TEST PERFORMED FOR

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006025
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
Referred By	:	BEWELL SERVICES	**Reported on**	:	28-09-2024 20:16
Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
Emirates ID / Passport No	:		**Print Version**	:	V.1

Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

GLYCATED HEMOGLOBIN (Hba1c)

Investigation	Results	Flag	Units	Biological Reference Interval	Method
Sample: EDTA Whole Blood					
GLYCATED HEMOGLOBIN (HbA1C) ^	5.9		%	<5.7 non-diabetic 5.7-6.4 Pre-Diabetic >6.4 Diabetic	HPLC
Average Blood Glucose	122.6		mg/dl	90-120 Good Control 121-150 Fair Control 151-180 Unsatisfactory Control >180 Poor Control	Calculated

Comments :

False elevated levels may be due to hypertriglyceridemia, iron deficiency anemia, B12 deficiency, vit C supplement usage, uremia, hemoglobinopathies. In such cases recommended to evaluate the value using alternative index like fructosamine, glycated albumin or continuous glucose monitoring

CLINICAL IMPLICATIONS:

1) Glycated hemoglobin reflects average blood sugar level for 2 to 3 month period and useful for evaluating diabetic medications and to track the control of blood glucose in milder cases.
2) Increase in Glycated hemoglobin occurs in non diabetic conditions like Iron deficiency anemia, splenectomy, alcohol toxicity. Decrease in Glycated Hemoglobin in hemolytic anemia, chronic blood loss, pregnancy and chronic renal failure.
3) Improvement in the glucose control occurring in the 4 weeks before drawing of the sample is not well reflected in the result since the formation of glycated haemoglobin is irreversible.

INTERFERING FACTORS:

1) Presence of HbF and HbH cause falsely elevated values.
2) Presence of Hb S, C, E, D, G and Lepore cause falsely decrease results.
3) If test results are not consistent with clinical finding check the patient for HbF which elevates HbA1c results.
4) Haemolytic blood samples may cause falsely low results because of increased erythrocyte turnover.

REFERENCE:

1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

- END OF REPORT -

"QLabs compliance with ISO 15189:2022 standards"

Verified By

Azar
Lab Technologist

DHA No 68682396-002

Authorised By

Dr. Dheepa Manoharan
Medical Director
Specialist Microbiologist
DHA No. 00231751-004

QLABS Clinical Laboratory Off No 304, Carrera Building, Karama +971 4 578 2223 info@qlabsonline.com

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006026
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
Referred By	:	BEWELL SERVICES	**Reported on**	:	28-09-2024 20:16
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Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
LIPID PROFILE TEST

Investigation	Results	Flag	Units	Biological Reference Interval	Method
CHOLESTEROL (TOTAL)	232	H	mg/dl	Desirable: < 200 Borderline High: 200-239 High: > 240	Enzymatic colorimteric assay
TRIGLYCERIDES	105		mg/dl	Normal Up to 150 Borderline-High 150-199 High 200-499 Very High > 500	Enzymatic colorimetric test
HDL CHOLESTEROL	43		mg/dl	High risk up to 40 Low risk > 60	Homogeneous Enzymatic Colorimetric
LDL CHOLESTEROL DIRECT	178	H	mg/dl	Optimal up to < 100 Near Optimal: 100-129 Borderline : 130-159 High: 160-189 Very High: > 190	Enzymatic, colorimetric method
VLDL CHOLESTEROL	21		mg/dl	10-35	Calculation
NON-HDL CHOLESTEROL	189	H	mg/dl	Desirable < 130 Borderline 130 – 159 High >159	Calculation
TOTAL CHOLESTEROL / HDL RATIO	5.4	H	--	< 4.5	Calculation
LDL / HDL RATIO	4.1		--	Low Risk < 3.0 Borderline 3.1-6.0 High Risk >6.0	Calculation

Interpretation Notes :

CLINICAL IMPLICATIONS:

1. Cholesterol testing evaluates the risk for atherosclerosis, myocardial occlusion, and coronary artery occlusion. Elevated cholesterol levels are a major component in the hereditary hyper lipoproteinemia. It is also used to monitor effectiveness of diet, medications, lifestyle, and stress management.
2.The cholesterol to HDL ratio provides more information than does either value alone. When a slightly increased cholesterol is due to high HDL, therapy is not indicated.
3. LDL cholesterol has a longer shelf life and determines the CHD risk.

INTERFERING FACTORS:

1. Seasonal and positional variations may alter cholesterol levels. Estrogens, ascorbic acid, bilirubin decrease the cholesterol levels .Pregnancy, bile salt, high saturated fat, and high cholesterol diet may increase the cholesterol values. Prolonged fasting with ketosis may increase the value.
2. Increased levels of HDL may be associated with estrogen therapy, drugs like steroids, alcohol and insulin therapy. Decreased levels are associated with stress, recent illness, starvation, obesity, smoking, hyper triglyceridemia, lack of exercise.
3. Increased LDL may be associated with pregnancy, drugs like steroids. Decreased LDL are found in women under estrogen therapy. No fasting may cause false elevation.

- END OF REPORT -

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Lab Technologist

DHA No 68682396-002

Authorised By
Dr. Dheepa Manoharan
Medical Director
Specialist Microbiologist
DHA No. 00231751-004

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006026
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
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Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
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Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
LIPID PROFILE TEST

Investigation	Results	Flag	Units	Biological Reference Interval	Method

4. A transient increase in triglycerides occurs following heavy meal, alcohol ingestion, pregnancy, acute illness like cold ,flu, obesity, physical inactivity ,smoking. Transient decrease occurs after strenuous exercise, weight loss.

RECOMMENDATION:

1. Cholesterol levels >200 mg/dl should be retested and the results averaged and if the results differ by > than 10%, a third test need to be done for confirmation. Perform a comprehensive lipoprotein analysis if cholesterol levels are not lowered within 6 months after start of therapy. If the values are altered in a normal condition, recommended to follow a stable diet for 1 week and overnight fasting (9 to 12 hours)before repeating the test.
2. Cholesterol and HDL should not be measured immediately after MI. A 3 month wait is suggested.
3. If triglyceride levels are more than 400mg/dl or >10.36mmol/L recommended to fast overnight(9 to 12 hours) and retest .Because of biological and analytical variation, at least 2 serial sample may be necessary for clinical decision making. VLDL cannot be calculated if triglycerides are more than 400mg/dl

REFERENCE: 1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

Sample: Serum

- END OF REPORT -

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Lab Technologist

DHA No 68682396-002

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Dr. Dheepa Manoharan
Medical Director
Specialist Microbiologist
DHA No. 00231751-004

TEST PERFORMED FOR

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006026
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
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Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
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Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
LIVER FUNCTION TEST

Investigation	Results	Flag	Units	Biological Reference Interval	Method
ALT / SGPT	28.8		U/L	10-50	IFCC with P5P
AST / SGOT	29		U/L	10-50	IFCC with P5P
ALP (ALKALINE PHOSPHATASE)	47		U/L	40-129	Colorimetric assay
GGT (GAMMA GLUTAMYL TRANSFERASE)	22		U/L	8-61	Enzymatic colorimetric assay
BILIRUBIN (TOTAL)	0.3		mg/dl	0.1-1.2	Diazo
BILIRUBIN (DIRECT)	0.11		mg/dl	0-0.3	Diazo
INDIRECT BILIRUBIN	0.19		mg/dl	0.00-1.1	Calculated Parameter
TOTAL PROTEIN	6.8		g/dl	6.6-8.7	Colorimetric assay
ALBUMIN (SERUM)	4.4		g/dl	3.97-4.94	Colorimetric assay
GLOBULIN	2.4		g/dl	2.35 - 3.5	Calculated Parameter
A/G RATIO	1.8			1.1-2.5	Calculated Parameter

Interpretation Notes :

CLINICAL IMPLICATIONS:

1) Total Bilirubin elevation accompanied by jaundice is due to hepatic, obstructive, hemolytic and blood group compatibility.

2) Increase albumin is associated with dehydration and decrease is due to acute and chronic inflammation, burns and heart failure.

3) Although AST levels always increase in acute MI, ALT level doesn't always increase unless there also liver damage.

4) ALT is usually increased more than AST in acute extra hepatic biliary obstruction.

5) ALT is more specific than AST for liver disease but AST is more sensitive to liver disease.

6) Alkaline phosphatase normal values are higher in pediatric patient and in pregnancy. Values may increase up to 3 times in puberty.

7) GGT is used to confirm biliary abnormality and is elevated in hepatobiliary disease but not in uncomplicated bone disease.

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Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
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Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
LIVER FUNCTION TEST

Investigation	Results	Flag	Units	Biological Reference Interval	Method

8) GGT values are higher in new born, first 3 to 6 month . Adult male have 25% higher values than female.

INTERFERING FACTORS:

1) Certain foods like carrots, yam, drugs, anorexia, prolonged fasting may falsely increase bilirubin level.

2) Albumin levels may reduce in pregnancy, over hydration, edema, drugs, obesity.

3) Young children, pregnant women, post-menopausal women have physiological high level of ALT. Alkaline phosphatase increase after fatty meal.

4) Slight reduce level of AST can be seen during pregnancy and false reduced level in severe liver disease.

REFERENCE: 1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

Sample: Serum

- END OF REPORT -

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DHA No. 00231751-004

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Emirates ID / Passport No	:		**Print Version**	:	V.1

Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
ANEMIA PROFILE

Investigation	Results	Flag	Units	Biological Reference Interval	Method
TRANSFERRIN SATURATION	20.4		%	10-50	Calculation
TOTAL IRON BINDING CAPACITY	304		µg/dL	250-450	Calculated
UNSATURATED IRON BINDING CAPACITY	242		ug/dL	125-345	Direct determination with FerroZine
IRON	62		µg/dl	33-193	Ferrozine-no deproteinization

Interpretation Notes :

TRANSFERRIN
CLINICAL IMPLECATIONS:
Higher transferrin saturation values are found in high iron states such as megaloblastic anemia,sideroblastic anemia and iron overload states. Decreased transferrin saturation is found in chronic iron deficiency, chronic infection, extensive malignancy, tissue inflammation states, uremia ,nephrotic syndrome
TIBC
CLINICAL IMPLICATIONS:
Increased TIBC is found in:
Iron deficiency, Pregnancy (late), Acute and chronic blood loss.
Decreased TIBC is observed in:
Hypoproteinemia (malnutrition and burns), Hemochromatosis, Non-iron-deficiency anemia (infection and chronic disease), Cirrhosis of liver, Nephrosis and other renal diseases, Thalassemia and Hyperthyroidism
UIBC
CLINICAL IMPLICATIONS:
Elevated unsaturated iron binding capacity (UIBC) may indicate
Iron deficiency in the diet and Inability to absorb iron
Decreased unsaturated iron binding capacity (UIBC) may indicate
Hemochromatosis, Chronic infection or illness, Hemolytic anemia, Sideroblastic anemia and Iron toxicity
IRON
CLINICAL IMPLICATIONS:
1.The combined results of iron, transferrin, and TIBC are helpful in the differential diagnosis of anemia ,in assessment of iron deficiency anemia and in the evaluation of thalassemia, sideroblastic anemia and haemochromatosis.
REFERENCE:1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

Sample: Serum

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Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
Referred By	:	BEWELL SERVICES	**Reported on**	:	29-09-2024 07:43
Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
Emirates ID / Passport No	:		**Print Version**	:	V.1

Department of BIOCHEMISTRY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
Advanced Renal Function Test

Investigation	Results	Flag	Units	Biological Reference Interval	Method
UREA (SERUM)	37		mg/dl	16.6-48.5	Kinetic test,Urease
CREATININE (SERUM)	0.83		mg/dl	0.7 - 1.2	Alkaline picrate
URIC ACID (SERUM)	3.64		mg/dl	3.4-7	Enzymatic colorimetric test
CALCIUM	8.93		mg/dL	8.6-10	NM-BAPTA
BLOOD UREA NITROGEN (SERUM)	17.3		mg/dl	6-20	Calculation
BUN/CREATININE RATIO	20.84		mg/dl	10-30	Calculation
EGFR (GLOMERULAR FILTRATION RATE)	95		mL/min/1.73 m2	Normal >90 Mildly decrease 60-80 Mildly to Moderate decrease 45-59 Moderately to Severely decrease 30-40 Severely decrease 15-29 Kidney failure < 15	Calculation

Interpretation Notes :

CLINICAL IMPLICATIONS:
1.A markedly increased BUN is conclusive of severe impaired glomerular function and in chronic renal disease BUN level correlates better with the symptoms of uremia than does the serum creatinine.2.Uric acid levels is used most commonly in the evaluation of renal failure ,gout, and leukemia. In gout the amount of increase is not directly related to the severity of the disease. Acute levels may occur following administration of cytotoxic drugs.
3.In chronic renal disease ,BUN/creatinine ratio is a better indicator to evaluate the renal problem than evaluating either alone. For each 50% reduction in GFR serum creatinine doubles. In chronic renal disease the plasma levels of creatinine may be more sensitive to changes in glomerular function than creatinine clearance ,which may be factitiously higher than the true value.
INTERFERING FACTORS:
1.A combination of low protein high carbohydrate diet ,late pregnancy (PHYSIOLOGIC HYDREMIA),IV feedings may cause a low levels of BUN.BUN is normally lower in children and women than adult. Elderly person can have an increased BUN levels. Many drugs like steroids ,tetracyclines, thyroxine, Stress, strenuous exercise may alter the values of BUN levels.
2. Creatinine is falsely decreased by bilirubin, glucose, histidine, quinidine compounds. Drugs like cephalosporins may alter the values. Lipemic and hemolyzed samples may cause a false elevations.
REFERENCE: 1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

Sample: Serum

- END OF REPORT -

"QLabs compliance with ISO 15189:2022 standards"

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Lab Technologist
DHA No 68682396-002

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DHA No. 00231751-004

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Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006025
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
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Department of HEMATOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
ADVANCE COMPLETE BLOOD COUNT

Investigation	Results	Flag	Units	Biological Reference Interval	Method
HEMOGLOBIN	13.8		g/dl	13-17	photometric
WBC COUNT	5.5		10^3/uL	4-11	Electrical Impedance
RBC COUNT	4.52		10^6/uL	4.5-5.5	Electrical Impedance
HEMATOCRIT	39.4	L	%	42-52	Calculation
MCV	87.3		fL	78-100	Calculation
MCH	30.6		pg	27-31	Calculation
MCHC	35.1	H	g/dl	31-35	Calculation
RDW	13.4		%	9.3-16	Calculation
RDW-SD	41.1		fL	38.9-49	Calculation
MPV	8.6	L	fL	8.8-12.5	Calculation
PLATELET COUNT	245		10^3/uL	150-400	Electrical Impedance
Neutrophil	57.4		%	40-80	VCS-Method
Lymphocyte	29.7		%	20-40	VCS-Method
Monocyte	10.2	H	%	2-10	VCS-Method
Eosinophil	2		%	1-8	VCS-Method
Basophil	0.7		%	0-2	VCS-Method
ABSOLUTE NEUTROPHIL COUNT	3.2		10^3/uL	1.5-7	Calculation
ABSOLUTE LYMPHOCYTE COUNT	1.6		10^3/uL	1.5-4	Calculation
ABSOLUTE MONOCYTE COUNT	0.6		10^3/uL	0-0.8	Calculation
ABSOLUTE EOSINOPHIL COUNT	0.1		10^3/uL	0-0.6	Calculation
ABSOLUTE BASOPHIL COUNT	0		10^3/uL	0-0.2	Calculation

Interpretation Notes :

Interfering factors: Factors such as age, gender, pregnancy, drug intake, excessive fluid intake, dehydration, hyperlipidemia, stress, exercise, post-operative state, new born, clotted specimen may interfere with test results. Hence recommended fresh EDTA blood sample for confirmation.

Reference :-Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition

Sample: EDTA Whole Blood

- END OF REPORT -

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Dr. Vidhya Mohan
Specialist Clinical Pathologist
Clinical Pathologist
DHA No. 23553203-004

QLABS Clinical Laboratory Off No 304, Carrera Building, Karama +971 4 578 2223 info@qlabsonline.com

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006026
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
Referred By	:	BEWELL SERVICES	**Reported on**	:	28-09-2024 20:16
Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
THYROID FUNCTION TEST (FT3+FT4+TSH)

Investigation	Results	Flag	Units	Biological Reference Interval	Method
TRIIODOTHYRONINE, FREE (FT3)	3.4		pg/mL	2-4.4	ECLIA
THYROXINE, FREE (FT4)	1.43		ng/dL	0.92-1.68	ECLIA
THYROID STIMULATING HORMONE (TSH)	1.82		uIU/mL	0.27-4.2	ECLIA

Interpretation Notes :

CLINICAL IMPLICATIONS:

1.TSH has diurnal rhythm, peaks at 2:00-4:00am and has low levels at 5:00-6:00pm with ultradian rhythm (shorter than circadian).

2.Moderately high TSH is often found in euthyroid patients during treatment for hyperthyroidism. In treated hyperthyroid patient, TSH may remain low for 4-6 week after euthyroid state is achieved. TSH surges with birth,peaking at 30min at 25-160mU/L,declining to cord blood levels by 3 days,and reaching adult values in the first week of life.

3.If there is clear evidence of hypothyroidism and TSH is not elevated then an implication of possible hypopituitarism exists.

4. FT3 is done to rule out T3 toxicosis,to evaluate thyroid replacement therapy,and to clarify protein binding abnormalities.

5. FT4 has diagnostic value in which total hormone levels do not correlate with thyrometabolic state and abnormality in thyroxine binding globulin levels and gives accurate picture in pregnancy and in those who receiving estrogens, phenytoin, salicycylates.

INTERFERING FACTORS:

1. Values are normally high in neonatal cord blood,and comes to normal by first week.
2. Values are increased in elderly patients,drugs like amphetamine abuse,potassium iodide,lithium,iodine containing drugs.
3. Values may be decreased in first trimester of pregnancy and during treatment with thyroxine and corticosteroids.
4. Heterophilic antibodies may falsely decrease or increase test results.
5. Recently administered radioisotopes and drugs may alter the test values.
6. Values are increased in infants at birth and rise even higher after 2 to 3 days of life.Heparin causes falsely elevated values.

REFERENCE:

1. Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2. Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU
3. Clinical microbiology procedures 4th edition AMY L LEBER.

Sample: Serum

- END OF REPORT -

"QLabs compliance with ISO 15189:2022 standards"

Verified By

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DHA No 68682396-002

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DHA No. 00231751-004

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Emirates ID / Passport No	:		**Print Version**	:	V.1

Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL
VITAMIN PACKAGE

Investigation	Results	Flag	Units	Biological Reference Interval	Method
VITAMIN D, 25-OH (TOTAL)	30.5		ng/mL	Deficient : ≤ 20 insufficient: 21-29 Sufficient: ≥ 30 Toxicity : >80	ECLIA
VITAMIN B12	838	H	pg/mL	197-771	ECLIA

Interpretation Notes :

a. VITAMIN D

CLINICAL IMPLICATIONS:

1. Increased Vitamin D levels are seen in gastrointestinal symptoms like anorexia, nausea,vomiting, constipation, hypercalcemia, renal colic, supplements, normal growing children ,pregnant and lactating females,tuberculosis,idiopathic hypercalciuria,sarcoidosis.
2. Decreased levels are seen in Inadequate diet,Inadequate exposure to sunlight,liver disease,Malabsorption syndrome,osteomalacia

b. VITAMIN B12

- **CLINICAL IMPLICATIONS:**Levels of Vitamin B12 and folate are usually tested in conjunction with one another for the diagnosis of Macrocytic anaemia and measurement of unsaturated VB12 binding capacity is valuable in distinguishing between untreated polycythemia vera and other conditions in which there is an elevated HCT. 2.Serum levels can be low in the absence of either anaemia or macrocytosis(eg in patients with myeloma,aplastic anaemia) and conversely elevated Transcobalamin II can cause a normal or increase Vitamin B12 levels despite deficient liverstores.
- **REFERENCE:**
- 1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
- 2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

Sample: Serum

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Specialist Microbiologist
DHA No. 00231751-004

Patient Name	:	Mr. MARCO KOUCH	**Sample UID No.**	:	01006026
Age / Gender	:	58 Y 5 M / Male	**Sample Collected On**	:	28-09-2024 09:26
Patient ID	:	QLD020052	**Registered On**	:	28-09-2024 09:28
Referred By	:	BEWELL SERVICES	**Reported on**	:	28-09-2024 20:16
Referral Client	:	BEWELL THERAPEUTIC SERVICES	**External Patient ID**	:	
Emirates ID / Passport No	:		**Print Version**	:	V.1

Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
FERRITIN	380	H	µg/L	20-250 Iron overload : > 400	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS:

1. Ferritin is the most reliable indicator of total body iron status and is more specific and sensitive than the iron concentration or TIBC for diagnosing iron deficiency. Ferritin decreases before anaemia and other changes occurs.
2. Decreased ferritin usually indicates iron deficiency anaemia and increased ferritin occurs in iron excess and other causes like hyperthyroid, liverdisease, haemolytic, megaloblastic, sideroblastic and thalassemia.
3. Ferritin levels less than 10ng/ml usually indicate iron deficiency anaemia. In conditions of iron overload and in some chronic diseases, serum ferritin is an unreliable estimate of storage iron and in such cases serum ferritin is less sensitive than serum iron concentration, TIBC, or percent transferrin saturation.

INTERFERING FACTORS:

1. Recently administered radioactive medication can cause spurious results.
2. Hemolyzed blood, age, diet, antithyroid therapies are the factors that may interfere the ferritin values.
3. Ferritin is not of value to evaluate iron stores in alcoholic person with liver disease

REFERENCE:

1) Manual of Laboratory and Diagnostics-Frances Fischbach Marshall B. Dunning III [9th Edition]

2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU

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RECOMMENDATION:

Recommended to do Iron, Ferritin, TIBC together to distinguish between iron deficiency anaemia and the anaemia of chronic disease.

- END OF REPORT -

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Azar
Lab Technologist
DHA No 68682396-002

Authorised By
Dr. Dheepa Manoharan
Medical Director
Specialist Microbiologist
DHA No. 00231751-004

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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
TESTOSTERONE (TOTAL)	3.79		ng/mL	Adult-Male : 2.80-11.00	ECLIA

Sample: Serum

Comments :

Clinical Implications: 1. Testosterone levels undergo large and rapid fluctuations, levels peak in early morning in males and females shows cyclic elevation 1 to 2 days mid cycle 2. Testosterone levels are normal in crptoorchidism, azoaspermia, oligospermia. Interference: 1. Alcohol in male decreases testosterone levels. 2. Estrogen therapy increases testosterone levels 3. Many drugs including androgen, steroids decrease testosterone levels.

Recommendation: Recommend to repeat the test at early morning for the highest levels.

REFERENCE:

1)Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
ESTRADIOL (E2)	18.2		pg/mL	10-50	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS: Estradiol is the most active of endogenous estrogens. Estradiol levels are markedly elevated at birth and decrease rapidly during the first week. In females estradiol levels increase progressively throughout puberty. During normal ovulatory cycle, estradiol is secreted in biphasic pattern, with mid-cycle and luteal phase peaks. In males, estradiol levels increase during puberty as a result of peripheral testosterone conversion.

INTERFERENCE: Clomiphene, diazepam, megestrol can alter the estradiol values.

REFERENCE:

1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]
2) Tietz clinical guide to Laboratory tests(Fourth edition) ALAN H.B.WU
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Interpretation Notes :

Table 1, Females		
Tanner Stage	**Mean Age**	**Reference Range**
Stage I (>14 days and prepubertal)	7.1 Years	Undetectable – 20 pg/mL
Stage II	10.5 Years	Undetectable – 24 pg/mL
Stage III	11.6 Years	Undetectable – 60 pg/mL
Stage IV	12.3 Years	15 – 85 pg/mL
Stage V	14.5 Years	15 – 350 pg/mL

Table 1, Males		
Tanner Stage	**Mean Age**	**Reference Range**
Stage I (3 - 10 days and prepubertal)	7.1 Years	Undetectable – 13 pg/mL
Stage II	12.1 Years	Undetectable – 16 pg/mL
Stage III	13.6 Years	Undetectable – 26 pg/mL
Stage IV	15.1 Years	Undetectable – 38 pg/mL
Stage V	18 Years	10 – 40 pg/mL

Increase level is seen in early puberty,Tumors in the ovaries or testes,gynecomastia,hyperthyroidism,cirrhosis of liver.Decrease level is seen in menopause,Tumer syndrom,ovarian failure,polycysticovarian syndrom(PCOS),depleted estrogen production,which can be casuded by low body fat.hypopituitarism,hypogonadism.

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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
PROGESTERONE	<0.05	L	ng/mL	0.126-0.975	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS :

1. Progesterone, a female sex hormone is primarily involved in the preparation of the uterus for pregnancy and its maintenance during pregnancy. The placenta begins producing progesterone at 12 weeks of gestation. The level peaks in the mid-luteal phase of the menstrual cycle. 2. Ovarian production of progesterone is low during the follicular phase of the menstrual cycle. At ovulation, the levels rise for 4-5 days and then falls. During pregnancy, there is a gradual increase from week 9 to week 32 of gestation. Serum progesterone levels used with beta HCG assist in differentiating normal uterine pregnancy from abnormal uterine or ectopic pregnancy. 3. Increased progesterone levels are associated with congenital adrenal hyperplasia, ovarian tumors, molar pregnancy and other conditions. Decreased progesterone levels are associated with threatened spontaneous abortion, galactorrhea, amenorrhea and other conditions.

REFERENCE:

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Interpretation Notes :

Progesterone is increased in congenital adrenal hyperplasia , ovarian cancer, adrenal cancer.
Progesterone is decreased in primary or secondary hypogonadism and short luteal phase syndrome, lack of periods, ectopic pregnancy, miscarriage and fetal death.

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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
FOLLICLE STIMULATING HORMONE (FSH)	9.9		mIU/mL	1.5-12.4	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS: 1. In hypogonadism, FSH and LH levels lower than normal for the patients age indicate hypothalamic or pituitary problems. Higher level indicate a primary gonadal defect. 2. In females peak levels of FSH at mid-cycle are lower and shorter than for LH. Because of the episodic, circadian and cyclic nature of pituitary gonadotropin secretion, clinical evaluation requires multiple single blood specimens or pooled blood specimens. Episodic fluctuation in LH secretion are greater than FSH. 3. In males correlation between sperm count and FSH are relatively poor. In the first year of life, gonadotropin levels are relatively high, then decrease to very low levels after 1 to 2 years and finally increase throughout puberty until adult levels are attained.

INTERFERING FACTORS: Recently administered radioisotopes, hemolysis of blood sample, estrogen, testosterone, drugs, pregnancy, heterophilic antibodies, stress, malnutrition, severe illness may alter the hormone results. High levels of TSH in untreated hypothyroid patients can result in falsely elevated level of LH.

REFERENCE:

1) Manual of Laboratory and Diagnostics -Frances Fischbach Marshall B. Dunning III [9th Edition]

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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
LUTEINISING HORMONE (LH)	8	H	mIU/mL	1.24-7.8	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS: 1. In hypogonadism, FSH and LH levels lower than normal for the patients age indicate hypothalamic or pituitary problems. Higher level indicate a primary gonadal defect. 2. In females peak levels of FSH at mid-cycle are lower and shorter than for LH. Because of the episodic, circadian and cyclic nature of pituitary gonadotropin secretion, clinical evaluation requires multiple single blood specimens or pooled blood specimens. Episodic fluctuation in LH secretion are greater than FSH. 3. In males correlation between sperm count and FSH are relatively poor. In the first year of life ,gonadotropin levels are relatively high, then decrease to very low levels after 1 to 2 years and finally increase throughout puberty until adult levels are attained.

INTERFERNCE: Recently administered radioisotopes ,hemolysis of blood sample, estrogen, testosterone ,drugs, pregnancy, heterophilic antibodies, stress, malnutrition, severe illness may alter the hormone results. High levels of TSH in untreated hypothyroid patients can result in falsely elevated level of LH.

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Department of IMMUNOLOGY
PLATINUM PACKAGE(69 tests, Age 40+)-BEWELL

Investigation	Results	Flag	Units	Biological Reference Interval	Method
PROLACTIN	5.5		ng/mL	4.04-15.2	ECLIA

Sample: Serum

Comments :

CLINICAL IMPLICATIONS: Circadian changes in prolactin concentration in adults are marked by episodic fluctuation and a sleep induced peak in the early morning hours. INTERFERENCE: 1. Physiologic elevations are found in fetes and newborn, in adults during sleep (peak in early morning hours), stress, exercise, lactation. 2. Estrogens, methyldopa, opiates and other dopaminergic dugs may alter the prolactin values.

RECOMMENDATIONS: Recommended fasting condition and blood sample to be drawn ideally at 3 to 4 hours after patient has awakened.

REFERENCE:

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