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S02 - PSC GGN II HOME VISIT
SF-103, 1ST FLR, GALLERIA MKT, DLF PHASE -IV, PIN CODE NO : 122001
GURGAON

NABL ACCREDITED MC-2133

Name	: **Mr. DAKSH BHANDARI**			**Collected**	: **5/3/2020 8:36:00AM**
Lab No.	: **282468144**	**Age: 29 Years**	**Gender: Male**	**Received**	: **5/3/2020 9:58:46AM**
				Reported	: **5/3/2020 7:44:20PM**
A/c Status	: **P**	**Ref By : SELF**		**Report Status**	: **Final**

Test Name	Results	Units	Bio. Ref. Interval
LIPID PROFILE, BASIC, SERUM (Spectrophotometry, Calculated)			
Cholesterol Total	187.00	mg/dL	<200.00
Triglycerides	104.00	mg/dL	<150.00
HDL Cholesterol	**37.40**	mg/dL	>40.00
LDL Cholesterol,Direct	**127.00**	mg/dL	<100.00
VLDL Cholesterol	22.60	mg/dL	<30.00
Non-HDL Cholesterol	**149.60**	mg/dL	<130.00

Interpretation

NATIONAL LIPID ASSOCIATION RECOMMENDATIONS (NLA-2014)	TOTAL CHOLESTEROL in mg/dL	TRIGLYCERIDE in mg/dL	LDL CHOLESTEROL in mg/dL	NON HDL CHOLESTEROL in mg/dL
Optimal	<200	<150	<100	<130
Above Optimal	-	-	100- 129	130 - 159
Borderline High	200-239	150-199	130-159	160 - 189
High	>=240	200-499	160-189	190 - 219
Very High	-	>=500	>=190	>=220

Note

1. Measurements in the same patient can show physiological& analytical variations. Three serial samples 1 week apart are recommended for Total Cholesterol, Triglycerides, HDL& LDL Cholesterol.
2. As per NLA-2014 guidelines, all adults above the age of 20 years should be screened for lipid status.

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Test Name	Results	Units	Bio. Ref. Interval

Selective screening of children above the age of 2 years with a family history of premature cardiovascular disease or those with at least one parent with high total cholesterol is recommended.

3. Low HDL levels are associated with increased risk forAtherosclerotic Cardiovascular disease (ASCVD) due to insufficient HDL being available to participate in reverse cholesterol transport, the process by which cholesterol is eliminated from peripheral tissues.
4. NLA-2014identifies Non HDL Cholesterol(an indicator of all atherogeniclipoproteins such as LDL , VLDL, IDL, Lpa, Chylomicron remnants)along with LDL-cholesterol as co- primary target for cholesterol lowering therapy. Note that major risk factors can modify treatment goals for LDL &Non HDL.
5. Apolipoprotein B is an optional, secondary lipid target for treatment once LDL & Non HDL goals have been achieved.
6. Additional testing for Apolipoprotein B, hsCRP,Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement

Treatment Goals as per Lipid Association of India 2016

	CONSIDER THERAPY		TREATMENT GOAL	
RISK CATEGORY	LDL CHOLESTEROL (LDL-C)(mg/dL)	NON HDL CHLOESTEROL (NON HDL-C) (mg/dL)	LDL CHOLESTEROL (LDL-C)(mg/dL)	NON HDL CHLOESTEROL (NON HDL-C) (mg/dL
Very High	>=50	>=80	<50	<80
High	>=70	>=100	<70	<100
Moderate	>=100	>=130	<100	<130
Low	>=130*	>=160*	<100	<130

*In low risk patient, consider therapy after an initial non-pharmacological intervention for at least 3 months

LIVER PANEL 1; LFT,SERUM
(Spectrophotometry)

AST (SGOT)	21	U/L	<50
ALT (SGPT)	23	U/L	<50

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Test Name	Results	Units	Bio. Ref. Interval
AST:ALT Ratio	0.91		<1.00
GGTP	24	U/L	<55
Alkaline Phosphatase (ALP)	117	U/L	30 - 120
Bilirubin Total	0.99	mg/dL	0.30 - 1.20
Bilirubin Direct	0.18	mg/dL	<0.30
Bilirubin Indirect	0.81	mg/dL	<1.10
Total Protein	6.59	g/dL	6.40 - 8.30
Albumin	4.08	g/dL	3.50 - 5.20
A : G Ratio	1.63		0.90 - 2.00

Note

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.
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.

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Test Name	Results	Units	Bio. Ref. Interval
KIDNEY PANEL; KFT,SERUM (Spectrophotometry, Indirect ISE)			
Urea	21.60	mg/dL	17.00 - 43.00
Creatinine	1.03	mg/dL	0.67 - 1.17
Uric Acid	**8.33**	mg/dL	3.50 - 7.20
Calcium, Total	8.98	mg/dL	8.80 - 10.60
Phosphorus	3.45	mg/dL	2.40 - 4.40
Alkaline Phosphatase (ALP)	117	U/L	30 - 120
Total Protein	6.59	g/dL	6.40 - 8.30
Albumin	4.08	g/dL	3.50 - 5.20
A : G Ratio	1.63		0.90 - 2.00
Sodium	140.00	mEq/L	136.00 - 146.00
Potassium	4.73	mEq/L	3.50 - 5.10
Chloride	105.00	mEq/L	101.00 - 109.00

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Test Name	Results	Units	Bio. Ref. Interval
HbA1c (GLYCOSYLATED HEMOGLOBIN), BLOOD (HPLC)			
HbA1c	4.9	%	
Estimated average glucose (eAG)	94	mg/dL	

Interpretation

As per American Diabetes Association (ADA)	
Reference Group	HbA1c in %
Non diabetic adults >=18 years	4.0 - 5.6
At risk (Prediabetes)	5.7 - 6.4
Diagnosing Diabetes	>= 6.5
Therapeutic goals for glycemic control	. Goal of therapy: < 7.0 . Action suggested: > 8.0

Note

1. Since HbA1c reflects long term fluctuations in the blood glucose concentration, a diabetic patient who is recently under good control may still have a high concentration of HbA1c. Converse is true for a diabetic previously under good control but now poorly controlled
2. Target goals of < 7.0 % may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targeting a goal of < 7.0 % may not be appropriate
3. Any condition that shortens erythrocyte survival such as sickle cell disease, pregnancy (second and third trimesters), hemodialysis, recent blood loss or transfusion, or erythropoietin will falsely lower HbA1c results regardless of the assay method
4. In patients with HbA1c level between 7-8%, Glycemark (1,5 Anhydroglucitol) test may be done to identify those with more frequent and extreme hyperglycemic excursions

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Test Name	Results	Units	Bio. Ref. Interval

Comments

HbA1c provides an index of average blood glucose levels over the past 8 - 12 weeks and is a much better indicator of long term glycemic control as compared to blood and urinary glucose determinations. This single test can be used both for diagnosing & monitoring diabetes. ADA recommends measurement of HbA1c 3-4 times per year in Type 1 diabetes and poorly controlled Type 2 diabetes patients. In well controlled Type 2 diabetes patients, the test can be performed twice a year.

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Test Name	Results	Units	Bio. Ref. Interval
HEMOGRAM (DC Detection, Flow Cytometry, SLS, & Capillary photometry)			
Hemoglobin	15.70	g/dL	13.00 - 17.00
Packed Cell Volume (PCV)	47.30	%	40.00 - 50.00
RBC Count	5.08	mill/mm3	4.50 - 5.50
MCV	93.10	fL	80.00 - 100.00
MCH	30.90	pg	27.00 - 32.00
MCHC	33.20	g/dL	32.00 - 35.00
Red Cell Distribution Width (RDW)	12.10	%	11.50 - 14.50
Total Leukocyte Count (TLC)	6.62	thou/mm3	4.00 - 10.00
Differential Leucocyte Count (DLC)			
Segmented Neutrophils	54.40	%	40.00 - 80.00
Lymphocytes	33.10	%	20.00 - 40.00
Monocytes	8.80	%	2.00 - 10.00
Eosinophils	3.20	%	1.00 - 6.00
Basophils	0.50	%	<2.00
Absolute Leucocyte Count			
Neutrophils	3.60	thou/mm3	2.00 - 7.00
Lymphocytes	2.19	thou/mm3	1.00 - 3.00
Monocytes	0.58	thou/mm3	0.20 - 1.00
Eosinophils	0.21	thou/mm3	0.02 - 0.50
Basophils	0.03	thou/mm3	0.01 - 0.10
Platelet Count	252.0	thou/mm3	150.00 - 450.00

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Test Name	Results	Units	Bio. Ref. Interval
Mean Platelet Volume (MPV)	10.30	fL	6.50 - 12.00
ESR	7	mm/hr	0 - 15

Note

1. 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

2. Test conducted on EDTA whole blood

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Test Name	Results	Units	Bio. Ref. Interval
CORTISOL, MORNING, SERUM @ (CLIA)	7.67	µg/dL	4.30 - 22.40

Note: Cortisol is best measured in the morning when evaluating for possible Adrenal Insufficiency and best measured in the afternoon or evening to differentiate normal and Cushings Syndrome subjects. Diurnal rhythmicity of cortisol is increased by systemic disease and stress.

Clinical Use

* Direct assessment of Adrenal function

Increased levels: Cushings Syndrome, Ectopic ACTH syndrome, Ectopic CRH syndrome, Adrenal adenoma / carcinoma, Adrenal micronodular dysplasia, Adrenal macronodular hyperplasia, Stress

Decreased Levels - Addisons disease, Pituitary dysfunction

GLUCOSE, FASTING (F), PLASMA (Hexokinase)	83.00	mg/dL	70.00 - 100.00
FERRITIN, SERUM (CLIA)	183.70	ng/mL	22.00 - 322.00

Note: Increase in serum ferritin due to inflammatory conditions (Acute phase response) can mask a diagnostically low result

Comments

Serum ferritin appears to be in equilibrium with tissue ferritin and is a good indicator of storage iron in normal subjects and in most disorders. In patients with some hepatocellular diseases, malignancies and inflammatory diseases, serum ferritin is a disproportionately high estimate of storage iron because serum ferritin is an acute phase reactant. In such disorders iron deficiency anemia may exist with a normal serum ferritin concentration. In the presence of inflammation, persons with low serum ferritin are likely to respond to iron therapy.

Increased Levels

- Iron overload - Hemochromatosis, Thalassemia & Sideroblastic anemia
- Malignant conditions - Acute myeloblastic & Lymphoblastic leukemia, Hodgkin's disease & Breast carcinoma

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Test Name	Results	Units	Bio. Ref. Interval

- Inflammatory diseases - Pulmonary infections, Osteomyelitis, Chronic UTI, Rheumatoid arthritis, SLE, burns
- Acute & Chronic hepatocellular disease

Decreased Levels
Iron deficiency anemia

GROWTH HORMONE, SERUM @ (CLIA)	<0.05	ng/mL	0.00 - 4.00

Note: Secretion of Growth hormone is episodic, pulsatile and transient levels upto 40 ng/mL have been observed in healthy subjects. A single growth hormone measurement cannot distinguish normal fluctuation from low / high concentrations seen in disease states. Growth hormone measurements are best determined as part of dynamic testing using provocative stimuli to stimulate or suppress growth hormone release.

Clinical Use

- Assess pituitary growth hormone disorders

Increased Levels

- Gigantism
- Acromegaly
- Selected pituitary tumors
- Some cases of pregnancy
- Laron dwarfism (GH resistance)

Decreased Levels

- Pituitary GH deficiency
- Hypopituitarism, congenital or acquired GH secretory dysfunction

IMMUNOGLOBULIN PROFILE, SERUM @ (Immunoturbidimetry)			
Immunogloublin IgG, Serum	1116.00	mg/dL	700.00 - 1600.00

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Test Name	Results	Units	Bio. Ref. Interval
Immunogloublin IgM, Serum	65.00	mg/dL	40.00 - 230.00
Immunogloublin IgA, Serum	162.00	mg/dL	70.00 - 400.00

Comments:

Approximately 80% of serum immunoglobulin is IgG, 6% is IgM and 13% is IgA. High levels of IgM signify acute infections whereas IgG predominates in chronic infections. IgA is the predominant immunoglobulin in body secretions like saliva, sweat and colostrums.

Polyclonal increases are seen in:

IgG: SLE, Chronic liver diseases, Infectious diseases and Cystic fibrosis

IgM: Viral, bacterial and parasitic infections, Liver diseases, Rheumatoid arthritis, Scleroderma, Cystic fibrosis & heroin addiction

IgA: Chronic liver diseases, Chronic infections, Autoimmune disorders, Sarcoidosis and Wiscott-Aldrich syndrome.

Monoclonal increases are seen in IgG & IgA Myelomas and IgM increases in cases of Waldenstroms macroglobulinemia

Decreased synthesis of IgG, IgM & IgA is seen in Congenital and Acquired Immunodeficiency diseases.

Decreased levels are seen in Protein losing enteropathies, Nephrotic syndrome and skin burns.

IRON STUDIES, SERUM
(Spectrophotometry)

Iron	125.00	µg/dL	65.00 - 175.00
Total Iron Binding Capacity (TIBC)	288.00	µg/dL	250.00 - 425.00
Transferrin Saturation	43.40	%	20.00 - 50.00

Comments

Iron is an essential trace mineral element which forms an important component of hemoglobin, metallocompounds and Vitamin A. Deficiency of iron, leads to microcytic hypochromic anemia. The toxic

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Test Name	Results	Units	Bio. Ref. Interval

effects of iron are deposition of iron in various organs of the body and hemochromatosis.

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. In iron deficiency anemia, serum iron is reduced and TIBC increases.

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.

TESTOSTERONE, TOTAL, SERUM @ (CLIA)	453.06	ng/dL	164.94 - 753.38

THYROID PROFILE, FREE, SERUM (Chemiluminescent Immunoassay)			
T3, Free; FT3	2.91	pg/mL	2.30 - 4.20
T4, Free; FT4	1.05	ng/dL	0.89 - 1.76
TSH, Ultrasensitive	1.104	uIU/mL	0.550 - 4.780

Note

1. 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.

2. TSH Values <0.03 uIU/mL need to be clinically correlated due to presence of a rare TSH variant in some individuals

Clinical Use

- Primary Hypothyroidism
- Hyperthyroidism
- Hypothalamic - Pituitary hypothyroidism
- Inappropriate TSH secretion
- Nonthyroidal illness
- Autoimmune thyroid disease

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Test Name	Results	Units	Bio. Ref. Interval
• Pregnancy associated thyroid disorders • Thyroid dysfunction in infancy and early childhood			
VITAMIN B12; CYANOCOBALAMIN, SERUM (CLIA)	**168.00**	pg/mL	211.00 - 911.00

Notes

1. Interpretation of the result should be considered in relation to clinical circumstances.
2. It is recommended to consider supplementary testing with plasma Methylmalonic acid (MMA) or plasma homocysteine levels to determine biochemical cobalamin deficiency in presence of clinical suspicion of deficiency but indeterminate levels. Homocysteine levels are more sensitive but MMA is more specific
3. The concentration of Vitamin B12 obtained with different assay methods cannot be used interchangeably due to differences in assay methods and reagent specificity

Comments

Vitamin B12 performs many important functions in the body, but the most significant function is to act as co-enzyme for reducing ribonucleotides to deoxyribonucleotides, a step in the formation of genes. Inadequate dietary intake is not the commonest cause for cobalamine deficiency. The most common cause is malabsorption either due to atrophy of gastric mucosa or diseases of terminal ileum. Cobalamine deficiency leads to Megaloblastic anemia and demyelination of large nerve fibres of spinal cord. Normal body stores are sufficient to last for 3-6 years. Sources of Vitamin B12 are liver, shellfish, fish, meat, eggs, milk, cheese & yogurt.

Decreased Levels

- **Lack of Intrinsic factor:** Total or partial gastrectomy, Atrophic gastritis, Intrinsic factor antibodies
- **Malabsorption**: Regional ileitis, resected bowel, Tropical Sprue, Celiac disease, pancreatic insufficiency, bacterial overgrowth & achlorhydria
- **Loss of ingested vitamin B12:** fish tapeworm
- **Dietary deficiency:** Vegetarians
- **Congenital disorders:** Orotic aciduria & transcobalamine deficiency
- **Increased demand**: Pregnancy specially last trimester

Increased Levels

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Test Name	Results	Units	Bio. Ref. Interval
Chronic renal failure, Congestive heart failure, Acute & Chronic Myeloid Leukemia, Polycythemia vera, Carcinomas with liver metastasis, Liver disease, Drug induced cholestasis & Protein malnutrition			
VITAMIN D, 25 - HYDROXY, SERUM (Chemiluminescence)	30.42	nmol/L	

Interpretation

LEVEL	REFERENCE RANGE IN nmol/L	COMMENTS
Deficient	< 50	High risk for developing bone disease
Insufficient	50-74	Vitamin D concentration which normalizes Parathyroid hormone concentration
Sufficient	75-250	Optimal concentration for maximal health benefit
Potential intoxication	>250	High risk for toxic effects

Note

- The assay measures both D2 (Ergocalciferol) and D3 (Cholecalciferol) metabolites of vitamin D.
- 25 (OH)D is influenced by sunlight, latitude, skin pigmentation, sunscreen use and hepatic function.
- Optimal calcium absorption requires vitamin D 25 (OH) levels exceeding 75 nmol/L.
- It shows seasonal variation, with values being 40-50% lower in winter than in summer.
- Levels vary with age and are increased in pregnancy.
- A new test Vitamin D, Ultrasensitive by LC-MS/MS is also available

Comments

Vitamin D promotes absorption of calcium and phosphorus and mineralization of bones and teeth. Deficiency in children causes Rickets and in adults leads to Osteomalacia. It can also lead to Hypocalcemia and Tetany. Vitamin D status is best determined by measurement of 25 hydroxy vitamin D, as it is the major circulating form and has longer half life (2-3 weeks) than 1,25 Dihydroxy vitamin D (5-8 hrs).

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SF-103, 1ST FLR, GALLERIA MKT, DLF PHASE -IV, PIN CODE NO : 122001
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NABL ACCREDITED MC-2133

Name	: Mr. DAKSH BHANDARI			**Collected**	: 5/3/2020 8:36:00AM
				Received	: 5/3/2020 9:58:46AM
Lab No.	: 282468144	**Age:** 29 Years	**Gender:** Male	**Reported**	: 5/3/2020 7:44:20PM
A/c Status	: P	**Ref By :** SELF		**Report Status**	: Final

Test Name	Results	Units	Bio. Ref. Interval

Decreased Levels

- Inadequate exposure to sunlight
- Dietary deficiency
- Vitamin D malabsorption
- Severe Hepatocellular disease
- Drugs like Anticonvulsants
- Nephrotic syndrome

Increased levels

Vitamin D intoxication

Dr.Kamal Modi
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DNB, Pathology
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----------End of report ----------

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S02 - PSC GGN II HOME VISIT
SF-103, 1ST FLR, GALLERIA MKT, DLF PHASE
-IV, PIN CODE NO : 122001
GURGAON

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MC-2133

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Test Name	Results	Units	Bio. Ref. Interval

IMPORTANT INSTRUCTIONS

*Test results released pertain to the specimen submitted.*All test results are dependent on the quality of the sample received by the Laboratory. *Laboratory investigations are only a tool to facilitate in arriving at a diagnosis and should be clinically correlated by the Referring Physician .*Sample repeats are accepted on request of Referring Physician within 7 days post reporting.*Report delivery may be delayed due to unforeseen circumstances. Inconvenience is regretted.*Certain tests may require further testing at additional cost for derivation of exact value. Kindly submit request within 72 hours post reporting.*Test results may show interlaboratory variations.*The Courts/Forum at Delhi shall have exclusive jurisdiction in all disputes/claims concerning the test(s) & or results of test(s).*Test results are not valid for medico legal purposes. *Contact customer care Tel No. +91-11-39885050 for all queries related to test results.
(#) Sample drawn from outside source.