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MEDICAL LABORATORY

BML488737

Laboratory Investigation Report

Name	:	Ms. KYM CONWAY	**Ref No.**	:	43539
DOB	:	02/08/1995	**Sample No.**	:	2411499551
Age / Gender	:	29 Y 3 M / Female	**Collected**	:	13/11/2024 15:43
Referred by	:	DR HUMAIRA	**Registered**	:	13/11/2024 21:59
Centre	:	CITICARE MEDICAL CENTER	**Reported**	:	14/11/2024 13:13

BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
C-REACTIVE PROTEIN (CRP)	0.2		mg/L	< 5.0 Please note change. Source: Roche IFU.	Particle-enhanced immunoturbidimetric assay

INTERPRETATION NOTES :

1. CRP measurements are used as aid in diagnosis, monitoring, prognosis, and management of suspected inflammatory disorders and associated diseases, acute infections and tissue injury.
2. C-reactive protein is the classic acute phase protein in inflammatory reactions.
3. CRP is the most sensitive of the acute phase reactants and its concentration increases rapidly during inflammatory processes. The CRP response frequently precedes clinical symptoms, including fever. After onset of an acute phase response, the serum CRP concentration rises rapidly and extensively. The increase begins within 6 to 12 hours and the peak value is reached within 24 to 48 hours. Levels above 100 mg/L are associated with severe stimuli such as major trauma and severe infection (sepsis).
4. CRP response may be less pronounced in patients suffering from liver disease.
5. CRP assays are used to detect systemic inflammatory processes (apart from certain types of inflammation such as systemic lupus erythematosus (SLE) and Colitis ulcerosa); to assess treatment of bacterial infections with antibiotics; to detect intrauterine infections with concomitant premature amniorrhexis; to differentiate between active and inactive forms of disease with concurrent infection, e.g. in patients suffering from SLE or Colitis ulcerosa; to therapeutically monitor rheumatic disease and assess anti-inflammatory therapy; to determine the presence of post-operative complications at an early stage, such as infected wounds, thrombosis and pneumonia, and to distinguish between infection and bone marrow transplant rejection.

Sample Type : *Serum*

End of Report

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Greeshma P Sidharthan

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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
COMPLETE BLOOD COUNT (CBC)					
HEMOGLOBIN	13.7		g/dL	12 - 15.5	Photometric
RBC COUNT	4.7		10^6/µL	3.9 - 5	Electrical Impedance
HEMATOCRIT	40.7		%	35 - 45	Calculation
MCV	87.3		fL	82 - 98	Calculation
MCH	29.3		pg	27 - 32	Calculation
MCHC	33.6		g/dL	32 - 37	Calculation
RDW	14.4		%	11.9 - 15.5	Calculation
RDW-SD	44.2		fL		Calculation
MPV	9.8		fL	7.6 - 10.8	Calculation
PLATELET COUNT	203		10^3/uL	150 - 450	Electrical Impedance
PCT	0.2		%	0.01 - 9.99	Calculation
PDW	17.5		Not Applicable	0.1 - 99.9	Calculation
NUCLEATED RBC (NRBC)^	0.1		/100 WBC		VCS 360 Technology
ABSOLUTE NRBC COUNT^	0.01		10^3/uL		Calculation
EARLY GRANULOCYTE COUNT (EGC)^	0.2		%		VCS 360 Technology
ABSOLUTE EGC^	0.0		10^3/uL		Calculation
WBC COUNT	7.5		10^3/µL	4 - 11	Electrical Impedance
DIFFERENTIAL COUNT (DC)					
NEUTROPHILS	61		%	40 - 75	VCS 360 Technology
LYMPHOCYTES	34		%	30 - 60	VCS 360 Technology
EOSINOPHILS	1		%	0 - 6	VCS 360 Technology
MONOCYTES	4		%	1 - 6	VCS 360 Technology
BASOPHILS	0		%	0 - 1	VCS 360 Technology
ABSOLUTE COUNT					
ABSOLUTE NEUTROPHIL COUNT	4.6		10^3/uL	1.6 - 8.25	Calculation
ABSOLUTE LYMPHOCYTE COUNT	2.5		10^3/uL	1.2 - 6.6	Calculation
ABSOLUTE MONOCYTE COUNT	0.3		10^3/uL	0.04 - 0.66	Calculation
ABSOLUTE EOSINOPHIL COUNT	0.1		10^3/uL	0 - 0.66	Calculation
ABSOLUTE BASOPHIL COUNT	0.0		10^3/uL	0 - 0.11	Calculation

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Pathologist

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Jillian Joy Garcia
Laboratory Technologist

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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
COMPLETE BLOOD COUNT (CBC)					

INTERPRETATION NOTES :

Please note update on CBC report format, reference ranges and method(Beckman Coulter).

Sample Type : *EDTA Whole Blood*

End of Report

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Centre	:	CITICARE MEDICAL CENTER	**Reported**	:	14/11/2024 12:06

TUMOUR MARKER

Test	Result	Flag	Unit	Reference Range	Methodology
TUMOUR MARKERS SCREEN - FEMALE (CITICARE)					
CA 15-3^	13.5		U/mL	≤ 35 Please note change in method and reference range. Source: Snibe IFU.	CLIA

INTERPRETATION NOTES :

In Vitro ChemiLuminesence Assay for Quantitative determination of CA 15-3 is used as an aid for management of breast carcinomas.

Clinical Summary and Utility:

1. Carbohydrate antigen CA 15-3, is a transmembrane glycoprotein encoded by MUC1 gene. MUC1 gene is aberrantly overexpressed in 90% of breast carcinomas.
2. Elevated pre-op levels are directly related to tumor burden and CA 15-3 levels can be used as an independent prognostic marker.
3. CA 15-3 is also widely used or detecting recurrences or monitoring treatment efficacy in metastatic breast cancers.
4. Increased levels may also occur in patients with non mammary malignancies including ovarian, colorectal, liver, pancreatic, gastric and lung carcinomas.
5. Certain benign diseases such as chronic active hepatitis, liver cirrhosis, sarcoidosis, hypothyroidism and megaloblastic anemia may show a modest increase in CA 15-3 levels.

Limitations:

1. Results should be used in conjunction with patient's medical history, clinical examination and other findings. If CA 15-3 levels are inconsistent with clinical evidence, additional testing is needed for confirmation.
2. Interference and anomalous values may be observed if the patient has been treated with mouse monoclonal antibodies or if there is presence of heterophilic antibodies in patient's serum.

Note: The measured value of a patient's sample can vary depending on the testing procedure used. If there is a change in the assay procedure used while monitoring therapy, then the values obtained upon changing over to the new procedure must be confirmed by parallel measurements with both methods.

References:

1. Kit Insert
2. Duffy MJ, Evoy D, McDermott EW. CA 15-3: uses and limitation as a biomarker for breast cancer. Clin Chim Acta. 2010 Dec 14;411(23-24):1869-74.

Please note update in Interpretation Notes.

CA 19-9^	0.94		U/mL	≤ 41 Please note change in method and reference range. Source: Snibe IFU.	CLIA

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TUMOUR MARKER

Test	Result	Flag	Unit	Reference Range	Methodology
TUMOUR MARKERS SCREEN - FEMALE (CITICARE)					

INTERPRETATION NOTES :

In Vitro ChemiLuminesence Assay for Quantitative determination of CA-19.9 is done primarily to aid in the management of pancreatic carcinomas.

Clinical Summary and Utility:

1. CA-19.9, an oligosaccharide shares structural features with Lewis Blood Group substances. Thus, Lewis antigen negative individuals (approx. 5-10% of population), have no or scarce secretion of CA-19.9, which must be taken into account while interpreting the findings.
2. CA-19.9 levels are elevated in wide range of gastrointestinal conditions including colorectal, pancreatic, hepatic and gastric carcinomas. Increased levels are also seen in some patients with cholecystolithiasis, cholangitis, hepatitis, pancreatitis, cirrhosis and cystic fibrosis.
3. CA-19.9 has a prognostic value and is used as a predictive marker for pancreatic cancer. For instance, in resectable disease, low post-op values or a serial decrease in CA-19.9 levels have found to be prognostic for survival, following surgery.

Limitations:

1. Results should be used in conjunction with patient's medical history, clinical examination and other findings. If CA-19.9 levels are inconsistent with clinical evidence, additional testing is needed for confirmation.
2. Interference and anomalous values may be observed if the patient has been treated with mouse monoclonal antibodies or if there is presence of heterophilic antibodies in patient's serum.

Note: The measured value of a patient's sample can vary depending on the testing procedure used. If there is a change in the assay procedure used while monitoring therapy, then the values obtained upon changing over to the new procedure must be confirmed by parallel measurements with both methods.

References:

1. Kit Insert
2. Takhar AS, Palaniappan P, Dhingsa R, Lobo DN. Recent developments in diagnosis of pancreatic cancer. BMJ. 2004 Sep 18;329(7467):668-73.

Please note update in Interpretation.

CA 125	15.4		U/mL	< 35 Please note change in method and reference range. Source: Roche IFU.	ECLIA

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TUMOUR MARKER

Test	Result	Flag	Unit	Reference Range	Methodology
TUMOUR MARKERS SCREEN - FEMALE (CITICARE)					

INTERPRETATION NOTES :

1. CA 125 is a glycoprotein normally expressed in coelomic epithelium, which lines body cavities and envelopes the ovaries.
2. CA 125 levels are elevated in about 85 percent of women with ovarian cancer (especially serous epithelial tumours), but in only 50 percent of those with stage I disease.
3. Multiple benign disorders like Menstruation, pregnancy, fibroids, ovarian cysts, pelvic inflammation, cirrhosis, ascites, pleural and pericardial effusions, endometriosis also are associated with CA 125 elevations.
4. Levels above which benign diseases are considered unlikely are 200U/ml in premenopausal & 35 u/ml for postmenopausal women.

The measured value of a patient's sample can vary depending on the testing procedure used. If there is a change in the assay procedure used while monitoring therapy, then the values obtained upon changing over to the new procedure must be confirmed by parallel measurements with both methods.

Reference :

L.Perkin. et.al. Serum Tumor Markers. American family physicians Sep. 2003 vol.68 no.

Associated Test:

HE4 assay is a new test which also can be used for therapeutic monitoring as well as for risk stratification of harboring Epithelial Ovarian Cancer (ROMA value) in early stages.

CEA (CARCINO EMBRYONIC ANTIGEN)	< 3.33	ng/mL	Non-Smoker: <3.8 Smoker: <5.5 Please note change in method and reference range. Source: Roche IFU.	ECLIA

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TUMOUR MARKER

Test	Result	Flag	Unit	Reference Range	Methodology
TUMOUR MARKERS SCREEN - FEMALE (CITICARE)					

INTERPRETATION NOTES :

1. CEA (Carcinoembryonic Antigen), is an oncofetal glycoprotein and is expressed in normal mucosal cells and over expressed
2. in adenocarcinoma, especially colorectal cancer.
3. CEA is used as a marker for monitoring colorectal and gastrointestinal carcinoma and is raised in carcinoma of lung, breast, liver, pancreas, prostate, stomach and, ovary.
4. Benign conditions which can elevate CEA include smoking, hepatic diseases, infections, inflammatory bowel disease, trauma, collagen vascular disease, renal disorders, pancreatitis, cirrhosis of the liver and peptic ulcer, hypothyroidism, chemotheraphy, and radiation. Although values are usually less than 10 ng/mL.
5. CEA is not an effective screening test for hidden (occult cancer since early tumors do not cause significant blood elevations.
6. A single test result is difficult to evaluate, but a number of tests, done weeks apart, shows trends in disease progression or regression.

The measured value of a patient's sample can vary depending on the testing procedure used. If there is a change in the assay procedure used while monitoring therapy, then the values obtained upon changing over to the new procedure must be confirmed by parallel measurements with both methods.

Reference:

L.Perkin. et.al. Serum Tumor Markers. American family physicians sep. 2003 vol.68 no.6

Associated test:

FDP DR-70 is a non-invasive blood test available for monitoring Colorectal Cancer therapy & assessing Posttherapy recurrence.

Sample Type : Serum

End of Report

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TUMOUR MARKER

Test	Result	Flag	Unit	Reference Range	Methodology
TUMOUR MARKERS SCREEN - FEMALE (CITICARE)					
AFP (ALPHA FETO PROTEIN, SERUM)	< 2.18		ng/mL	</=7.0 AFP Values in Maternal serum: Gestation (Median 14 WEEKS 27.9 15 WEEKS 30.9 16 WEEKS 36.1 17 WEEKS 40.4 18 WEEKS 48.3 19 WEEKS 54.8 Source: Roche IFU.	ECLIA

INTERPRETATION NOTES :

1. The primary malignancies associated with AFP elevations are hepatocellular carcinoma and non-seminomatous germ cell tumors. Other gastrointestinal cancers like gastric, pancreatic occasionally cause elevations of AFP. Multiple benign disorders like cirrhosis, viral hepatitis, pregnancy are associated with AFP elevations. Level above which benign disease is considered unlikely is 500 ng/ml.
2. Range for newborns is not established, however neonates have elevated AFP levels (>100,000 ng/mL)(conversion 1 IU/ml x 1.21 = 1 ng/ml) that rapidly fall to below 100 ng/mL by 150 days & gradually return to normal by one year.

The measured value of a patient's sample can vary depending on the testing procedure used. If there is a change in the assay procedure used while monitoring therapy, then the values obtained upon changing over to the new procedure must be confirmed by parallel measurements with both methods.

Ref - Tsuchida Y et al: Evaluation of alpha-fetoprotein in early infancy. J Ped Surg 1978 April;13(2):155-162 .

Sample Type : Serum

End of Report

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