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BS MLT 4TH SEMESTER

SUBMITTED TO SAIMA HADI

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QUESTION 1 : Write a note on Hodgkin lymphoma ?

Answer : Hodgkin lymphoma :

Hodgkin's disease (HD) is a type of lymphoma, which is a blood cancer that starts in the lymphatic system. The lymphatic system helps the immune system get rid of waste and fight infections. HD is also called Hodgkin disease, Hodgkin lymphoma, and Hodgkin's lymphoma.

HD originates in white blood cells that help protect you from germs and infections. These white blood cells are called lymphocytes. In people with HD, these cells grow abnormally and spread beyond the lymphatic system. As the disease progresses, it makes it more difficult for your body to fight infections.

HD can be either classic Hodgkin's disease or nodular lymphocytic predominant Hodgkin's lymphoma (NLPHL). The type of HD is based on the types of cells involved in your condition and their behavior.

The main cause of HD isn't known. The disease has been linked to DNA mutations, or changes, as well as to the Epstein-Barr virus (EBV), which causes mononucleosis. HD can occur at any age, but it most commonly affects people between ages 15 and 40 and people over age 55.

SYMPTOMS :

The most common symptom of HD is swelling of the lymph nodes, which causes a lump to form under the skin. This lump usually isn't painful. It may form in one or more of the following areas:

- on the side of the neck
- in the armpit
- around the groin

Other symptoms of HL include:

- night sweats
- itchy skin
- fever
- fatigue
- unintended weight loss
- persistent cough, trouble breathing, chest pain
- pain in the lymph nodes after consuming alcohol
- enlarged spleen

DIAGNOSED :

To diagnose HD, your doctor will perform a physical exam and ask you about your medical history. Your doctor will also order certain tests so they can make a proper diagnosis. The following tests may be done:

- imaging tests, such as X-rays or CT scans
- lymph node biopsy, which involves removing a piece of lymph node tissue to test for the presence of abnormal cells
- blood tests, such as a complete blood count (CBC), to measure levels of red blood cells, white blood cells, and platelets
- immunophenotyping to determine the type of lymphoma cells that are present
- lung function tests to determine how well your lungs are working
- an echocardiogram to determine how well your heart is working

- bone marrow biopsy, which involves the removal and examination of marrow inside your bones to see if the cancer has spread

STAGING :

Staging

Once an HD diagnosis has been made, the cancer is assigned a stage. Staging describes the extent and severity of the disease. It will help your doctor determine your treatment options and outlook.

There are four general stages of HD:

- **Stage 1 (early stage)** means that cancer is found in one lymph node region, or the cancer is found in only one area of a single organ.
- **Stage 2 (locally advanced disease)** means that cancer is found in two lymph node regions on one side of the diaphragm, which is the muscle beneath your lung, or that cancer was found in one lymph node region as well as in a nearby organ.
- **Stage 3 (advanced disease)** means that cancer is found in lymph node regions both above and below your diaphragm or that cancer was found in one lymph node area and in one organ on opposite sides of your diaphragm.
- **Stage 4 (widespread disease)** means that cancer was found outside the lymph nodes and has spread widely to other parts of your body, such as your bone marrow, liver, or lung.

QUESTION 2 : WHAT IS HEMOSTASIS, and also explain steps and clothing factors ?

Answer : HEMOSTASIS :

Hemostasis or haemostasis is a process to prevent and stop bleeding, meaning to keep blood within a damaged blood vessel. It is the first stage of wound healing. This involves coagulation, blood changing from a liquid to a gel. Intact blood vessels are central to moderating blood's tendency to form clots.

STEPS OF HEMOSTASIS :

Involves in three major steps .

1) vascular spasm :

Reduce blood flow through a damaged vessel.

2) **formation of a platelet plug :**

Platelet aggregates on contact with exposed collagen in damaged wall of the vessel platelet release ADP which cause surface of nearby circulating platelet to become stickly in order to adhere to first layer of aggregated platelets.

3) **Blood coagulation :**

Transformation of blood form liquid to solid gel .

Clothing factors :

There are about thirteen known clotting factors:

- Fibrinogen (Factor 1)
- Prothrombin (Factor 2)
- Thromboplastin (Factor 3)
- Calcium (Factor 4)
- Proaccelerin or Labile Factor (Factor 5)
- Stable Factor (Factor 6)
- Antihemophilic Factor (Factor 8)
- Christmas Factor (Factor 9)
- Some other etc are clotting factors.

QUESTION 3 : Explain Hemophilia its types symptoms, and lab diagnosis ?

Answer : HEMOPHILIA : is usually an inherited bleeding disorder in which the blood does not clot properly. This can lead to spontaneous bleeding as

well as bleeding following injuries or surgery. Blood contains many proteins called clotting factors that can help to stop bleeding.

types of Hemophilia :

The three main forms of hemophilia include the following:

- Hemophilia A: Caused by a lack of the blood clotting factor VIII; approximately 85% of hemophiliacs have type A disease.
- Hemophilia B: Caused by a deficiency of factor IX.
- Hemophilia C: Some doctors use this term to refer to a lack of clotting factor XI.

Symptoms :

- Unexplained and excessive **bleeding** from cuts or injuries, or after surgery or dental work.
- Many large or deep **bruises**.
- Unusual **bleeding** after vaccinations.
- **Pain**, swelling or tightness in your **joints**.
- **Blood** in your urine or stool.
- **Nosebleeds** without a known cause.
- In infants, unexplained irritability

LAB DAIGNOSIS :

- Complete blood count (CBC). It gives important information about the kinds and numbers of cells in your blood.
- Prothrombin time (PT) and activated partial thromboplastin time (PTT). Both test how long it takes blood to clot.
- Factor VIII and factor IX tests.

QUESTION 4 : Describe von wille brand disease ?

Answer :

Von Willebrand disease (VWD) is a genetic **disorder** caused by missing or defective **von Willebrand** factor (VWF), a clotting protein.

VWF binds factor VIII, a key clotting protein, and platelets in blood vessel walls, which help form a platelet plug during the clotting process.

Symptoms :

Symptoms of von Willebrand disease

- **bruising** easily or getting large **bruises**.
- frequent or long-lasting **nosebleeds**.
- **bleeding** gums.
- heavy or long-lasting **bleeding** from cuts.
- in women, heavy periods and **bleeding** during or after labour.
- heavy or long-lasting **bleeding** after a tooth removal or surgery.

Types of VON Willebrand Disease :

Types of von Willebrand disease

- **type** 1 – the mildest and most common **type**. People with **type** 1 VWD have a reduced level of **von Willebrand factor** in their blood. ...
- **type** 2 – in people with this **type** of VWD, **von Willebrand factor** doesn't work properly. ...
- **type** 3 – the most severe and rarest **type**

Diagnosis :

Diagnostic test :

The blood test that a doctor can order to diagnose VWD (oe another platelet disorder) including : factor Vlll clotting activity _ to measure the amount of factor Vlll in the blood . VON Willebrand factor antigen _to the amount of VWD in the blood.

QUESTION : 5 Explain the Hemolytic uremic syndrome and its types ?

Answer : Hemolytic uremic syndrome : Hemolytic–uremic syndrome (**HUS**) is a group of blood disorders characterized by low red blood cells, acute kidney failure, and low platelets. Initial symptoms

typically include bloody diarrhea, fever, vomiting, and weakness. Kidney problems and low platelets then occur as the diarrhea is improving.

Signs and symptoms :

Signs and symptoms of these changes include:

- Pale coloring, including loss of pink color in cheeks and inside the lower eyelids.
- Extreme fatigue.
- Shortness of breath.
- Easy bruising or unexplained bruises.
- Unusual bleeding, such as bleeding from the nose and mouth.
- Decreased urination or blood in the urine

Risk factors :

Infection progresses to hemolytic uremic syndrome (HUS) in 2% to 15% of cases (2). In studies of E. coli O157:H7 outbreaks, female sex, young age, elevated leukocyte count, antimicrobial drug use, vomiting, and fever have been reported as risk factors for HUS (3–11).

Typical and Atypical _HUS

HUS is usually categorized as **typical**, caused by Shiga toxin–producing Escherichia coli (STEC) infection, as **atypical HUS** (aHUS), usually caused by uncontrolled complement activation, or as secondary **HUS** with a coexisting disease.

Complications : **HUS can cause life-threatening complications, including:**

- **Kidney failure**, which can be sudden (acute) or develop over time (chronic)
- High **blood** pressure.
- Stroke or seizures.
- Coma.
- Clotting problems, which can lead to bleeding.
- **Heart problems**.

Lab diagnosis :

Lab Daignoses

- CBC
- TLC — Increase 50000 – 60000/uL
- Hb — Decrease
- Platlets — Decrease