SAMPLE REPORT

Reference: Dr.SELF

Sample Collected At:
PROMISO HEALTH PVT LTD
2ND FLOOR, NO.10, KSSIDC
INDUSTRIAL ESTATE, NEAR SBI BANK,
MAHADEVPURA, WHITFIELD ROAD,
BANGALORE-560048."
Processing Location:- Metropolis Healthcare Ltd, #3, Jagannathan Road, Nungambakkam, Chennai - 600 034

CBC, Complete Blood Count

Investigation	Observed Value	Unit	Biological Reference Interval
Erythrocytes			
Erythrocyte (RBC) Count	**3.95**	mill/cu.mm	4.2-5.4
Haemoglobin (Hb)	**11.0**	gm/dL	12.5-16
PCV (Packed Cell Volume)	**32.9**	%	37-47
MCV (Mean Corpuscular Volume)	83.3	fL	78-100
MCH (Mean Corpuscular Hb)	27.8	pg	27-31
MCHC (Mean Corpuscular Hb Concn.)	33.4	g/dL	32-36
RDW (Red Cell Distribution Width)	**16.6**	%	11.5-14.0
Nucleated RBC	-	per 100 WBCs	
Leucocytes			
Total Leucocytes (WBC) count	8200	cells/cu.mm	4000-10500
Absolute Neutrophils Count	5576	/c.mm	2000-7000
Absolute Lymphocyte Count	2050	/c.mm	1000-3000
Absolute Monocyte Count	492	/c.mm	200-1000
Absolute Eosinophil Count	82	/c.mm	20-500
Absolute Basophil Count	**0**	/c.mm	20-100
Neutrophils	68	%	40-80
Lymphocytes	25	%	20-40
Monocytes	6	%	2.0-10
Eosinophils	1	%	1-6
Basophils	0	%	0-2
Platelets			
Platelet count	422	10^3 / µl	150-450
MPV (Mean Platelet Volume)	6.5	fL	6-9.5
PCT (Platelet Haematocrit)	0.275	%	0.2-0.5
PDW (Platelet Distribution Width)	15.8	%	9-17

EDTA Whole Blood - Tests done on Automated Five Part Cell Counter. (WBC,Platelet count by impedance method/DC detection,RBC by pulse height detection method, HB by Automated - Photometric Measurement, WBC differential by VCS technology other parameters calculated) **All Abnormal Haemograms are reviewed confirmed microscopically.** Differential count is based on approximately 10,000 cells.

Consultant Microbiologist
MBBS MD Microbiologist

Dr. KAVITA V
MD, DIP NB

Dr. Lakshmi Priya

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Investigation	Observed Value	Biological Reference Interval
Occult blood Stool (Stool,Two field Guaiac test / Immunochromatography.)	Negative	Negative

Remark : Occult blood performed by Two field Guaiac test / Immunochromatography.

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Investigation	Observed Value	Unit	Biological Reference Interval
Haemogram, advanced			
ESR - Erythrocyte Sedimentation Rate (EDTA Whole Blood,Automated -Capillary photometry aggregation/Manual - Westergrens method)	**76**	mm/hr	0-20

Method: Automated Westergren

Interpretation:

1. It indicates presence and intensity of an inflammatory process, never diagnostic of a specific disease. Changes are more significant than a single abnormal test.
2. It is a prognostic test and used to monitor the course or response to treatment of diseases like tuberculosis, bacterial endocarditis, acute rheumatic fever, rheumatoid arthritis, SLE, Hodgkins disease, temporal arteritis, polymyalgia rheumatica.
3. It is also increased in pregnancy, multiple myeloma, menstruation, and hypothyroidism.

Remark : ESR Performed using capillary photometric aggregation (for automated analysis) & westergrens (for manual testing).

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Investigation	Observed Value	Unit	Biological Reference Interval
HCG Beta Subunit, Serum (Serum,ECLIA)			
HCG Beta Subunit	Below 1.2	mIU/mL	Non pregnant: <= 5.3 Post menopausal: <= 8.3 Pregnant : Refer Interpretation Note : Change in Method & Reference range

Interpretation :

- During pregnancy (weeks of pregnancy – defined as completed weeks of pregnancy beginning with the start of the last menstruation phase), the following values have been determined.

Weeks of Gestation (Completed weeks of pregnancy post LMP)	**Range(mIU/ml) 5-95th percentile**
3	5.8-71.2
4	9.5-750
5	217-7138
6	158-31795
7	3697-163563
8	32065-149571
9	63803-151410
10	46509-186977
12	27832-210612
14	13950-62530
15	12039-70971
16	9040-56451
17	8175-55868
>18 weeks	8099-58176

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- High levels may indicate multiple pregnancies, choriocarcinoma or hydatidiform mole of the uterus, ovarian cancer
- Borderline high levels may not necessarily indicate pregnancy and it should be confirmed by taking another test after 48-72 hours to see rise in the levels.
- Low levels during pregnancy based on the gestational age may indicate fetal death, incomplete miscarriage, threatened spontaneous abortion (miscarriage) and ectopic pregnancy.
- Transient rise is seen during biochemical pregnancy where initial pregnancy test is positive but does not progress into an actual pregnancy. This implies a very early pregnancy loss. Such a pregnancy never reaches the stage where a gestational sac is seen on ultrasound examination. This type of pregnancy is often encountered with assisted reproductive technology.

Clinical Utility:

- Helps in the diagnosis of gestational trophoblastic disease (GTD), testicular tumors, ovarian germ cell tumors, teratomas, and, rarely, other human chorionic gonadotropin (hCG)-secreting tumors.

Note:

- Rare false-positivity is seen due to heterophile antibody interference.
- If results are discordant with the clinical picture or other biochemical or imaging tests, then the laboratory should be informed.
- Transient elevations of serum hCG can occur following chemotherapy in patients with susceptible tumors.
- End-stage kidney failure is associated with up to 10-fold rise in serum hCG levels.

Associated Tests:

- Pregascreen Dual (D0039_reflex), Pregascreen Quadruple (D0040_reflex)

References:

- Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th ed, Elsevier; 2018.
- Henry's Clinical Diagnosis and Management by Laboratory Methods. 23rd ed. St Louis, MO: Elsevier; 2017

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Investigation	Observed Value	Unit	Biological Reference Interval
Calcitonin (Thyrocalcitonin)** (Serum,ECLIA)	.	pg/mL	0-6.4

Medical Remarks: Calcitonin (Thyrocalcitonin)** : 0.50 pg/mL .

Interpretation:

- Calcitonin is most effectively produced by the Para-follicular cells of the thyroid gland.
- Other tissues capable of producing Calcitonin include the lungs, small intestine, thymus, parathyroid glands, as well as the liver.
- Calcitonin is implicated in calcium homeostasis, oppose the actions of parathyroid hormone (PTH) and tone down serum Ca2+ concentration.

Clinical Utility:

- Elevated Calcitonin levels- Medullary thyroid carcinoma, C- cell hyperplasia. Hypercalcemia, myeloproliferative disorders, chronic inflammatory disease. hypergastrinemia, pernicious anemia, chronic atrophic gastritis, cirrhosis, pancreatitis, sepsis, smoking, acute alcohol consumption.

Note:

- Some individuals have a basal calcitonin level higher than the routine population. In such cases, calcitonin levels 9-60 pg/mL in males and 6-30 pg/mL in females may be followed in a wait and watch strategy or undertake a calcium stimulation test.
- Elevated serum Calcitonin is not specific for any pathology, but depending on the underlying clinical circumstances, it can be relevant in inclusion and exclusion of various diagnostic possibilities.
- Oral calcium administration elicits diverse hormonal response causing variable Calcitonin estimation

Caution:

- Patients on Biotin supplement may have interference in some immunoassays. With individuals taking high dose Biotin (more than 5 mg per day) supplements, at least 8-hour wait time before blood draw is recommended.
- Drugs such as PPIs, β-blockers, corticosteroids and glucagon can cause elevated Calcitonin values.

Reference:

- Kiriakopoulos A, Giannakis P, Menenakos E. Calcitonin: current concepts and differential diagnosis. Ther Adv Endocrinol Metab. 2022;13:20420188221099344. Published 2022 May 21.

AFP-Alpha Feto Protein (Serum,CMIA)	1.84	IU/mL	0.56-2.64

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Investigation	Observed Value	Unit	Biological Reference Interval

Interpretation :

Pregnant Woman Post LMP (Week + Day)	Median (IU/ml)	Range (IU/ml)
14 + 3	21.73	18.2 to 45.5
15 + 3	25	21.1 to 52.7
16 + 3	28.75	24.5 to 61.0
17 + 3	33.08	28.3 to 70.7
18 + 3	38.05	32.8 to 81.9
19 + 3	43.78	37.9 to 95.0
20 + 3	50.36	40 to 100
21 + 3	57.93	45 to 120
22 + 3	66.11	52 to 138

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 = 1ng/ml) that rapidly fall to below 100 ng/mL by 150 days & gradually return to normal by one year. Ref - Tsuchida Y et al: Evaluation of alpha-fetoprotein in early infancy. J Ped Surg 1978 April;13(2):155-162 .

CEA-Carcino Embryonic Antigen,Serum (Serum,CMIA)	1.92	ng/mL	Non-Smoking: 0-2.5 Smoking: 0-5

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Investigation	Observed Value	Unit	Biological Reference Interval

Interpretation :

- CEA (Carcinoembryonic Antigen), is a tumor associated antigen
- Elevated CEA is noted in adenocarcinoma, especially colorectal cancer, carcinoma of lung, breast, liver, pancreas, prostate, stomach, ovary, lymphatic system and skin.
- Benign conditions which can elevate CEA include smoking, hepatic diseases, infections, inflammatory bowel disease, trauma, autoimmune diseases, renal disorders, pancreatitis, cirrhosis of the liver, peptic ulcer, hypothyroidism, chemotherapy and radiation.

Clinical Utility:

- CEA is used in the monitoring & follow up of patients with colorectal, gastric, breast, lung, prostatic, pancreatic and ovarian carcinoma.
- This test should not be used for diagnosis of cancer in isolation, as both false positive and negatives can occur

Disclaimer

- The above results obtained cannot be compared to or interchanged with results determined by different assays due to differences in assay methods and reagent specificity
- A single test result is difficult to evaluate, but a number of tests, done weeks apart, shows trends in disease progression or regression.

Reference:

- Kit insert
- Greg.L.Perkin. et.al. Serum Tumor Markers. American family physicians sep.2003 vol.68 no.6
- Nicholson BD, Shinkins B, Pathiraja I, Roberts NW, James TJ, Mallett S, Perera R, Primrose JN, Mant D. Blood CEA levels for detecting recurrent colorectal cancer. Cochrane Database Syst Rev. 2015 Dec 10;2015(12):CD011134. doi: 10.1002/14651858.CD011134.pub2. PMID: 26661580; PMCID: PMC7092609.

Thyroglobulin (Serum,ECLIA)	**2.38**	ng/mL	3.5-77

Medical Remarks: Please correlate clinically.

Interpretation:

1 .Thyroglobulin levels are increased in papillary carcinoma of thyroid as well as metastatic disease.
2 .Thyroglobulin levels are physiologically raised in newborn babies ,in the third trimester of pregnancy, inall forms of hyperthyroidism except
factitious hyperthyroidism.
3 .Thyroglobulin levels should be done before administering I-131; or needling the thyroid as these procedures causetransient elevation of the
iodoglycoprotein; levels also stay raised for upto 6 weeks after initial therapy withradioisotopes or surgery.

CA-19.9 (Serum,CMIA)	14.36	U/mL	0-37

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Investigation	Observed Value	Unit	Biological Reference Interval

Interpretation:
- CA 19.9 is also known as carbohydrate antigen and is elevated in carcinoma of pancreas, bile duct, stomach, colon, oesophagus and liver
- Non-malignant conditions with high CA 19.9 levels include cirrhosis, inflammation of the bile duct, cirrhosis, autoimmune conditions and inflammatory disease of the bowel
- Elevated levels may be seen in cystic fibrosis, an inherited disorder.

Clinical Utility:
- CA19-9 is used for monitoring monitoring treatment and relapse in patients with pancreatic adenocarcinoma and as a prognostic marker for survival following surgery.
- This test should not be used for diagnosis of cancer in isolation, as both false positive and negatives can occur

Note:
- Patients with Lewis-null blood type do not produce CA-19.9. Thus above 5% of persons are unable to produce this antigen

Disclaimer
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Reference:

- Package Insert
- Greg.L.Perkin. et.al. Serum Tumor Markers. American family physicians sep.2003 vol.68 no.6
- Helling TS. Caution in interpretation of the tumor marker CA 19.9 in patients with obstructive jaundice: illustrative case reports. J Miss State Med Assoc. 2013 Apr;54(4):96-9. PMID: 23767270.

CA-15.3 (Serum,CMIA)	9.7	U/mL	00-31.3

Interpretation
- CA 15-3 is a protein produced by the breast cells.
- Elevated levels of CA15-3 are found in patients with breast cancer.
- Increased levels are also noted in few cancerous conditions of ovary, colon, pancreas, lung.
- Occasionally it is found to be elevated in non-malignant conditions such as chronic hepatitis, cirrhosis and autoimmune diseases like Systematic Lupus Erythematosus.

Clinical Utility:
- CA 15-3 is used to monitor response to breast cancer treatment and disease recurrence.
- CA 15-3 has been shown to detect 40-60% of relapses before clinical or radiological evidence of disease.
- This test should not be used for diagnosis of cancer in isolation, as both false positive and negatives can occur

Disclaimer-
- The above results obtained cannot be compared to or interchanged with results determined by different assays due to differences in assay methods and reagent specificity.

Reference-

- Package Insert
- Clinical Practice Guidelines for Serum tumour markers, 2003
- Laboratory Medicine Practice Guidelines for use of tumour markers, NACB, 2009

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Routine Examination Urine

Investigation	Observed Value	Unit	Biological Reference Interval
General Examination			
Colour ((Naked eye examination))	Pale Yellow		Pale Yellow
Appearance ((Naked eye examination))	Clear		Clear
Reaction (pH) ((Automated Photoelectric colorimetry))	5.0		4.5-8
Specific gravity ((Automated Photoelectric colorimetry))	1.025		1.010-1.030
Chemical Examination (Automated Dipstick Method)			
Urine Protein (Albumin) ((Automated Photoelectric colorimetry/Sulpho salicylic acid method))	Absent		Absent
Urine Glucose (sugar) ((Automated Photoelectric colorimetry/Benedict's Test))	Absent		Absent
Urine Ketones (Acetone) ((Automated Photoelectric colorimetry/Rothera's method))	Absent		Absent
Bile salts ((Hay's sulphur method))	Absent		Absent
Bile pigments ((Automated Photoelectric colorimetry/Fouchet's method))	Absent		Absent
Urobilinogen ((Automated Photoelectric colorimetry/Ehrlich's aldehyde method))	Normal		Normal
Nitrite ((Automated Photoelectric colorimetry))	Negative		Negative
Microscopic Examination(Automated cell analyzer by Flow Cytometry Technology)/Microscopy			
Red blood cells	5.2	/uL	0-30.7
	0.9	/hpf (Calculated)	0.0-5.5
Dysmorphic Red Blood Cells	Absent		Absent
Pus cells (WBCs)	5.1	/uL	0-39
	0.9	/hpf (Calculated)	0.0-7.0
Epithelial cells	7.0	/uL	0-45.6
	1.3	/hpf (Calculated)	0.0-8.2
Crystals	Absent	/hpf	Absent

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Investigation	Observed Value	Unit	Biological Reference Interval
Cast	Absent	/hpf	Absent
Amorphous deposits	Absent		Absent
Bacteria	Absent	/hpf	Absent
Trichomonas Vaginalis	Absent		Absent
Yeast cells	Absent		Absent

All urine samples are checked for adequacy and suitability before examination

-- End of Report --

Refer to conditions of reporting overleaf ***Referred Test* Resu

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