NAME	**: Mrs. ASHA MALIK**		
AGE/ GENDER	: 36 YRS/FEMALE	**PATIENT ID**	: 1606039
COLLECTED BY	:	**REG. NO./LAB NO.**	**: 012409080041**
REFERRED BY	:	**REGISTRATION DATE**	: 08/Sep/2024 10:42 AM
BARCODE NO.	: 01516557	**COLLECTION DATE**	: 08/Sep/2024 10:45AM
CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 08/Sep/2024 11:11AM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval

HAEMATOLOGY

HAEMOGLOBIN (HB)

HAEMOGLOBIN (HB) *by CALORIMETRIC*	14.8	gm/dL	12.0 - 16.0

INTERPRETATION:-

Hemoglobin is the protein molecule in red blood cells that carries oxygen from the lungs to the bodys tissues and returns carbon dioxide from the tissues back to the lungs.

A low hemoglobin level is referred to as ANEMIA or low red blood count.

ANEMIA (DECRESED HAEMOGLOBIN):

1) Loss of blood (traumatic injury, surgery, bleeding, colon cancer or stomach ulcer)
2) Nutritional deficiency (iron, vitamin B12, folate)
3) Bone marrow problems (replacement of bone marrow by cancer)
4) Suppression by red blood cell synthesis by chemotherapy drugs
5) Kidney failure
6) Abnormal hemoglobin structure (sickle cell anemia or thalassemia).

POLYCYTHEMIA (INCREASED HAEMOGLOBIN):

1) People in higher altitudes (Physiological)
2) Smoking (Secondary Polycythemia)
3) Dehydration produces a falsely rise in hemoglobin due to increased haemoconcentration
4) Advanced lung disease (for example, emphysema)
5) Certain tumors
6) A disorder of the bone marrow known as polycythemia rubra vera,
7) Abuse of the drug erythropoetin (Epogen) by athletes for blood doping purposes (increasing the amount of oxygen available to the body by chemically raising the production of red blood cells).

NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD

DR.VINAY CHOPRA
CONSULTANT PATHOLOGIST
MBBS, MD (PATHOLOGY & MICROBIOLOGY)

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CLIENT CODE.	: KOS DIAGNOSTIC LAB	**REPORTING DATE**	: 08/Sep/2024 01:43PM
CLIENT ADDRESS	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval

CLINICAL CHEMISTRY/BIOCHEMISTRY

PROTEINS TOTAL

TOTAL PROTEINS: SERUM *by BIURET, SPECTROPHOTOMETRY*	6.49	gm/dL	6.20 - 8.00

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IRON DEFICIENCY MONITORING PROFILE

Test Name	Value	Unit	Biological Reference interval
FERRITIN: SERUM *by CLIA (CHEMILUMINESCENCE IMMUNOASSAY)*	49.74	ng/mL	4.63 - 204.0
IRON: SERUM *by FERROZINE, SPECTROPHOTOMETRY*	136.5	µg/dL	37.0 - 145.0
UNSATURATED IRON BINDING CAPACITY (UIBC) :SERUM ***by FERROZINE, SPECTROPHOTOMETRY***	**74.71^{L}**	**µg/dL**	**150.0 - 336.0**
TOTAL IRON BINDING CAPACITY (TIBC) :SERUM ***by SPECTROPHOTOMETERY (FERENE)***	**211.21^{L}**	**µg/dL**	**230 - 430**
%TRANSFERRIN SATURATION: SERUM ***by CALCULATED, SPECTROPHOTOMETERY (FERENE)***	**64.63^{H}**	**%**	**15.0 - 50.0**
TRANSFERRIN: SERUM ***by SPECTROPHOTOMETERY (FERENE)***	**149.96^{L}**	**mg/dL**	**200.0 - 350.0**

INTERPRETATION:-

VARIABLES	*ANEMIA OF CHRONIC DISEASE.*	*IRON DEFICIENCY ANEMIA (IDA)*	*THALASSEMIA ALPHA/BETA TRAIT*
SERUM IRON:	Normal to Reduced	Reduced	Normal
TOTAL IRON BINDING CAPACITY (TIBC):	Decreased	Increased	Normal
% TRANSFERRIN SATURATION:	Decreased	Decreased < 12-15 %	Normal
SERUM FERRITIN:	Normal to Increased	Decreased	Normal or Slightly Increased

IRON:
1.Serum iron studies is recommended for differential diagnosis of microcytic hypochromic anemia.i.e iron deficiency anemia, zinc deficiency anemia,anemia of chronic disease and thalassemia syndromes.
2.It is essential to isolate iron deficiency anemia from Beta thalassemia syndromes because during iron replacement which is therapeutic for iron deficiency anemia, is severely contra-indicated in Thalassemia.

TOTAL IRON BINDING CAPACITY (TIBC):
1.It is a direct measure of protein transferrin which transports iron from the gut to storage sites in the bone marrow.

% TRANSFERRIN SATURATION:
1.Occurs in idiopathic hemochromatosis and transfusional hemosiderosis where no unsaturated iron binding capacity is available for iron

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Test Name	Value	Unit	Biological Reference interval

mobilization. Similar condition is seen in congenital deficiency of transferrin.

FERRITIN:

1.As Ferritin is an acute phase reactant, it is often raised in both acute and chronic inflammatory conditions of he body such as infections leading to false positive results. In such conditions Ferritin levels should always be correlated with C-Reactive Protein to rule out any inflammatory conditions.

2.Patients with iron deficiency anemia, may occasionally have elevated or normal ferritin levels. This is usually in patients already receiving iron therapy or in patients with concomitant hepatocellular injury.

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Test Name	Value	Unit	Biological Reference interval

VITAMINS

VITAMIN B12/COBALAMIN

VITAMIN B12/COBALAMIN: SERUM ***by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)***	**150.22**[L]	**pg/mL**	**190.0 - 830**

INTERPRETATION:-

INCREASED VITAMIN B12	DECREASED VITAMIN B12
1.Ingestion of Vitamin C	1.Pregnancy
2.Ingestion of Estrogen	2.DRUGS:Aspirin, Anti-convulsants, Colchicine
3.Ingestion of Vitamin A	3.Ethanol Igestion
4.Hepatocellular injury	4. Contraceptive Harmones
5.Myeloproliferative disorder	5.Haemodialysis
6.Uremia	6. Multiple Myeloma

1.Vitamin B12 (cobalamin) is necessary for hematopoiesis and normal neuronal function.
2.In humans, it is obtained only from animal proteins and requires intrinsic factor (IF) for absorption.
3.The body uses its vitamin B12 stores very economically, reabsorbing vitamin B12 from the ileum and returning it to the liver; very little is excreted.
4.Vitamin B12 deficiency may be due to lack of IF secretion by gastric mucosa (eg, gastrectomy, gastric atrophy) or intestinal malabsorption (eg, ileal resection, small intestinal diseases).
5.Vitamin B12 deficiency frequently causes macrocytic anemia, glossitis, peripheral neuropathy, weakness, hyperreflexia, ataxia, loss of proprioception, poor coordination, and affective behavioral changes. These manifestations may occur in any combination; many patients have the neurologic defects without macrocytic anemia.
6.Serum methylmalonic acid and homocysteine levels are also elevated in vitamin B12 deficiency states.
7.Follow-up testing for antibodies to intrinsic factor (IF) is recommended to identify this potential cause of vitamin B12 malabsorption.
NOTE:A normal serum concentration of vitamin B12 does not rule out tissue deficiency of vitamin B12. The most sensitive test for vitamin B12 deficiency at the cellular level is the assay for MMA. If clinical symptoms suggest deficiency, measurement of MMA and homocysteine should be considered, even if serum vitamin B12 concentrations are normal.

*** End Of Report ***

DR.VINAY CHOPRA
CONSULTANT PATHOLOGIST
MBBS, MD (PATHOLOGY & MICROBIOLOGY)

DR.YUGAM CHOPRA
CONSULTANT PATHOLOGIST
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