. Active B12 (Holotranscobalamin) is low in Vitamin B12 deficiency.

4. Please correlate in case of patients taking vitamin B12 supplementation.

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Test Description	Observed value	Biological Reference Interval
HOMA Index Insulin Resistance Test		
Plasma glucose fasting, by Hexokinase method	**85**	< 100 mg/dL 100 to 125 mg/dL : Impaired fasting glucose tolerance / Prediabetes >/= 126 mg/dL : Suggestive of diabetes mellitus (On more than one occasion) American Diabetes Association Guidelines 2020
Insulin Fasting, Serum by CMIA	**16.80**	Fasting : 2.5 to 25 µU/mL Peak upto 150 µU/mL
HOMA IR Index	**3.61**	> 2.5 indicates insulin resistance

Interpretation

1. As, the direct measurement of the insulin effect on the blood sugar concentration is not possible other indices are used for determining an insulin resistance.
2. One of the most common indices is the HOMA index (Homeostasis Model Assessment), which is calculated according to the following formula:
   HOMA index = fasting insulin (µU/ml) X fasting blood sugar (mg/dl) /405
3. Indications :
   * Adiposis (BMI > 28 kg/m²)
   * Suspected insulin resistance (metabolic syndrome, diabetes mellitus type 2)
   * Suspected polycystic ovary syndrome (PCO-S)
   * Cycle disturbances (e. g. amenorrhea)
   * Infertility
4. Reference ranges :
   > 2.0 indication for insulin resistance
   > 2.5 insulin resistance probable
   > 5.0 average value in patients with diabetes mellitus type 2

Reference : https://www.bioscientia.de/en/files/2011/10/Marker

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"Accreditation as per ISO 15189:2012, Cert.No. MC-3143. Refer scope@ www.nabl-india.org"

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REPORT

Test Description	Observed Value	Biological Reference Interval
TEST NAME		
25 - OH Vitamin D, serum by CMIA	**18.90**	Severe deficiency : < 10 ng/mL Mild to moderate deficiency : 10 to 19 ng/mL Optimum levels : 20 to 50 ng/mL Increased risk of hypercalciuria: 51 to 80 ng/mL Toxicity possible : > 80 ng/mL Ref. : Mayo Medical Laboratories These reference ranges represent clinical decision values, based on the 2011 Institute of Medicine report

Interpretation :

Vitamin D is vital for strong bones. It also has important, emerging roles in immune function and cancer prevention.

Vitamin D compounds in the body are exogenously derived by dietary means; from plants as 25-hydroxyvitamin D2 (ergocalciferol or calciferol) or from animal products as 25-hydroxyvitamin D3 (cholecalciferol or calcidiol).

Vitamin D may also be endogenously derived by conversion of 7-dihydrocholesterol to 25-hydroxyvitamin D3 in the skin upon ultraviolet exposure.

The total 25-hydroxyvitamin D (25-OH-VitD) level (the sum of 25-OH-vitamin D2 and 25-OH-vitamin D3) is the appropriate indicator of vitamin D body stores.

Patients with renal failure can have very high 25-OH-VitD levels without any signs of toxicity, as renal conversion to the active hormone 1,25-OH-VitD is impaired or absent.

Kindly corelate clinically, with supplementation history & repeat with fresh sample if necessary.

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Urine Routine Examination	Result	Biological Reference Interval
(Sample : Urine, Automated / Semiautomated)		
Physical		
Quantity Examined	**Not received**	ml
Method : Visual		
Appearance	-	-
Method : Visual / Automated		
Colour	-	-
Method : Visual / Automated		
Chemical (Dipstick)		
pH	-	4.6 - 8.0
Method : Indicator Principle		
Protein	-	Absent
Method : Sulphosalycylic Acid/ pH Indicator		
Glucose	-	Absent
Method : GOD-POD / Benedict's		
Acetone	-	Absent
Method : Sodium Nitroprusside reaction		
Bile Pigments	-	Absent
Method : Diazo Reaction / Fouchet's test		
Urobilinogen	-	Not Significant
Method : Modified Ehrlich / Watson Schwartz		
Microscopy / Flow cytometry		
R.B.Cs	-	0 - 2 per hpf
Pus cells	-	0 - 5 per hpf
Epithelial cells	-	0 - 5 per hpf
Casts	-	-
Crystals	-	-
-	-	

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REPORT

Test Description	Observed Value	Biological Reference Interval
CRP(hs) - C- Reactive Protein high sensitivity	**3.91**	See clinical information below . Method : Nephelometry / Immunoturbidimetry

Clinical Information :

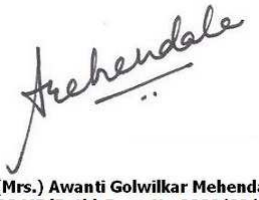
1. C-reactive protein (CRP) is a biomarker of inflammation. Plasma CRP concentrations increase rapidly and dramatically (100-fold or more) in response to tissue injury or inflammation.

2. High-sensitivity CRP (hs-CRP) is more precise than standard CRP when measuring baseline (i.e. normal) concentrations and enables a measure of chronic inflammation. It is recommended for cardiovascular risk assessment. Atherosclerosis is an inflammatory disease and hs-CRP has been endorsed by multiple guidelines as a biomarker of atherosclerotic cardiovascular disease risk.

Low cardiovascular risk : < 2.0 mg/L
High cardiovascular risk : >/= 2.0 mg/L
Acute inflammation : > 10.0 mg/L

3. A single test for high-sensitivity CRP (hs-CRP) may not reflect an individual patient's basal hs-CRP level. Repeat measurement may be required to firmly establish an individual's basal hs-CRP concentration. The lowest of the measurements should be used as the predictive value.

Reference : Mayo Medical Laboratories



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REPORT

Test Description	Observed Value	Biological Reference Interval
Anti SARS-CoV-2 spike protein (S1/S2) IgG	**Positive (184)**	Negative : < 12.0 AU/mL Equivocal : >/=12.0 to < 15.0 AU/mL Positive : >/= 15.0 AU/mL Sample : Serum / Plasma Method : CLIA

Remarks :

* Assay is quantitative determination of SARS-CoV-2 IgG antibodies against S1/S2 spike protein.

* Assay provides an indication of the presence of neutralising IgG antibodies against SARS-CoV-2, thus of protective immunity.

* SARS-CoV-2 IgG antibodies usually appear after 2-3 weeks (14-21 days) of infection or 2 weeks post second dose of vaccination.

* Helpful to detect post vaccination immune response to all types of COVID-19 vaccines.

AU/mL	Results	Retest rules and interpretation
< 12.0	Negative	No retest is required. A negative result may indicate the absence or a very low level of IgG antibodies to the pathogen. The test could score negative in infected patients during the incubation period and in the early stages of inection.
>/=12 to < 15	Equivocal	A second sample should be collected and tested no less than one to two weeks later when the result is equivocal.
>/= 15	Positive	No retest is required. A positive result generally indicates exposure of the subject to the pathogen or post vaccination immune respone.

** SARS-CoV-2 IgG test is not useful for diagnosis of acute infection.

Reference : 1. ICMR Advisory dated 23/06/2020
2. Kit insert

End of Report

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