**Hematology Assignment (LAB)**

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**Q: Explain the following.**

**Ans:**

1. **Leukopenia:-**

The decreases in the number of WBC’s below normal rang is called leukopenia.

It is found in the following conditions.

\* Typhoid

\* Drugs

\* Radiations

\* Aplastic anemia

\* Kalazar

\* Malaeia

\* Infectious hepatitis

\* Idiopathic

**Decrease Conditions:**

1. Neutropeina
2. Eosinopenia
3. Basopenia
4. Monocytopenia
5. Lymphopenia.
6. **Lymphocytosis:-**

The increase in the number of lymphocytes above normal range is called lymphocytosis.

**Conditions:**

\* Whooping cough

\* Measles

\* Infectious

\* Mumps

\* Lymphocytic leukemia

1. **Lymphocytopenia:-**

The decrease in the number of lymphocytes below normal range is called lymphocytopenia.

**Conditions:**

\* AIDS

\* Exposure to radiation

\* Certain drugs

\* Administration of corticosteroids

\* Severe bone marrow failure

1. **Basophilia:-**

The increase in the number of basophils above normal range is called basophilia.

**Conditions:**

**\* Allergy or inflammation:**

\* Ulcerative colitis

\* Erythroderma, urticaria

\* Juvenile rheumatoid arthritis

**\* Endocrinopathy:**

\* Diabetes mellitus

\* Estrogen administration

\* Hypothyroidism (myxedema)

**\* Infection:**

\* Chicken pox

\* Influenza

\* Smallpox

\* Tuberculosis

**\* Iron Deficiency:**

**\* Exposure to ionizing radiation:**

**\* Neoplasia:**

\* Basophilic leukemia

**\* Myeloproliferative neoplasms:**

( Especially chronic myelogenous leukemia; also polycythemia vera, primary myelofibrosis, essential thrombocythemia)

1. **Neutrophilia;-**

The increase in the number of neutrophil above normal range is called neutrophilia.

**Bacterial:**

\* Appendicitis

\* Osteomyelitis

\* Meningitis

\* Tonsilitis

**Viral:**

\* Chicken pox

\* Small pox

1. **Thrombocytosis:-**

\*Thrombocytosis is a condition in which there is an excessive number of platelets in the blood.

\* Platelets are blood cells in plasma that stop bleeding by sticking together to form a clot.

\* Too many platelets can lead to certain conditions, including stroke, heart attack, or a clot in the blood vessels.

**Causes:**

Causes of secondary thrombocytosis include infection, inflammatory states (for example, inflammatory bowel disease), Physical stress ( including the post-operative state), acute blood loss, iron deficiency anemia, post-splenectomy and underlying malignancy.

**Treatment:**

Currently,hydroxyurea plus aspirin is the standard treatment for people who have primaey thrombocythemia and are at high risk for blood clots. Anagrelide. This medicine also has been used to lower platelet counts in people who have thrombocythemia.

1. **Thrombocytopenia:-**

\* Thrombocytopenia is a condition in which you have a low blood platelet count. \* Platelets (thrombocytes) are colorless blood cells that help blood clot.

\* Platelets stop bleeding by clumping and forming plugs in blood vessel injuries.

**Causes:**

\* The immune thrombocytopenia usually happens when your immune system mistakenly attacks and destroys platelets, which are cell fragments that help blood clot.

\* In adults,this may be triggered by infection with HIV, Hapatitis or H. Pylori - the type of bacteria that causes stomach ulcers.

**Treatment:**

Below this disease use

Generic name:

Dexamethasone systemic

Brand name:

Dexamethasone Intensol, Dexpak Taperpak, De-Sone LA.

Drugs class:

Glucocorticoids for consumers:

Dosage, Interactions, For professionals: A-Z

Drugs Facts, AHFS DI Monograph, Prescribing Information.

1. **Polycythemia:-**

\* Polycythemia refers to an increase in the number of red blood cells in the body.

\* The extra cells cause the blood to be thicker, and this, in turn,

\* Increase the risk of other health issues, such as blood clots.

**Causes:**

\* Polycythemia are primary or secondary.

\* In primary polycythemia abnormalities in red blood cells production.

An increase in red cell count.

\* In secondary polycythemia, factors external to red blood cell production ( for example, Hypoxia, sleep apnea, certain tumors) results in polycythemia.

**Treatment:**

\* The main treatment for people with polycythemia vera.

\* This decreases your blood volume and reduces the number of excess blood cells.

1. **Anemia:**

\* Anemia is a condition in which you lack enough healthy red blood cells to carry adequate oxygen to your body’s tissues.

\* Having anemia can make you feel tired and weak.

\* There are many forms of anemia, each with its own cause.

\* Anemia can be temporary or long term, and it can rang from mild to severe.

**Cause:**

\* Anemia caused by blood loss.

\* Anemia caused by decreased or faulty red blood cell production.

\* Anemia caused by destruction of red blood cells.

**Treatment:**

\* Treatment for anemia depends on the type,cause, and severity of the condition.

\* Treatment may include dietary changes or supplements, medicines, procedures, or surgery to treat blood loss.

1. **Leukemia:-**

\* Leukemia is a blood cancer caused by a rise in the number of white blood cells in your body.

\* Those white blood cells crowd out the red blood cells and platelets that your body needs to be healthy.

\* The extra white blood cells don’t work right.

**Causes:**

\* Smoke.

\* Are exposed to a lot of radiation or certain chemicals

\* Had radiation therapy or chemotherapy to treat cancer.

\* Have a family history of leukemia.

\* Have a genetic disorder like Down syndrome.

**Treatment:**

\* Chemotherapy.

\* Radiation.

\* Biologic therapy.

\* Targeted therapy.

\* Stem cell transplant.

\* Surgery>

1. **Reticulocytosis:-**

\* Reticulocytosis is a condition where there is an increase in reticulocytes, immature red blood cells.

\* It is commonly seen in anemia.

\* They are seen on blood films when the bone marrow is highly active in an attempt to replace red blood cell loss such as in haemolytic anaemia, haemorrhage.

**Causes:**

\* This can be caused by aplastic anemia or other type of anemia, such as iron deficiency anemia.

\* A low reticulocyte count can also be caused by exposure to radiation, along-term (chronic) infection, or by certain medicines that damage the bone marrow.

**Treatment:**

\* Check how well bone marrow is working to make red blood cells.

\* Check to see if treatment for anemia is working.

For example:

\* A higher reticulocytr count means that iron replacement treatment or other treatment to reverse the anenia is working.

***The E.N.D***

***Thank You!***