

REPORT

AMITA MUNOT
294 Sindh Society Aundh

Tel No: 919822033212
PID: 197499

Age: 64.11 Years Sex: FEMALE

Reference: Dr.--

SID: 120070173

Collection Date:

27-08-2020 09:55 AM

Sample Date:

27-08-2020 09:55 am

Report Date:

27-08-2020 04:16 PM

Test Description	Observed Value	Biological Reference Interval
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TEST NAME

Glycated Hemoglobin (HbA1C), by HPLC	5.90	4.0 to 5.6 %
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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
<u>Plasma Glucose :</u>		
Plasma glucose fasting, by Hexokinase method	89	< 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 2019
<u>Hormones</u>		
T3 (Total), serum by CMIA	0.99	0.64 to 1.52 ng/ml
T4 (Total), serum by CMIA	5.51	4.87 to 11.72 µg/dL
TSH(Ultrasensitive), serum by CMIA	2.75	For non pregnant female : 0.40 - 4.00 µIU/mL For pregnant female : 1st trimester : 0.1 - 2.5 µIU/mL 2nd trimester : 0.2 - 3.0 µIU/mL 3rd trimester : 0.3 - 3.0 µIU/mL Ref : American Thyroid Association guidelines 2017



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Test Description

Observed Value

Biological Reference Interval

Auto Immunity :

Microsomal (TPO) Antibody Titre,serum by CMIA

Negative (0.53)

Negative : < 5.61 IU/mL

Thyroglobulin autoantibodies bind thyroglobulin (Tg), a major thyroid-specific protein. Tg plays a crucial role in thyroid hormone synthesis, storage, and release. Follicular destruction through inflammation, hemorrhage, or rapid disordered growth of thyroid tissue can result in leakage of Tg into the blood stream. This results in the formation of autoantibodies to Tg (anti-Tg) in some individuals. The same processes also result in the formation of autoantibodies particularly Anti TPO. In individuals with autoimmune hypothyroidism, 30% to 50% will have detectable anti-Tg autoantibodies, while 50% to 90% will have detectable anti-TPO autoantibodies. In Graves disease, both types of autoantibodies are observed at approximately half these rates.



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Test Description

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Auto Immunity :

Thyroglobulin Antibody (ATA), serum by CMIA

Positive (31.33)

Negative : < 4.11 IU/mL

Thyroglobulin autoantibodies bind thyroglobulin (Tg), a major thyroid-specific protein. Tg plays a crucial role in thyroid hormone synthesis, storage, and release. Follicular destruction through inflammation, hemorrhage, or rapid disordered growth of thyroid tissue can result in leakage of Tg into the blood stream. This results in the formation of autoantibodies to Tg (anti-Tg) in some individuals. The same processes also result in the formation of autoantibodies particularly Anti TPO. In individuals with autoimmune hypothyroidism, 30% to 50% will have detectable anti-Tg autoantibodies, while 50% to 90% will have Anti-Tg values determined by different methodologies might detectable anti-TPO autoantibodies. In Graves disease, both types of autoantibodies are observed at approximately half these rates.



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Test Description Auto Immunity :

Observed Value

Biological Reference Interval

Kindly correlate clinically.



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Test Description	Observed Value	Biological Reference Interval
TEST NAME		

Vitamin B12, serum by CMIA	168.0	187 - 883 pg/mL
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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	89	< 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 2019
Insulin Fasting, Serum by CMIA	4.30	Fasting : 2.5 to 25 µU/mL Peak upto 150 µU/mL
HOMA IR Index	0.94	> 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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Test Description	Observed Value	Biological Reference Interval
TEST NAME		
25 - OH Vitamin D, serum by CMLA	8.30	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 correlate clinically, with supplementation history & repeat with fresh sample if necessary.



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CRP(hs) - C- Reactive Protein high sensitivity	4.55	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 : \geq 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

End of Report

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