Reference No.	**: - 1912220259**	Age/Gender	: **22 Yrs/Male**
Pt's Name	**: Mr. JAPTESH**		**AMB-KOS**
Referred By	**: NA**		
Sample Collection Date/Time	**: 08-Dec-2019**	Date	**:08-Dec-2019**
Sample Receiving Date/Time	**: 09-Dec-2019 02:12PM**	Approvel Date	**:09-Dec-2019 07:39PM**
Sample From	**: KOS DIAG LAB**	Report Print Time	**:22-Dec-2019 12:02AM**

Test Description	Observed Value	Biological Reference Interval
	ERYTHROPROTEIN*	
ERYTHROPROTEIN*	7.12	2.59-18.50 mIU/mL

Biological Ref_range : 2.59 - 18.50 mIU/mL

Comment :

Erythropoietin, a glycoprotein (~30,400 Daltons) produced primarily by the kidney, is the principal factor regulating red blood cell production (erythropoiesis) in mammals. Renal production of EPO is regulated by changes in oxygen availability. Under conditions of hypoxia, the level of EPO in the circulation increases and this leads to increased production of red blood cells.

The over-expression of EPO may be associated with certain pathophysiological conditions. 1 Polycythemia exists when there is an overproduction of red blood cells (RBCs). 3 Primary polycythemias or polycythemia vera, 4 are caused by EPO-independent growth of erythrocytic progenitors from abnormal bone marrow stem cells and in most cases decreased levels of EPO are found in the serum of affected patients. 3 Conversely, various types of secondary polycythemias are associated with the production of elevated levels of EPO.

The overproduction of EPO may be an adaptive response associated with conditions that produce tissue hypoxia, such as living at a high altitude, chronic obstructive pulmonary disease, cyanotic heart disease, sleep apnea, high oxygen affinity hemoglobinopathy, smoking, or localized renal hypoxia. 1,2 In other instances, elevated EPO levels are the result of production by neoplastic cells. Cases of increased EPO production and erythrocytosis have been reported for patients with renal carcinomas, 5 polycystic kidney disease, 6 Wilms'tumors, 7 hepatomas, 5 liver carcinomas, 8 cerebellar hemangioblastomas, 5,9,10 adrenal gland tumors, 5,11 and leiomyomas.

Deficient EPO production is found in conjunction with certain forms of anemias. These include anemia of renal failure, 13 end-stage renal disease, 1,2,14 anemia of prematurity, 2 anemia of hypothyroidism2 and anemia of malnutrition. 2 Anemias of chronic disease (ACD) 15 (chronic infections, 1 autoimmune diseases, 1 rheumatoid arthritis, 16 AIDS, 17 malignancies 18), are characterized by a blunted response of erythroid progenitors to EPO.

EPO levels show a smaller increase in patients with ACD than in equally anemic patients without ACD. 19 Many of these conditions are associated with the generation of IL-1 and TNF-α, factors that have been shown to be inhibitors of EPO activity. 1,20 Other forms of anemias are due to EPO-independent causes and affected individuals show elevated levels of EPO. These forms include aplastic anemias, iron deficiency anemias, thalassemias, megaloblastic anemias, pure red cell aplasias, and myelodysplastic syndromes.

Recombinant human EPO (rhEPO) is used as treatment to stimulate red cell production mainly in chronic renal failure and anemia caused by chemotherapy and also the AIDS drug zidovudine. 21 Patient responsiveness to rhEPO therapy in anemia of cancer is approximately 50%. 22 Recombinant human EPO therapy is not recommended for chemotherapy-treated cancer patients with endogenous serum EPO levels of greater than 200 mIU/mL. 21 However, several investigators have reported that in chemotherapy-treated cancer patients baseline EPO levels of greater than 500 mIU/mL predict unresponsiveness to EPO therapy. 22 Zidovudine-treated HIV patients may not respond to rhEPO therapy if their endogenous serum EPO levels are greater than 500 mIU/mL. 21,23 In addition, an algorithm has been reported using a serum EPO cutoff of 100 mIU/mL along with hemoglobin measurement after two weeks of rhEPO to predict rhEPO responsiveness. 22 The Access EPO assay recognizes both endogenous and recombinant EPO.

Laboratory is NABL Accredited

*** End Of Report ***

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