LPL - FPSC VERMA DIAGNOSTIC CENTRE

NABL ACCREDITED MC-2113 | CAP ACCREDITED COLLEGE of AMERICAN PATHOLOGISTS | BSI REGISTERED ISO 9001: 2008 FS 60411 | bsi. ISO/IEC 27001 Information Security Management IS 616691

Name	: **Mr. NITESH GANDHI**			**Collected**	: **13/2/2019 9:39:00AM**
Lab No.	: **145148654**	**Age: 40 Years**	**Gender: Male**	**Received**	: **13/2/2019 9:55:05AM**
				Reported	: **13/2/2019 4:43:40PM**
A/c Status	: **P**	**Ref By : SELF**		**Report Status**	: **Final**

Test Name	Results	Units	Bio. Ref. Interval
SWASTHFIT VITAMIN PACKAGE			
VITAMIN B12; CYANOCOBALAMIN, SERUM (CLIA)	389.00	pg/mL	211.00 - 911.00

Notes

1. To differentiate vitamin B12 & folate deficiency, measurement of Methyl malonic acid & Homocysteine levels in serum is suggested

2. The diagnosis of B12 deficiency cannot be solely based on serum B12 levels. Further testing for folic acid, intrinsic factor blocking antibodies, holotranscobalamin (active B12), homocysteine, and/or methylmalonic acid is suggested for symptomatic patients with hematological or neurological abnormalities

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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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 (CLIA)	**37.84**	nmol/L	75.00 - 250.00

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).

Decreased Levels

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Test Name	Results	Units	Bio. Ref. Interval

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

Increased levels

Vitamin D intoxication

THYROID PROFILE, FREE, SERUM (CLIA)			
T3, Free; FT3	3.64	pg/mL	2.30 - 4.20
T4, Free; FT4	1.27	ng/dL	0.89 - 1.76
TSH, Ultrasensitive	3.427	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
- Pregnancy associated thyroid disorders

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Test Name	Results	Units	Bio. Ref. Interval

- Thyroid dysfunction in infancy and early childhood

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Test Name	Results	Units	Bio. Ref. Interval
DIABETES PANEL BASIC (Hexokinase,HPLC, NGSP certified)			
Glucose, Fasting	100.00	mg/dL	70.00 - 100.00
HbA1c	5.5	%	
Estimated average glucose (eAG)	111	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

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 (Electrical Impendance & VCS, Capillary photometry,Photometry)			
Hemoglobin	17.00	g/dL	13.00 - 17.00
Packed Cell Volume (PCV)	49.80	%	40.00 - 50.00
RBC Count	**5.73**	mill/mm3	4.50 - 5.50
MCV	86.90	fL	80.00 - 100.00
MCH	29.70	pg	27.00 - 32.00
MCHC	34.10	g/dL	32.00 - 35.00
Red Cell Distribution Width (RDW)	12.30	%	11.50 - 14.50
Total Leukocyte Count (TLC)	7.06	thou/mm3	4.00 - 10.00
Differential Leucocyte Count (DLC)			
Segmented Neutrophils	52.10	%	40.00 - 80.00
Lymphocytes	37.00	%	20.00 - 40.00
Monocytes	8.60	%	2.00 - 10.00
Eosinophils	2.00	%	1.00 - 6.00
Basophils	0.30	%	<2.00
Absolute Leucocyte Count			
Neutrophils	3.68	thou/mm3	2.00 - 7.00
Lymphocytes	2.61	thou/mm3	1.00 - 3.00
Monocytes	0.61	thou/mm3	0.20 - 1.00
Eosinophils	0.14	thou/mm3	0.02 - 0.50
Basophils	0.02	thou/mm3	0.01 - 0.10
Platelet Count	196.0	thou/mm3	150.00 - 450.00
ESR	**17**	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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Dr Anand Chandrasekaran Annan
MD (American Board of Pathology)
PhD (Molecular & Cellular Pathology)
HOD - Oncopathology

Dr Himangshu Mazumdar
MD, Biochemistry
Consultant Biochemist
NRL - Dr Lal PathLabs Ltd

Dr Nimmi Kansal
MD, Biochemistry
National Head - Clinical Chemistry & Biochemical Genetics
NRL - Dr Lal PathLabs Ltd

Dr Anil Arora
MD, Pathology
HOD Hematology & Immunohematology
NRL - Dr Lal PathLabs Ltd

Dr Arvind Semalti
MD, Pathology
Consultant Pathologist
Dr Lal PathLabs Ltd

----------End of report ----------

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.